The treatment of backward displacements of the uterus and of prolapsus uteri by the new method of shortening the round ligaments / by William Alexander.

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CHAPTER I

GENERAL CONSIDERATIONS—ORIGIN OF THE OPERATION—ANATOMY AND PHYSIOLOGY OF THE ROUND LIGAMENTS AND THEIR RELATION TO UTERINE DISPLACEMENTS—WHY THE CURE BY SHORTENING THESE LIGAMENTS MAY THEORETICALLY BE PERMANENT

It has been my lot for some years to hold an appointment to a hospital where many chronic cases, and those pronounced incurable, are collected. The *ordinary* operative or therapeutic treatment has failed to cure them, and they are sent to the workhouse to be kept warm, to be fed, and to have their urgent symptoms relieved.

The treatment of such cases in workhouses

may be of two kinds :—1. The routine treatment, according to which we are content to prescribe the ordinary remedies, no matter how inefficient they may be. This is by far the easier method, and is the one more commonly adopted. 2. The scientific method of treatment, by which we constantly endeavour, through incessant study, to remedy the failure of the recognised methods of treatment even in the most hopeless cases.

In such institutions as the Liverpool Workhouse Hospital there are located large numbers of nearly every class of chronic disease ready for observation and comparison, the length of whose stay in hospital is often only determined by death. Hence clinical observations can frequently be supplemented by post-mortem examinations.

I make these introductory remarks to show what splendid fields for medical research our workhouse hospitals are, and what a pity it is that they are not more utilised like that great workhouse hospital the Salpêtrière at Paris.

During the years 1879, 1880, 1881, my attention was attracted by the large numbers of cases of displacement of the uterus that were found in the gynecological wards of the Liverpool Workhouse. Prolapsus uteri was most common, but there were also many cases of retroflexion and

of retroversion, and a few cases of anteflexion and anteversion. All these patients had been under treatment for years. Pessaries were useless in the most of these, owing either to the exaggerated form of the displacement or to the irritation of the mind or body produced by their presence. When relief seemed to be obtained by the use of a pessary, the relief was almost certain to be of short duration, and it would mostly happen that the patient returned to hospital in a few days with the pessary in her pocket or nowhere to be found. The uterine complaint was a grand excuse to secure exemption from work and admission to hospital.

I felt that the *desideratum* in such cases was an operation that would fix the womb in position, so that it could not be voluntarily disarranged by the patient, and that at the same time would allow all the natural functions of the body to be carried on without the necessity for *any* exercise of self denial on the part of the patient.

Before I thought of this new method I performed the only operation hitherto described for prolapse of the uterus, in which the vaginal canal is contracted and the perineum fortified by means of plastic procedures, the modifications of which are as numerous as the operators themselves.

Although these operations do good in a certain

number of cases, their success depends on the absence of all dilating causes. The external dilating causes *can* be abstained from but generally *are not*, whilst the internal causes are always at work. Hence in the very worst cases, where operation is most necessary, the result is the least satisfactory. I have performed several operations by these methods and only in one case was I quite successful, after the lapse of three months. In that case I had to modify the operative methods of preceding operators in a radical and useful way, but as since that time I have devised a better method, applicable to all cases, I will not refer to the case further.

I also thought of stitching the uterus to different parts of the pelvis, but experimental operations on the dead subject showed me that serious objections to all such proceedings existed.

Nearly five years ago I thought of the round ligaments as a means of replacing the uterus, but my impression of their possible utility was so small that I never took the trouble to examine them until June or July, 1881. Up to that time I believed them to be faint bands that merely served as landmarks in developmental physiology; attenuated ghosts of tissue out of which certain structures were developed in the male.

In June or July, 1881, I obtained the body of

an old woman for post-mortem examination, and in her I was astonished to find how thick and strong the ligaments were.

For some months after that I examined all the round ligaments I possibly could, and on December 14th, 1881, I successfully operated on a case of prolapsus uteri by pulling up and shortening these ligaments. Since that time I have operated on twenty-two cases, and as more than two years have elapsed and many other surgeons have performed the operation and approved of it, I consider the experience sufficient to justify me in placing it before the profession in a more elaborate form than the fugitive papers which have hitherto appeared in the different journals.

Anatomy and Physiology of the Round Ligaments and their Relation to Uterine Displacement

The round ligaments are "attached to the upper angles of the uterus one on either side immediately in front of the Fallopian tube. From this point each ligament proceeds upwards and forwards, to gain the internal inguinal ring; and after having passed, like the spermatic cord in the male, through the inguinal canal, reaches the fore part of the pubic symphysis, where its fibres expand and become united with the sub-

stance of the mons veneris. Besides areolar tissue and vessels, the round ligaments contain plain muscular fibres like those of the uterus, from which, indeed, they are prolonged" (Quain).

With the triple insertion of the external extremities of the round ligaments we need not here trouble ourselves, as the ligaments must be grasped in the canal and never by the terminal fasciculi.

I have now examined these ligaments in a great number of bodies, and I have never yet found them insufficient for the purposes of operation. When pulled out, the part that will have to bear the strain always varies from the size of a crow quill to that of a goose quill. The terminal part of the ligaments which we have first to meddle with is rather delicate and very liable to be destroyed by inexperienced operators, but when once the ligaments have been pulled out no fear need be entertained as to their being unable to support the strain required of them. In ordinary healthy individuals the round ligaments lie so loosely behind the peritoneum that that structure is scarcely disturbed by pulling the ligaments out. Where pelvic cellulitis has taken place and the adhesions have affected the round ligaments, these structures fail to run, and not only do the round ligaments fail to run, but they

are found to be atrophied and brittle, probably because the constrictive influence of the cellulitis has produced their atrophy through diminution of their vascular supply. The surgeon can therefore at once tell by the appearance of the ligaments whether it is possible to utilise them for the replacement of the uterus. If he persists in pulling on the slender, atrophied ligaments, they will break in the canal and thus prevent any mischief that might be otherwise done through rupture of the adherent peritoneum. When the ligaments are well pulled out, as is necessary for prolapse, the peritoneum also appears in the wound, and it can be utilised to strengthen the ligaments and so to keep the uterus more securely in position. No danger need be anticipated from thus interfering with it.

It is easy to demonstrate, both on the living and on the dead subject, that by means of the round ligaments it is possible to replace a retroflexed, retroverted, or prolapsed uterus, and that these ligaments are strong enough to be of use in *temporarily* maintaining the uterus in its original position.

But that the cure will be *permanent* surgeons are slow to believe, because they think that the ligaments will ultimately yield to the *weight* of the uterus. If the uterus is weighted by a large

fibroid or so acted on by any other agency, that the uterus is continually dragged backwards, my operation will be useless. But in an ordinary sized uterus the success of the operation depends on the fact that by it the round ligaments really cease to bear the weight of the womb as they have had to do in the displaced position, because the uterus ceases to be exposed to the forces that have produced, perpetuated, or aggravated the prolapsed or the backward displacement. The uterus normally occupies a position in the pelvis almost at right angles to the axis of the vagina. The cervix is supported and embraced by ligaments which secure the position of that part very effectually. Above the cervix towers the top-heavy uterus, retained insecurely in a position of unstable equilibrium by the loose folds of the broad ligaments, and still less effectually by the round ligaments.

In the dead subject, indeed, the round ligaments seem to have no influence in the maintenance of the normal position of the uterus.

Those who criticise this operation must remember that an empty pelvis, *such as is seen during a post-mortem examination,* is never a natural condition. Besides the support of the ligament, the uterus has the bladder and pubes below the rectum behind, and the small intestines in front

and above. It floats as it were in the midst of structures of a specific gravity not much less than itself.

Under ordinary circumstances the contents of the pelvis are quiescent, and there is no disposition for uterine displacement to occur. The pelvis is full of organs and there is no tendency for the womb to fall since there is no place that is not occupied, and therefore no place for it to fall into.

During defecation and urination, and under any circumstances that cause similar straining, the quiescent condition of the pelvic viscera is disturbed by a current of force tending to drive these organs towards the perineum. The uterus in its natural position is, to a great extent, outside and below the influence of the current, and in all probability the general contraction of voluntary and involuntary muscles that takes place at such a time is accompanied by the contraction of the muscular fibres of the round ligaments, by which the uterus is drawn forwards and downwards and so removed still further forwards from the influence of the strain. At any rate, it is only on rare occasions that the strain tends to protrude or to dislocate the uterus, and *it is only on such occasions* that the "check" action of the round ligaments comes into play and prevents

dislocation. Under such circumstances the small intestines rapidly fill up the void into which the uterus was almost precipitated, and the strain upon the round ligaments is removed, the uterus being thus really forced against the bladder and the pubic bones instead of towards the outlet.

A large ship is often moored in calm waters by a small rope which would break by the tension of the thousandth part of the weight of the vessel, and which would stretch or snap were the ship constantly exposed to a strong current. The cable is able to resist a temporary strain, and the ship again swings into position.

In prolapse and backward displacement the uterus has become *accidentally* displaced either by changes in itself, in the perineum, or in the nature and amount of the intra-pelvic contents. The womb has sunk to the bottom of the pelvis without any restraint from the round ligaments, just as a loose mooring rope would allow the ship to sink that while the ship was afloat would restrain it within certain limits. What idea would more naturally occur to a Liverpool medical man than that of pulling the uterus up again by its loose *mooring ropes, the round ligaments*, and of keeping the uterus out of the current through shortening and fastening of these ligaments ?

The uterus never hangs suspended in the pelvis by the round ligaments as a man hangs suspended from the ceiling by his two arms. It is always supported by the adjacent tissues and consequently the strain on the ligaments is scarcely ever such as to bring about their stretching. In other words, the round ligaments are rarely of any use in a healthy person, but we can make them of use in cases of uterine displacement.

These are the theoretical considerations that render probable the permanent effects of the operation. The practical proofs of their permanence will be found in the list of cases. Perhaps sufficient time has not yet elapsed to afford incontrovertible evidence of the stability of the cure. My theory and practice have however hitherto agreed so well together, that I am satisfied in my own mind of the sufficiency of the operation in proper cases.

CHAPTER II

MODE OF PERFORMANCE OF THE OPERATION AND THE AFTER TREATMENT OF THE PATIENT — CASES SUITABLE FOR OPERATION

The patient should have her bowels and bladder emptied, and be put under chloroform or ether. The pubes are shaved on each side from the spine outwards. The pubic spine is felt with the fingers and an incision made upwards and outwards from that point, from one to two inches in length, in the direction of the inguinal canal.

The greater or less length of the incision depends on the amount of fat that covers the abdominal parietes. In thin subjects and by experience in the operation the length of the incision may be much lessened. By subsequent incisions the depth of the wound is increased until the tendon of the external oblique muscle is reached.

The external abdominal ring is now to be

looked for, and if not at once seen will be easily found by searching for the oblique fibres crossing it, and for a small morsel of fatty tissue issuing from its inner end. In some cases the external ring is so well concealed that inexperienced operators have some difficulty in finding it. The pubic spine, the oblique fibres that cross the external abdominal ring, and the fatty protrusion at its inner end, are the landmarks that will readily guide the operator who has a fairly practical knowledge of the anatomy of that region. In the first incision a small artery (the superior external pudic) is sometimes cut across. It is the only vessel in danger. As a general rule the operation is bloodless.

The oblique fibres crossing the external abdominal ring should next be cut across in the direction of the inguinal canal. A reddish tissue now bulges out, so characteristic in appearance as to be easily recognised, mixed with a greater or less quantity of fat. This is the end of the ligament, *as a ligament,* just before it spreads out in the mons veneris. An aneurism-needle is now passed under *all* this fatty mass so as to raise it out of the canal and allow it to be grasped by the fingers (not by the forceps). We have now reached the most delicate part of the

operation. The ligament should be gently pulled out, and all bands connecting it to the pillars of the external abdominal ring or to the neighbouring structures should be cut through. The accompanying nerve should also be cut across. In tearing the ligaments from their inguinal connections some risk is run of breaking them or of tearing them away altogether, unless much care, patience, and judgment be exercised. As soon as these adhesions are overcome no further trouble is experienced. The ligaments pull out with the greatest ease, and appear as white, strong, substantial cords.

Having ascertained that both ligaments will run, the uterus should be placed in the desired position by the *sound*, and maintained in that position by an assistant, whose finger also touches the uterine cervix. The ligaments are now pulled out until they are felt to control the position of the uterus.

The finger in the vagina or rectum will not always do instead of the sound, as in one case the owner of a most experienced finger told me that he still felt the fundus uteri per rectum after I had pulled the ligaments as far out as I thought necessary. I passed the sound and demonstrated to him that the uterus was really in position. Besides, it is obviously much better to place the

uterus in position with the sound than to drag it into position by the ligament.

A few words are necessary as regards the position in which the uterus should be placed by the operation.

In *backward displacement* I have always endeavoured as far as possible to put the uterus into its normal position. In *prolapse I generally pull out the ligaments as far* as they will come.

An operation for a backward displacement is generally undertaken to cure some reflex phenomena which are supposed to depend on it.

These reflex phenomena may have no connection with the malposition, and consequently may not cure the symptoms.

If, however, any malposition exist after the operation, and the neuralgic or hysterical symptoms continue, there is a likelihood that both specialists and patients may still look upon the malposition as the cause of the symptoms, and will still continue to treat the uterus as the *fons et origo mali.*

The object of the operation in a neuralgic or hysterical case is either to put the uterus into position and thereby *cure* the disease, or to put the uterus into position and thereby show that the *symptoms do not depend on the uterine dis-*

placement, so that the attention of both the doctor and patient may be turned in another direction in the search for the cause and cure of the symptoms. Hence the double necessity of putting the uterus as accurately as possible in position. I hope at an early date to be able to show why a nervous disease set up by chronic uterine irritation is not always cured by the cure of the uterine disease.

In prolapse the troubles are mechanical, and the uterus has only to be kept in the pelvis. In cases of this disease occurring in women during the child-bearing period, I would put the uterus as nearly as possible into the natural position. In elderly cases, in whom child-bearing is an improbable event, I would recommend the uterus to be pulled up well above the pubes, so as to evade altogether the pressure of the abdominal contents acting in the direction of the pelvic outlet.

There is never any use in trying to pull the ligaments further out than they will readily come. In such endeavours one ligament would be pulling against the other, and very likely one or both would fail, if fixed in a state of tension one with the other.

When the ligaments are pulled out to the required extent, they are held by an assistant

while the operator fixes them to the pillars of the external ring and to the edges of the wound in the following manner :

A needle threaded with strong silver wire is passed through the skin on one side of the wound, through the most adjacent pillars of the external abdominal ring, and through the deepest part of the round ligament, through the opposite pillars of the ring, and finally through the skin on the opposite side of the wound. Another needle is passed through the same structures internal to the first one, and on rare occasions a third may be used. The depths of the wound are sponged, and the silver wire loosely fastened in a knot, bringing the edges of the wound together without constricting any of the tissues. The opposite side is then treated in the same way. The "slack" of the ligaments, if not severely handled, may be packed in the inner end of the wound, or may be cut off if it looks much frayed, and in either case the rest of the wound is closed with catgut sutures passing through the slack of the ligaments. I am inclined to agree with Dr Imlach that silver wire is unnecessary. Catgut is strong enough, and the wounds seem to heal more readily when the skin is not involved in the deep sutures.

In hospital I use the gauze-dressing and the

spray during operation, but this is unnecessary even there, and the operation can be performed under any kind of *surgical* treatment or with all varieties of surgical dressing.

I now place a suitable Hodge pessary in the vagina and withdraw the sound. In the last three cases I also placed an india-rubber inflating pessary in the rectum. This could not be borne in one of the cases, in the other two it was of material benefit in keeping the womb forwards during the healing of the wound. I would not, however, recommend it to be often tried. The patient's knees are flexed over a pillow, as after operation for hernia, and a morphia and atropine injection if necessary is given to relieve pain.

The subsequent dressings depend on circumstances, and may be few or many according to the amount of discharge. The wounds rarely heal by the first intention, owing to the strain on the stretched ligaments and the restlessness of the patients.

The prone position would be indicated after this operation, but the wounds are in front, and I have found it hitherto impossible to get the patients to adopt that position or to maintain it. I sometimes get them to lie well over on their side instead of on their face, and this relaxes

the strain a good deal in some cases; in others it caused a pain on one side, so that the dorsal decubitus is the best.

When the wounds are healed I allow the patient to move about with the pessary *in sitû*. In the course of a week or two I remove the instrument and the patient passes entirely from under control.

The directions above given are the outcome of my experience. A study of my cases will show several modifications in the details of operation of a tentative character, which I no longer recommend.

In some aggravated cases of retroflexion a stem pessary is necessary in addition to a Hodge, not only during the process of healing of the wounds but for some time after. I have only found two cases of this kind out of all my operations, but I have come across several uteri in making post-mortem examinations where the uterus and the round ligaments had the following relations to each other, and where a stem pessary would have been indicated to prevent failure.

In ordinary cases the round ligaments are attached close to the origin of the Fallopian tube, and on a level with the limits of the fundus uteri. Consequently, when the ligaments pull upon the uterus the whole fundus is raised verti-

cally. In cases of prolonged retroflexion the relative position of the different parts of the uterus is altered through the abnormal development of the fundus that occasionally takes place. The diagrams shown below illustrate what I mean.

Fig. 1.

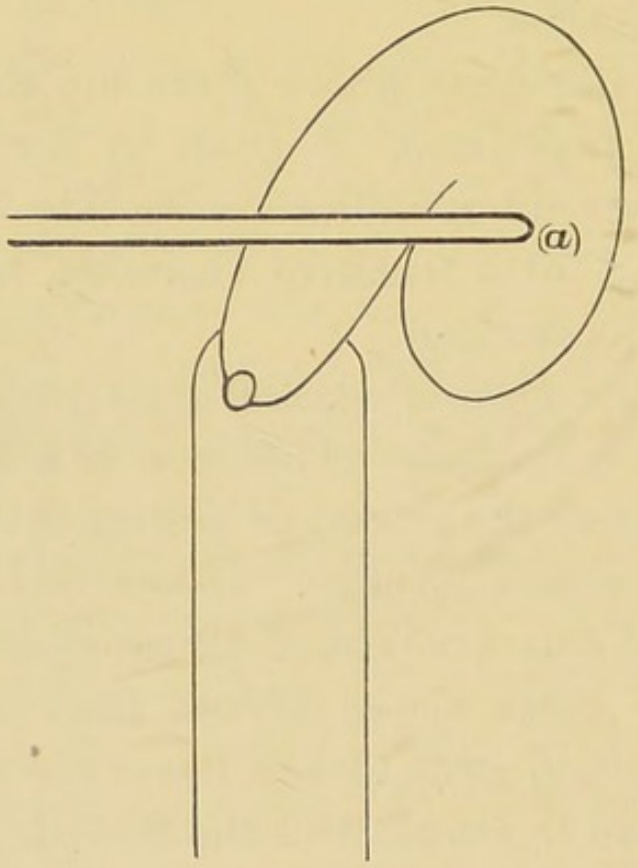

Diagram showing a chronic retroflexion of the uterus and the position of the round ligaments.

In Fig. 1 the retroflexed and retroverted position of the uterus is shown, and the attachment of the round ligaments at *a*, a considerable distance from the fundus. In operating on the

first case of this kind, the sound was as usual handed to an assistant, and the ligaments pulled upon (in Case 15). On examining the uterus with the finger, I found the condition of affairs

Fig. 2.

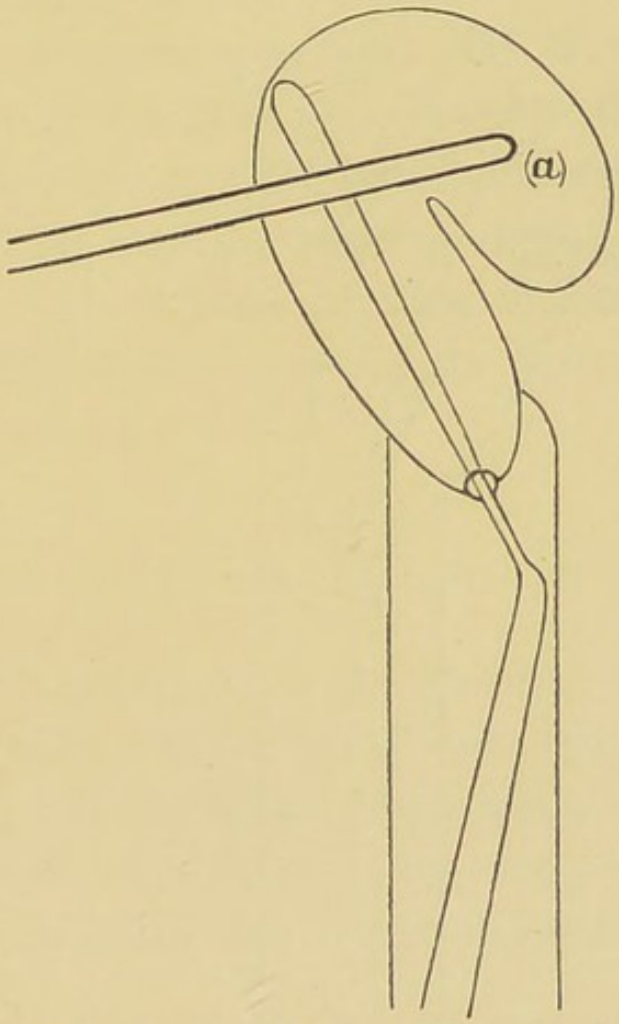

Diagram showing the effect of pulling on the ligaments alone without previously straightening the uterus completely by the sound.

as indicated in the diagram 2. The sound had slipped, and the fundus had recoiled like a watch-spring. This recoil the round ligaments from

their abnormal position were unable to prevent. A galvanic stem pessary straightened the uterus completely, as in Fig. 3, and the round ligaments were then able to maintain the uterus in position.

FIG. 3.

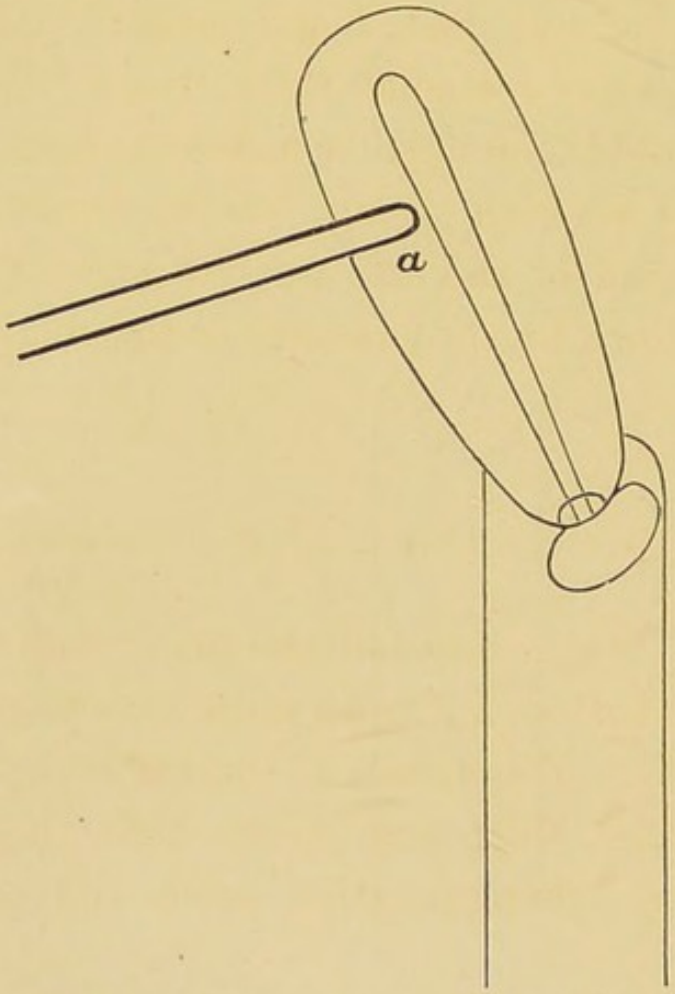

Diagram showing uterus straightened by a stem pessary.

In the first case time was lost, because the condition was not appreciated for two days, and then the round ligaments were dragged upon in replacing the uterus and in applying the pessary.

The adhesion of the ligaments was disturbed, so that the operation was partially a failure. In future cases the "galvanic" pessary and the Hodge should be introduced at the time of the operation, so that no strain would be put upon the ligaments during the healing process. Case 16 was a similar one, and had I not understood the complications and remedied them, the retro-flexed fundus would soon have been beaten down into its original position, lying, as the fundus did, in the stream of the intra-pelvic current, and weighted down by the pressure of the small intestines.

Cases in which the Operation is Contra-indicated

Old persons, on the verge of the grave, laden with fat, small-chested, and with large abdomen, of broken-down, degenerated constitutions, should not have this, any more that they should have any other operation performed on them.

Cases in which the uterus is so adherent that it cannot be replaced by the sound are not likely to be benefited by this operation.

In some cases, although the uterus may be capable of being replaced by the sound, the round ligaments cannot be drawn out owing to

the action of pelvic cellulitis. Such an occurrence cannot be predicted before operation, although it may be suspected from a previous history of cellulitis. As a general rule in these cases, one ligament will be found substantial and of itself capable of holding the uterus in position, as happened in Dr Lediard's cases and in one of my own.

During the child-bearing period I have hitherto had considerable doubt as to the advisability of operating unless the symptoms were very severe and apparently quite incapable of relief by a pessary.

The symptoms were certainly severe enough in the case of Mrs B—, the epileptic, to warrant almost any operation that promised a cure. From her case, I think we may conclude that pregnancy and parturition are not necessarily interfered with by this operation, nor do these conditions necessarily destroy the effects of the operation. The restoration of fertility in this case was probably an effect of the operation.

The operation may therefore be performed in all cases in which the *state of the womb* and of the *patient* allow it to be performed. But no one would think it advisable to operate on a uterine displacement accidentally discovered, which gave rise to no symptoms whatever.

Where the pessary gave complete relief to the symptoms and did not produce any mental worry, neither surgeon nor patient would be likely to entertain the idea of an operation. Where the relief from the use of a pessary was only partial, where the patient's life was embittered by the thought of having always to wear an instrument, although the relief experienced from its use *was* complete, or where the pessaries were relief-giving, but had to be frequently changed through local irritation, an operation is, I think, called for. It must be remembered that pessaries are life-long appliances, and we can scarcely ever give patients hope that by their use the uterine malposition may be *cured* and the instrument withdrawn. For instance, according to the experience of Dr Lohler, of Berlin, backward displacements of the uterus form about one fifth of the cases which come under the attention of the gynæcologist. Out of 240 of these cases he could only point to four in which a cure by pessaries could be said to have taken place. Dr Mundé, of New York, stated before the International Medical Congress in London, that only eight out of 403 cases of backward displacement were permanently cured by vaginal pessaries.* In about 2 per cent. the position of the

* 'Medical Times and Gazette,' May 19th, 1883, p. 559.

uterus was permanently rectified by a pessary. In many others the symptoms subsided, and the patients became enabled to tolerate the malposition with so little inconvenience that a pessary was no longer needed. Of the remainder a certain number accepted the inevitable, paid attention to their pessaries and lived in comparative comfort dependent on their doctor.

The others rebelled against the disagreeable necessity, became nervous, hysterical, or hypochondriacal, and wandered about from doctor to doctor, or from quack to quack. These suffered much from many physicians, both in pocket and in health, until mania, hysteria, or debility made them helpless, and relegated them to the seclusion of their bedrooms or of some institution.

It is for this last class of patients that the operation was discovered, and in the case of Mrs B— (No. 5) it was perfectly successful. Mrs C— (No. 15) was a similar case, for whom the wards of an epileptic hospital were really opening at the time she came under my care. In her case the success of the operation was only partial.

In other cases the operation is one of expediency or of choice. In cases like those of Mrs B— or C— (5 and 15) it is the only remedy, and one that it is astonishing to me was not discovered long ago.

CHAPTER III

TWENTY-TWO CASES ILLUSTRATING THE RESULTS OF THE OPERATIONS PERFORMED BY THE AUTHOR

Case 1.—Elizabeth C—, æt. 38, a well-nourished woman of medium stature and relaxed pelvic organs, was admitted into the Liverpool Workhouse Hospital suffering from prolapse of the uterus to such an extent that the cervix presented outside the labia.

On October 4th, 1881, I performed the vaginal operation and narrowed the vagina to a finger's width. On December 1st the uterus did not appear externally but was pressing forcibly downwards upon the narrowed vagina. The bladder and rectum were bulging backwards and forwards, as if these organs were endeavouring to escape by the vaginal outlet. The dragging pains that the woman suffered from were unabated and the only improvement was that we did not see the uterus with the naked eye when the vulva was exposed.

On December 14th I performed my operation on the round ligaments. Two inches of the slack of each were pulled out and cut off, and the ends stitched by numerous catgut sutures to the boundaries of the wounds.

On Jan. 6th the wounds were quite healed and a

dimple in the centre of the cicatrix showed where the ligaments had formed their attachments.

The patient complained of some pain during the first two days. This was relieved by morphia injections. I examined the patient on Feb. 27th in the erect position. The uterus remains fixed in the position into which it was drawn at the time of the operation. Coughing and straining do not tend in the least to produce prolapse. The cervix merely sinks a little downwards and forwards in the direction in which a normal uterus would sink. The reason of this is that the ligaments have been made more "taut" than the normal ligaments ever are, and this increased support is necessary where the ligaments only have to be depended upon. The vaginal walls are still relaxed but not so much as at the time of operation, and it is to be expected that when the dilating wedge has been removed for some time the stretched tissues will regain some of their former resiliency if the stretching process has not already gone too far.*

The dragging pains have left her completely and the woman is quite at liberty to rejoin her husband.

I saw this patient repeatedly up till May, 1883. At that time her uterus was in position, the position of the cystocele was scarcely changed. The latter protruded in straining to a slight extent but caused the patient no serious inconvenience.

Case 2.—Bridget K—, æt. 45, was admitted to hospital on Jan. 15, 1882, with chronic prolapse of

* This expectation was not fulfilled, see "Cystocele" in Chapter iv.

the uterus and bladder from which she had suffered for many years. She was operated on on Feb. 1st, and two inches of the slack of the round ligaments pulled in. After operation the patient had an attack of bronchitis, induced by ether, upon the chronic form of the disease from which she had suffered for some time. The constant coughing increased the pain of the wounds and her temperature ran up to 101° during the first three days. The wound did not heal by the first intention but granulated. On Feb. 20th the wounds were healed and the uterus fixed in the position in which it was placed at the time of operation. On Feb. 27th the results are the same as in the preceding case, the pressure of straining does not affect the uterus, and the maintenance of the cure is certain. Feb. 20th, 1884, I operated on the patient at the beginning of the present year for the cystocele which I hoped would have shrunk up. This operation has been quite successful so far. The uterus still maintains its position.

Case 3.—Ellen T—, æt. 28, has had a prolapse of the uterus and anterior vaginal wall for several years. She has been in and out of the hospital for the last year and a half and has been treated without permanent effect with various kinds of pessaries. I had contracted the anterior vaginal wall without much benefit, and was about to operate on the posterior vaginal wall and perineum, when the idea of the round ligaments presented itself to me. On Jan. 4th, 1882, I shortened her ligaments. Her temperature never rose above 100°, and she only complained of some pain for three days.

I examined her in the erect position on Feb. 27th, and found the uterus in position and affected by coughing and straining in the same way as the other two cases. This patient is an epileptic and is at present in the hospital for the treatment of that disease.

Aug. 1st, 1883.—The patient afterwards went to an epileptic home in the Dingle, Liverpool. Repeated examinations showed that the womb remained in position. She finally went to Ireland, and I have a letter from her dated July, 1883, in which she says that she feels perfectly well and expresses her gratitude for all that has been done for her.

Case 4.—Elizabeth D—, æt. 30, was admitted in September 17th, 1881, with retroflexion of the uterus of a most marked kind. Pessaries failed to relieve her, and the menstrual period was one of great trouble to her, and was marked by the occurrence of epileptic fits. The operation was performed as before by pulling out the round ligaments. In this case I failed to catch up one ligament properly, and by only one was the uterus brought into position. There was scarcely any rise of temperature and the wound had healed soundly by January 13th.

I examined this woman on January 30th. The retroflexion is completely cured and the sound passes in the normal direction. The epileptic seizures were unaffected by the operation although the distress experienced at the menstrual periods is completely removed.

On November 1st, 1883, Dr Irvine, under whose charge the patient now is, informed me that the

uterus is in good position and the menstrual functions do not seem to trouble her. She is still as subject as ever to epilepsy.

Case 5.—Mary S. B—, æt. 24, a married epileptic, whose husband and only child are alive and well, came into the Liverpool Workhouse Hospital on November 27th, 1881, with the object of getting rid of her fits, and of getting a severe burn treated which she had received in her last fit. About twelve months ago her menses stopped and soon after her fits began. She had a good deal of medicine from her medical attendant but no benefit seemed to have resulted from her taking it. Sometimes she had as many as four or five fits in a day, some of which were slight and some more severe and prolonged. Previous to December 20th her fits were not recorded. On that date I saw her in a severe one, and I told the nurse to obtain a record of her previous history and to report daily the number of fits. During the next four days she had twelve fits, and altogether from December 20th to January 18th she had thirty-one fits. On the last mentioned date the right vertebral artery was tied. The wound healed without anything worthy of notice occurring, but the fits still continued though in diminished number and severity; fourteen occurred from January 18th to February 2nd. On that date the left vertebral artery was also tied. This artery was of large size whilst the vessel tied previously was small, which may account for the slight effect of ligature on the previous occasion. On February 8th she had a very slight fit and on the 12th she had a severe one, followed by two minor ones on the same

day. During the severe one she hurt her right bursal patella which became acutely inflamed and suppurated. On February 18th she had a slight fit and on the 20th another. From that up to March 16th she had seven fits. Her menstruation seems regular and comfortable.

As the effect of ligature of the vertebrals was not so effectual as I wished, and as there was evidently some external irritation exciting the nervous system to increased action, I determined to find out what this was. The connection of the onset of the fits with menstrual derangement caused me to examine the uterine organs. She had not complained of any uterine or ovarian symptoms, yet an examination discovered a distinct retroversion of the uterus. The instrumental treatment by pessaries would probably have increased the irritation and could not have been tolerated. Fortunately my operation for retroversion by shortening the round ligaments was especially applicable to this case. The operation was performed on March 16th and was perfectly successful in bringing the uterus into the normal position and keeping it there. No inconvenience was suffered during the healing of the wound, and the temperature of the patient never rose above 98·4°. On April 10th she was discharged, having had five slight fits since the operation. She had improved physically so much and her state of mind was also so much improved that I had no hesitation in telling her that her fits would probably diminish gradually in frequency. I saw her on June 20th, when she called to tell me that she felt perfectly well and had had no fits since she left

the hospital. The uterus was in the position in which I placed it. She promised to come to see me every month for some time.

I have seen this patient at intervals since she has had no fits and her uterus retains its position. Not only so but the last time she came to see me she was between three and four months pregnant. No inconvenience had up to this time been felt, and the patient was very proud of the double effect of her stay in hospital, viz. the cure of her fits and the restoration of her child-bearing powers.

August 2nd, 1883.—The patient went to the full time without any inconvenience, and was delivered by a midwife of a healthy child during the winter of 1883, without any complication. I was able to show her to several members of the British Medical Association in August, 1883, and to inform them that her fits had left her since her discharge from hospital. Mr. Lawson Tait and several others verified my statement that the uterus was in its normal position.

Case 6.—Ann B—, a charwoman, was admitted to hospital on April 25th, 1882, with prolapse of uterus, the os presenting at the vulva. She has had four children all of whom died young. The prolapse dated from her last confinement, about two years since, and caused her great pain in the back, and so much dragging and pelvic uneasiness that her life was a burden to her. She is a strong, powerful woman, with a large vagina. She at once accepted the alternative of an operation that promised a radical cure to the use of pessaries. The idea of using the latter she

could not tolerate, and that mode of treatment in her case would not have been persistently carried out, or would probably have failed owing to her large vagina, if carried out.

On May 24th I operated by pulling up the round ligaments and stitching up the slack thus made in the wound. This is the first case in which I did not cut the slack off, and I do not think it is necessary to do so if it is not too much handled.

25th.—No sickness after the chloroform used as an anæsthetic. Temperature to day 98·8°, evening temp. 99·4°. Patient remarkably free from pain.

26th.—Wounds dressed under the spray looking well. Morning temp. 98·2°, evening temp. 100°.

27th.—Morning temp. 99°, evening temp. 99·2°.

28th.—Wounds dressed, a little discharge; temperature normal.

30th.—Wounds dressed.

June 2nd.—Wounds healed in two thirds of their extent, remaining inner third granulating. Spray discontinued and carbolised lint used as dressing.

July 7th.—Patient quite well and allowed to get up.

30th.—Discharged to town. She promised to show herself once a month.

Circumstances, however, proved too strong for her. She was admitted on August 4th suffering from the effects of drink. The world was evidently too full of temptation so she determined for a time to renounce it and live the secluded life of a scourer in the wards. Owing to this resolution I have been able to examine her frequently, and I had the privilege of showing her to Dr Emmett, of New York, and Dr Sutton, of

Philadelphia, on September 9th, who both pronounced the result to be perfect. This patient was examined at the Liverpool Medical Institute on November 23rd, 1882, six months after operation, and the uterus found in position. She was under observation for some time longer and was last seen in the beginning of 1883. I have not the exact date. The uterus was still well in position.

Case 7.—Minnie H—, æt. 19, was admitted to the Lock Wards of the Liverpool Workhouse on June 23rd, 1882, with a discharge from the uterus and a profound retroversion combined with a certain amount of retroflexion. Re-position of the displaced uterus was tried with rest in the prone position without any permanent effect. Drs Emmett and Sutton, who were present at the operation, examined her previously and both declared that it was a well-marked case. The round ligaments were drawn out, but it was with some difficulty that they could be isolated, so great was the quantity of fat surrounding them. When the ligaments were pulled out Dr Emmett, who was testing the effect of the round ligaments with his finger, pointed out to me that the uterus had a lateral tilt. This I rectified by slackening one side and pulling up the opposite. The sound then passed in the normal direction. The ligaments were then stitched in the wounds by means of *silk* sutures. These sutures were passed through the skin and the pillars of the external abdominal ring and the ligaments. A large well-purified sponge was laid in the wound and over it antiseptic gauze.

After operation she complained a good deal of

pain. This was relieved by five minims of morphia and atropine injection; evening temp. 99·4°.

September 10th.—Temperature in the morning 99·2°, and in the evening 100°.

11th.—Morning temp. 99·1°, evening temp. 101·8°.

12th.—Morning temp. 99°, evening temp. 99·2°.

13th.—Morning temp. 99°, evening temp. 100°.

14th.—Morning temp. 101·2°, evening temp. 100°.

For three more evenings it rose to 100° and after that it was normal. The wounds healed more slowly than in previous cases. This I think was owing to the use of silk sutures instead of catgut.

This patient was shown by me at the Liverpool Medical Institute on November 23rd, when the womb was found to be in position. She went to town afterwards. I have tried to trace her since but have failed to find her.

Case 8.—Anne V—, æt. 32, suffers from retroflexion, complicated by adhesions, the result of confinement five years ago. She has had a considerable amount of discharge lately and pessaries were of no use to her as they could not be worn. The operation was performed on September 2nd when Dr Macfie Campbell was present and confirmed the diagnosis. The left ligament was easily pulled up, but the right one resisted all attempts to make it move. I cut through the aponeurosis and tendon of the external oblique, thereby uncovering part of the inguinal canal, with the intention of getting a better hold of the ligament, but all in vain, the ligament broke rather than move from its pelvic adhesions. I therefore pulled up the left ligament and fastened it in

position. The patient made a rapid recovery from the effects of the operation. At the end of three weeks she was well, and all the pelvic symptoms had subsided. On making an examination, I was surprised to find the womb in good position, much better than just after the operation was completed, as the position of the wound then, though improved, was not at all satisfactory. The adhesions must have gradually yielded to the ligament in this case and so produced very unexpected results.

I showed this patient to Dr Graily Hewitt and to Mr Lawson Tait at the meeting of the British Medical Association, and they pronounced the womb to be in a very good position. Dr Wallace and some other gentlemen did not think its position to be quite natural, and that it was still somewhat retroverted. Such a difference of opinion in a case supposed by me at the time of operation to be a failure, is the best guarantee of the success of the operation. She has not felt any of her old symptoms of pain in the left side for nearly twelve months, that is since the operation.

My next two patients were private ones.

Case 9.—Mrs C—, a nervous patient, mother of several children, had for several years suffered from retroflexion of the uterus, and from periodical attacks of neuralgia that were ascribed to it. All sorts of pessaries had been tried without success. She came into Dr Irvine's hands latterly, and he advised her to have the operation performed.

The operation was performed satisfactorily, but I

pulled the ligaments well out, and I now think that perhaps I pulled them out a little too far. The patient was most restless and performed some ridiculous things during the treatment. Her first menstruation after operation was easy and free from neuralgia. One night Dr Irvine was called to see her and gave her some medicine to lull the nervous state into which she had brought herself. After his departure she thought he had given her chloroform, and jumping out of bed, rushed down stairs. This is an example of the difficulty of treating such a patient, and fully accounts for slight anteversion and prolapse that now exists in September, 1883. It is impossible to say if her neuralgic symptoms, which are as bad as ever, have any relation to her uterine symptoms, and I would warn surgeons in operating on such a case to have her fully under control and well watched.

The case is an operative success as far as the retroversion is concerned, but a failure in that slight anteversion has resulted. As a therapeutic remedy for the neuralgia and hysteria it has entirely failed.

Case 10.—Mrs L—, æt. 26, a sterile, married woman, consulted me in April, 1882, about pains in the back, dyspeptic symptoms, scanty menstruation, and excessive discomfort at the menstrual period. Examination revealed a small uterus completely retroverted. I performed the operation successfully in every respect, except that there is at the present time, February 20th, 1884, two years after the operation, no evidence of fertility.

The uterus retains its normal position, the men-

strual flow is still small, but the other symptoms have all disappeared, and she is now in excellent health and spirits. I am inclined to think that the prolonged retroversion of many years' duration has dwarfed the internal generative organs, or the sterility may depend on other causes.

Drs Irvine and Stuart ably assisted me in the performance of the operation.

Case 11.—Mrs W—, æt. 40, married, and the mother of eight children. Four and a half years ago she experienced peculiar dragging pains about the small of her back, and she imagined that something came partially down. The dragging pains went on for six months, when one evening as she was returning home from her work as a charwoman, the uterus fell down "its whole length." It was very troublesome up to the time of her admission to hospital, and sometimes produced severe pains in the back. I pulled up the round ligaments May 2nd, 1883. The convalescence from the time of the operation went on uninterruptedly, the highest temperature being 99°. On July 13th I examined her and found the womb in position and the patient free from any pains about the back. She has some pain in the knees due to chronic rheumatic arthritis.

I examined her on October 29th, 1883, and found the uterus well up in the pelvis and slightly anteverted in position. Coughing and straining in the erect position had no effect in producing any prolapse perceptible to the finger.

Case 12.—Catherine D—, æt. 24, unfortunate, was admitted to hospital on February 9th, 1883, suffering

from retroflexion and retroversion of the uterus. She had suffered for over a year from dysmenorrhœa and endometritis.

As the discharge was not apparently affected by various remedies or by pessaries I pulled up her round ligaments on March 21st, 1883.

She had a little pain on the right side after operation and felt rather thirsty. She was fed on soda-water and milk. Her temperature in the evening was 99° and about the same in the morning.

On the 23rd the wounds were dressed. They looked well. The patient did not feel any pain and the temperature was normal. On April 2nd the antiseptic dressings were stopped and carbolised lint laid on the wounds. On April 7th the wounds were quite healed. On May 29th she was discharged to town strong and healthy with the uterus in position.

In this case, as the uterus was small and light, no pessary was introduced during the healing of the wounds, but one was applied when the patient first got up, for fear of any strain being put on the recent adhesions of the ligaments. She has not been heard of since.

Case 13.—Annie H—, æt. 17, an unfortunate, who was admitted to the Lock Wards of the Liverpool Workhouse in December, 1882. She suffered from retroversion of the uterus, leucorrhœa, and incontinence of urine. She was of a very nervous, despondent, hysterical disposition, and general treatment did not produce any effect.

I operated on her round ligaments January 3rd, 1883. She was sick after operation and vomited a

great deal. In the evening her temperature rose to 100°. She was treated with a morphia and atropine injection, and a pessary placed *in sitû* next day to relieve any strain.

On January 4th the pains still continued ; morning temperature 100·4°, evening temperature 100·8°.

On January 5th the morning and evening temperatures were 99° and 99·6° respectively.

From this date the history of the case was uneventful. At the end of a month she was sent to a home. She stayed there some weeks, at the end of which time she was sent to Chester in good health. The uterus was not examined since leaving the Liverpool Workhouse, so that no direct evidence exists of the permanence of the cure. I have no doubt, however, of its permanence, as the uterus was small and the ligaments strong and soundly united to the wound before she left us.

Case 14.—Mary B—, æt. 26, married, has had three children to two husbands, and has suffered much pain since her last confinement two years ago. An examination showed a prolapsed and retroverted uterus. She was admitted to hospital December 12th, 1882. On the next day I pulled up her round ligaments as she was in a hurry to get well and came into hospital only for the purpose of being operated on. The highest temperature after operation was 100·6°. On January 1st the wounds were healed and the uterus in position. She was then discharged and I have not seen or heard of her since.

Case 15.—Mrs C—, æt. 35, has suffered for nine or ten years from uterine symptoms ever since the

birth of her last child. She has had all sorts of appliances and treatment, and instead of getting better has gradually become worse and worse. Lately she has become subject to "fainting fits" in which she falls to the ground perfectly unconscious. She gets up, however, immediately, and goes on with whatever she was previously engaged upon. Besides, she has attacks of mental alienation in which she has such strong impulses to do dreadful things that she dare not stay in the house alone.

I examined the patient with her ordinary medical attendant, and found retroversion and retroflexion as represented in the woodcut on p. 20. The uterus could be put into position with the sound, but immediately recoiled to its original position when the sound was withdrawn.

On July 4th I performed my operation on the round ligaments, and after I had pulled them up I found the uterus in the position represented in Fig. 2, p. 21. I passed the sound again, straightened the uterus, and pulled the ligaments a little further out. The uterus now seemed to stay straight. Next day it was still in a satisfactory position, but on the third day some recoil had taken place, and on the fourth day the position represented by Fig. 2 was again assumed. With some difficulty I straightened the uterus with the sound and passed a "galvanic stem pessary." This maintained its position fairly well, but the ligaments had evidently yielded through the straining employed in passing the instrument in. The wounds healed satisfactorily by granulation, and at the end of the treatment the uterus is in a position

that is a slight improvement on Fig. 2. She has lost all the uterine symptoms, such as pain in the back and feelings of bearing down. The head symptoms can scarcely be said to be improved, and I am inclined to think that the epilepsy from which she now suffers would not be cured by removal of all the uterine organs, but will require the treatment suitable for essential epilepsy. In the course of a year from the date of the operation, further treatment should be tried if the operation then have failed to cure the head symptoms. It has already cured the pelvic symptoms, although the position of the uterus is not normal.

My next case profited from the lessons taught by this one. A stem pessary introduced at the close of the operation, and kept in by a Hodge, produced a complete cure of the malposition.

Case 16.—Sarah D—, æt. 28, single, was admitted to the Lock Wards of the Liverpool Workhouse on July 10th, 1883, with what was supposed to be a gonorrhœa, but was really a leucorrhœal discharge. She had suffered a great deal for many months from endometritis and ovaritis, and on examination the uterus was found to be fully retroflexed and prolapsed.

Different methods of treatment, including re-position and pessaries, were tried without any permanent effect. The womb recoiled like a straightened watch-spring when the sound was removed, and stem pessaries were either extruded or caused the patient too much pain to be tolerated.

On October 10th, 1883, I pulled out the round

ligaments, both of which were substantial structures, having previously straightened the womb and inserted a galvanic stem pessary and a Hodge. Antiseptic dressing. The patient was very restless during the afternoon of the operation and felt rather thirsty. The evening temperature was 98°. Five minims of a morphia and atropine injection prescribed.

11th.—Had a very fair night. Was sick towards the morning and vomited some greenish-looking stuff. Morning temp. 98·2°, evening 99·6°.

12th.—Morning temp. 99·2°, evening temp. 100°. Some sickness still.

13th.—Morning temp. 99·2°, evening temp. 101·8°. No sickness. Slept well.

14th.—Morning temp. 99·6,° evening temp. 99·2°. A little pain in side.

15th.—Morning temp. 98°, evening temp. 98·6°. Wound dressed for the first time; boracic lint substituted and absorbent cotton wool substituted for the antiseptic dressing. To be dressed daily with this.

16th.—Morning temp. 98·6°, evening temp. 99°. Normal afterwards.

26th.—Patient up and well. Pessaries removed.

November 3rd.—Discharged to town looking well and with the uterus in position.

Case 17.—Mary R—, æt. 39, married, was admitted into the Medical Wards of the Liverpool Workhouse on July 17th, 1883. She has had four children, the three first of whom were delivered by instruments. For four years or more she has suffered from a good deal of pain in her back, which she describes as a heavy

dragging pain. She was always regular until just before admission. She was then seized with vomiting, severe pain in the back, and a profuse vaginal discharge that continued for five weeks. On admission the uterus was found to be retroverted and prolapsed, and a plug of glairy mucus issued from the os.

On August 22nd I placed the uterus in position, and fixed it there by means of the round ligament operation. Slept comfortably afterwards until 7 p.m.; she then became restless and complained of pain. These symptoms were completely relieved by a morphia and atropine injection. Temperature in the evening 99°. Catheter passed, and four ounces of urine taken away.

23rd.—Morning temp. 98·2°, evening temp. 99·4°.

24th.—Morning temp. 98·2°, evening temp. 100·2°.

25th.—Morning temp. 99·4°, evening temp. 98·6°.

26th.—Morning temp. 98·6°, evening temp. 99°. Normal afterwards.

September 7th.—Wounds quite healed.

October 27th.—Patient examined, uterus found well in position. Symptoms have disappeared, and patient in good health.

January 1st, 1884.—Patient still well, and uterus in position.

The retroflexion was not pronounced enough to require a stem pessary.

Case 18.—Ellen Shaw, æt. 20, single, prostitute, admitted to hospital from Lock on July 19th, 1883. Is very weak on account of a profuse discharge she has suffered from for a long time. She has also

suffered for several months from severe dragging pains in her back.

On September 10th I examined her and found prolapse and retroversion. She was operated on on September 12th. Morning and evening temperature for the next few days: 98°, 98·4°; 99°, 98·6°; 98°, 98°; 98·6°, 98·8°; 98·4°, 98·4°; 98°, 98·6°; 98°, 98·4°; 98°, 98°; 98°, 98·4°; 98°, 98°. Wounds healed completely.

On October 29th she was discharged to town feeling quite well, and with the uterus thoroughly in position.

Case 19.—Miss C—, a young lady, æt. 22, came under my care about May, 1883, suffering from vesical catarrh and irritable bladder. She was a musician, playing the violin, and believed that her illness arose from the occasional necessity for prolonged retention of urine incidental to her profession. She was a tall, pale, anæmic girl, whose health was evidently failing under the local disorder. I gave her soda pareira and liq. strychniæ for a time with considerable benefit. The benefit was, however, temporary, and rapidly passed away on stopping the medicine. After a time the resumption of the treatment failed to have the desired effect as rapidly or to the same extent as formerly. At the end of four months I expressed to her mother my opinion of the necessity of an examination of the pelvis to ascertain the position of the organs. The examination was made a few days after under chloroform when I found the uterus completely retroverted. I replaced the organ with the sound and passed a Hodge. A fortnight

after I was compelled to remove the Hodge through local irritation, and on its removal the uterus fell back again into position.

The uterus was normal in size and shape; its abnormal position was evidently owing to the enlarged bladder, and the recovery of the enlarged bladder was frustrated by the irritation of the neck of the uterus pressing upon the fundus vesicæ.

Neither organ could return to its normal condition owing to their altered and complicated relation to each other.

My operation was peculiarly well suited to relieve the uterus from its prostrate condition, and at the same time to modify the backward displacement of the bladder.

The proposal to operate was received with instantaneous consent by both mother and daughter, as being infinitely preferable to the continual worry of the treatment by pessaries so repugnant to the feelings of a young girl.

The operation was performed on November 28th, with the able assistance of Drs Irvine and Brannigan. The ligaments were exposed by an incision scarcely an inch in length and without the loss of more than two or three drops of blood. The ligaments were the smallest I had ever seen, but firm and strong. A small Hodge was inserted to afford support during the healing process, and pareira strychnia and soda were administered during the convalescence. The wounds healed by the first intention, but a small abscess formed alongside the wound on the left side and discharged during the second week. The patient

was allowed to get up on the twenty-first day, and was kept to the house up to January 1st to allow the bladder to recover as far as possible. The small Hodge occasioned her so little inconvenience that she was surprised when I told her about the necessity of removing what she did not think was there at all. I determined to leave it in about two months more so as to give the bladder time to completely recover.

It was removed on February 14th, when all the uterine symptoms had disappeared. The patient was rapidly becoming stronger and the uterus was in good position.

Case 20.—Mrs. W—, æt. 26, was a small and puny though healthy woman up to her marriage some six months ago. A few weeks after that time she became subject to pains in the back and over both ovaries, to dyspeptic symptoms and miserable forebodings. When I examined the patient at the beginning of 1883, I found the uterus retroverted and somewhat prolapsed, painful to the touch, and shedding a glairy discharge. The os seemed to be too small and its canal was tortuous. Over the ovaries there was also considerable tenderness. Warm lavements, pessaries, zinc points to the interior of the uterus, dilatation of the os, rest, change of scene, a convalescent home, and various other kinds of treatment, were all tried in vain or with only temporary relief.

On September 6th, 1883, I operated on the round ligaments and easily found them. They were both strong cords and exercised full control over the uterus. A small stem pessary and a Hodge were

introduced immediately after the operation. The wounds healed almost by the first intention, and the patient was allowed to get up at the end of three weeks. A fortnight after I removed the Hodge but allowed the stem pessary to remain for three weeks longer.

I examined her on February 20th. The uterus is well in position, and the canal pervious and straight, She is still puny and dyspeptic but is improving under the idea that her uterine organs are now all right. Should pregnancy soon occur the cure will be complete, but if not, then I am afraid she will become a confirmed hypochondriac for a little until she becomes a mother or gets accustomed to the sad position of being a sterile woman.

In the next two cases I endeavoured to remove the ovaries by pulling them out in the groin by the round ligaments. The first case shows that where adhesions do not exist it can readily be done, but even then it is inferior to abdominal section. In the second case the ovaries being adherent the operation failed.

Case 21.—Mary G—, æt. 38, married, three children living and five dead. She has been ill for five years on account of an "internal pain" about the womb, and of an occasional discharge. She suffers from dragging pains in her loins and from backache. The uterus, on her admission on August 25th, 1883, was found on examination to be prolapsed and tender, and the left ovary was painfully moveable

and enlarged. This patient has been under my care for the last nine or ten years for these symptoms. She would improve for a time by means of rest, &c., and would again relapse when discharged.

On September 6th I placed the uterus well up in the pelvis and maintained it there by the round ligaments. I also removed the left ovary, which was hypertrophied and cystic. The ovary was easily pulled into the wound by means of the round ligament on that side, and the peritoneum over it being opened, the ovary was easily pulled through. The pedicle was transfixed by silver wire that passed through the margins of the wound, the ovary was cut out, and the edges of the wound brought together with the transfixed pedicle compressed between them. Morning and evening temperatures were, for the next fourteen days: 99°, 99·4°; 99·1°, 101°; 100°, 100°; 99°, 101·4°; 98·8°, 101·8°; 99·8°, 99·6°; 98·4°, 99°; 101°, 100°; 98°, 100·8°; 98°, 99·6°; 98°, 99°; 98°, 99°; 98°, 98·4°; 98°, 98°. Normal. A good deal of irritation and suppuration took place in both wounds owing to the dragging on the pedicle.

On October 6th the wound on the left side was quite healed up. The left wound was not healed for a fortnight longer.

On January 11th the uterus was examined. It was soon well up in the abdomen and firmly fixed there. The pain in the left side was completely gone.

Case 22.—Ruth B—, æt. 35, married, was admitted into the Lock Wards of the Liverpool Workhouse on March 22nd, 1883, with endometritis and inflammation of the left ovary. The uterus was

somewhat prolapsed, but not to any very marked extent. The endometritis and ovaritis were intermittent in their character, and many plans of treatment, including rests, pessaries, intra-uterine applications, and blisters to the iliac region over the affected ovary were tried without any marked success.

As judicious tonics and dietetics failed to raise the woman from the chloro-anæmic state into which she had fallen, and as her health was too low to allow an abdominal section and removal of the uterine appendages by that means, I performed the round ligament operation on the left side, and dilated the wound so that my finger reached the ovary. This did not come up to the opening in the same way as in the last case, because the ovary was adherent and matted to the neighbouring structures. I tried by means of a tenaculum to pull it down, but could not succeed with a reasonable amount of force. I therefore stitched the ligament so as to bring the uterus well up and closed the wound. A good deal of suppuration followed the excessive handling involved in my strenuous endeavours to bring the ovary down and some peritonitis ensued. The woman is now, January 1st, 1884, quite strong and healthy, the uterus well tucked up, and the pain and discharge much less. Her case, as well as the last one, has shown me, however, that this method of performing oöphorectomy is not reliable. The adherent ovary may not be capable of removal, even when the opening is made and the ovary felt. Even when the ovary comes up to the opening, the difficulties of getting a ligature round the base of the mass it is

intended to remove cause so much irritation, that the healing of the wound is always slow, and in both my cases took place by prolonged suppuration. I have therefore abandoned it in favour of the ordinary method of performing oöphorectomy. Both cases are, however, examples of the utility of the round ligaments in altering the position of the uterus and of permanently maintaining this altered position.

CHAPTER IV

OPERATIONS BY DR MACFIE CAMPBELL, DR LEDIARD, DR IMLACH, AND DR RURTON—CONCLUSION

The results of an operation, according to the work of its originator alone, are always open to suspicion. The operation may be successful from special skill that cannot easily be obtained by the generality of operators.

The published results may have far too much *couleur de rose*, owing to paralysis of the author's critical powers through love for the child of his brain, or the cases in which he performed the operation may have been easily rectified by other means, and the favorable results may have been due to other causes than the operation. To obviate the force of such objections I have added a chapter giving the results of the operations of other operators who are not influenced by blind paternal love.

The next four cases have been operated on by Dr Macfie Campbell, whose report of them I

quote from the 'Liverpool Medical and Chirurgical Journal,' No. 5, July, 1883, p. 236.

Case 1.—Mrs M—, æt. 36, admitted under care of Dr Caton January, 1882, suffering from severe asthma recurring at intervals during the last five years. The attacks seemed periodic, just before each menstrual flow, and as she also complained of bearing down pains, Dr Caton asked me to examine her. This I did on August 1st and found extreme retroversion with prolapse in the first degree. The uterus was freely moveable and was replaced by the sound. A Greenhalgh pessary being fitted, she coughed this out in a few days, and her history during the next few months was that of displacing and replacing various pessaries, including the vulcanite stem. Benefit was undoubtedly received while the uterus was in position, and this encouraged me to advise Alexander's operation. She was transferred to my care on December 4th. Next day she was placed under ether, the pubes shaved, and the operation already described carried out. The left ligament was found to be at least twice as thick as the right. Both were shortened to the extent of an inch and a half or until the uterus was in a slightly anteverted position. On the second day the thick catguts securing the ligaments were loosened to relieve tension on the skin. On December 8th her temperature was 100°, above which it never rose. Menstruation commenced on this day and lasted to the 16th, was much easier than usual and not accompanied by so much asthma. On the twelfth day after operation antiseptics were stopped and the wound was all but

healed, and she was allowed up at the end of the month. She was transferred to the Medical Wards on January 13th, with the symptoms referable to the displaced uterus quite relieved. The Hodge pessary was worn until the end of January, when it was discarded, Dr Orr reporting that the uterus was in the anteverted position and the prolapse quite cured.

I have examined Mrs M— twice since January, and the favorable condition of all parts still continues notwithstanding severe cough which still recurs, though Dr Caton assures me not so badly as before the operation.

Case 2.—Margaret T—, widow, æt. 62. Has had three children, the youngest now twenty-seven years old. About ten years ago the womb first came down and caused but little annoyance until about two years ago, when the prolapse seemed greater and a profuse discharge caused much discomfort. She was on her way to hospital for treatment when she fell, laying open the knee just below the patella, which necessitated nearly a month's treatment. On examination of the uterus it was found prolapsed in the third degree but easily reducible. The cavity was rather over three inches in depth and no pain was caused by manipulation. The knee being healed, the patient was operated upon under ether on March 29th. The right round ligament was found much larger than the other and exerted a much more noticeable drag upon the uterus when pulled out. Neither, however, seemed to elevate the uterus very considerably although altering its axis—a most important gain.

The ligaments were transfixed in the usual way with two sutures to each ligament and fastened to the ring. When the uterus was replaced a large discharge of muco-pus took place which had not been seen when examined before. The discharge came from the cavity of the uterus which was slightly enlarged and gave no after-trouble, disappearing with the uterine displacement.

On May 9th she was discharged with the uterus in good position and quite comfortable, and none of the old dragging pains which had made her former life unendurable.

Case 3.—Margaret C—, æt. 32, married, and the mother of three children. About three years ago she had a miscarriage and from her description seems to have suffered from some uterine inflammation thereafter. Forcing and bearing down was a constant symptom after the acute stage had been passed, which gradually became worse until external prolapse took place. She was very poor and unable to lay up and utterly neglected herself.

May 1st.—On admission she was very haggard and emaciated, hardly able to walk, and complained of inability to pass water. When examined, a globular mass was found protruding from the vulva. This proved to be a cystocele with prolapse of the entire anterior wall of the vagina. The os uteri rested just on the fourchette and easily admitted the sound to a depth of three inches. The vaginal walls were eroded and ulcerated in various places as though an ill-fitting pessary had been worn, and there was a nasty purulent discharge. A catheter was passed

into the cystocele and the urine withdrawn which was quite free from ammoniacal odour. In trying to replace the uterus it only yielded to a certain point as there seemed to be adhesions posteriorly. I thought, however, there would be enough lift to the womb to relieve the cystocele. This proved not to be the case, as during the operation the uterus could not be moved by dragging upon the ligaments. The operation was on May 7th, and on the 25th the wounds were merely superficial. She suffered a good deal from flatulent distension and symptoms of sub-acute peritonitis, probably from disturbance of old adhesions, but her temperature was never higher than 101°. There is no improvement whatever in the position of the uterus or cystocele.

Case 4.—Annie L—, æt. 50, widow, was admitted May 3rd and operated on May 8th, 1883. According to her own account she has suffered from prolapse for about eight years, and from retroversion for three years, her prolapse coming on suddenly when violently exerting herself in lifting a weight. She had been under the care of Dr Rawdon, who had been able to give her temporary relief by the use of various pessaries. As there seemed no permanent benefit to be derived from these instruments, Dr Rawdon asked me to take her in for the purpose of operation.

On examination the prolapse was slight only in the first degree, but the fundus uteri was lying upon the rectum, and there was slight flexion of the canal of the organ. The uterus was easily replaced by the sound, and its movement was free in every direction.

At the time of operation considerable difficulty arose in finding the commencement of the ligaments, as, owing to the great corpulency of the patient, the wounds were extremely deep. When reached, however, complete control was given over the movement of the uterus; they were shortened to the extent of one inch and a half, the uterus being then in normal position. On the third day she complained of pain in the back and dragging upon the right wound, but the uterus remained in position. It was, however, considered better to introduce a small Hodge to relieve the pressure. On the fifth day one of the stitches was removed on the right side, greatly adding to the patient's comfort. She had no bad symptoms, her temperature was never above 100°, and her condition a month after operation was: The uterus in perfect position, no feeling of drag or bearing-down, the wounds only superficial and almost healed. The pessary was still retained, and would be until she had gone about for a week or two, which she expects to begin shortly.

In concluding this paper, Dr Macfie Campbell makes the following remarks:

"I am particularly indebted to Dr. Alexander for his kindly allowing me to be present at his operations, and for his assistance and advice in operating on the cadaver before my first case.

"Cases 1, 2, and 4 were very satisfactory in every respect, and although in No. 1 the asthma was not permanently relieved, yet she was much

better and her uterus has retained its good position notwithstanding the frequent cough which distresses her.

"Case 3 was a failure and for this reason that it should not have been operated on at all. Dr Alexander tells me that he has operated with slight benefit upon such cases but would not again interfere where there were old adhesions. The operation has done the woman no harm, but certainly it has done her no good, and I would not operate again upon a case in which I could not put the uterus in proper position with the sound and fingers."

"My experience is confined to these four cases only, but I venture humbly to predict a great future for this operation and a lasting honour to Dr Alexander's name in connection with it."

I am enabled through the kindness of Dr Lediard, of Carlisle, to publish an abstract of the result of four cases on which he operated, and the accounts of which were read at the meeting of the British Medical Association in Liverpool, August 2nd, 1883.

Case 1.—Mrs C—, æt. 48, suffered for eight years from prolapse, brought on by lifting heavy weights, mother of one child, was operated on in November, 1882, but the ligaments could not be found. The operation was repeated on July 27th, 1883; the left

ligament was found and shortened. The wound healed by the first intention and the result is so far successful.

Case 2.—Mrs S—, æt. 53, has suffered from prolapse for five years. She is the mother of seven children.

She was operated on on February 2nd, 1883, and both ligaments were searched for—only the right ligament was found. The wounds healed slowly, and she was not discharged from hospital until May 16th, 1883.

An examination on July 4th showed that the uterus was well up and had no tendency to fall.

Case 3.—Phœbe M—, æt. 33, married, has suffered from prolapse for four years and a half. The left ligament was operated on on January 1st, 1883, and was stitched only to the wound and not to the pillars of the ring.

On June 22nd the result was pronounced by Dr Lediard to be satisfactory. She can go about much better and suffers from no bearing-down pains and no bladder troubles.

Case 4.—Mary M—, married, æt. 49, suffered from prolapse of from two to three years' duration. The right ligament was operated on on May 18th, 1883, and the left ligament on June 11th, 1883. The ligaments were stitched to the pillars of the ring as well as to the skin in both operations.

The patient was seen on August 15th. The womb has never come down since operation, but no examination could be made on account of the menstrual flow.

Dr Lediard writes to me: "I have operated on four women and all my cases have been perfectly successful. In two cases I failed to find the ligament on one side. In three cases the result of the operation depends upon one ligament only having been shortened, and in one case both ligaments were operated on. In three instances the wounds have healed well, in four cases slowly, and in one case badly."

Dr Imlach, surgeon to the Liverpool Hospital for Women, has within the last six months performed my operation fifteen times. I am glad that a surgeon with such large opportunities as that hospital affords has taken the operation up, and that he can already speak so highly of it as he does in the following words:

"Since last October to the present time (March, 1884), I have performed the operation of shortening the round ligaments of the uterus fifteen times in the Liverpool Hospital for Women. It is an easy operation. I have never failed to find the ligaments and to draw them out to the required extent. Only once, where the uterus was adherent to the sacrum, was there the slightest difficulty. Here the terminal fibres were so slender that they would scarcely bear any strain, but after half an inch on each side

had been patiently coaxed through the inguinal canal, the ligaments were strong enough to bear pulling. It is a safe operation. The ligaments have not given way, so far as I know, in any case, the incisions have always healed by first intention, and there have been no untoward symptoms. The incision over the pillars of the external abdominal ring ought not to be more than half an inch in thin subjects, and not more than an inch in fat people. It is a bloodless operation. I think I have once tied a small arterial branch, and perhaps twice tied a severed vein. When an inch or two of ligament, according to the necessity of the case, has been drawn out, I now ligature it to one or other of the pillars with fine sulpho-chromic gut which I leave *in situ*. I do not include the pillars or the ligaments in the skin sutures, and have discarded silver in favour of gut or silk.

"My cases are still under observation, and I am unable as yet to speak of permanent results. In eleven cases of painful retroflexion, the normal position of the uterus has been restored in every instance. Unless a stem pessary is introduced before or during operation shortening the round ligaments is apt merely to rotate the uterus as a whole. But the combined methods of treatment are apparently much superior to the old-fashioned

application of the stem or Hodge for a long period of time, and I am inclined to adopt them more frequently than I have hitherto. In the case above-mentioned in which the uterus was adherent to the sacrum, the ovaries were also prolapsed and tender. Hot douches relieved the painful symptoms to some extent, and I determined to try shortening the round ligaments rather than removal of the painful ovaries. If we can in some instances avoid the risk of this latter operation, gynæcologists will probably be glad to adopt Alexander's operation. In another case in which I performed abdominal section I was tempted after separating very strong adhesions by which the uterus was bound to the sacrum, and after freeing the ovaries and Fallopian tubes which had been packed into Douglas' space, to leave the appendages and afterwards perform Alexander's operation. But the woman had suffered so much pain, and the ovaries and tubes appeared to have been so much injured by pressure of the adhesions, that I removed them. It cannot be doubted, however, that there is a possible extension of the operation in this direction.

"I have shortened the round ligaments in four cases of prolapse of the uterus. The first patient was a washerwoman, aged 39, the mother of

three children. The uterus measured four inches in length and with the bladder passed almost entirely beyond the vulva. Three weeks after operation the uterus was almost in the normal position, but the bladder was still, though to a less extent, prolapsed when she walked about. A ring pessary which had been useless before now, completely prevented the cystocele, and she left hospital fully satisfied with her cure. The operation was performed on the 6th November. She has frequently reported herself, and her condition remains as when she left us. On the 11th and 18th December a similar operation was performed upon two women aged respectively 64 and 61 years. Retroflexion is seldom painful after the menopause, and the oldest patient upon whom I have operated for this condition was 39. But prolapse is very troublesome to the feeble and aged. When a pessary is insufficient, stitching up the perinæum and labia or constriction of the vagina has hitherto been our only resource. Compared with these methods, shortening the ligaments is certainly a minor operation, yet in my opinion it is more scientific, and in my experience more likely to be satisfactory to the patient. The woman aged 61 now walks freely about with her uterus in normal position, wearing no pessary, and suffer-

ing no pain. The woman aged 64 wears a ring pessary, as the uterus became slightly prolapsed about a month after operation. In her case the ligaments were probably left too long through fear of causing inconvenient pressure upon the bladder. This fear I believe to be futile, as I have never heard a patient complain of it. Obviously, where the prolapsed condition is chiefly due to elongation of a hypertrophied cervix shortening the round ligaments would not be of service, and it is evident from anatomical considerations that we cannot expect to cure cystocele by this operation."

Dr Burton, another surgeon to the Liverpool Hospital for Women, has performed the operation six times. He writes: "Although I was early convinced that the operation would prove of great value in certain classes of uterine displacements, particularly those in which pessaries could not be borne either through caprice on the part of the patient or otherwise, I still felt disposed in my own mind to limit the range of cases in which it was admissible within a very small area. After seeing the operation performed many times, after performing it myself and after witnessing the course of events on patients operated on up to convalescence, my opinion has become modified, and I now think that recourse may be legiti-

mately had to it in all suitable cases of backward displacement certainly, and probably also in cases of pure prolapsus uteri uncomplicated by supra-vaginal elongation of the cervix, without waiting till both surgeon and patient are wearied with trying pessaries. In regard to the latter class of cases I say 'probably' for the reason that personal observation does not enable me to speak positively on this point, all mine with one exception having been cases of backward displacement.

"The character and chronicity of the majority of my cases may be judged of to some extent by the fact that four out of the five women had been married for periods varying from five to fifteen years, that none had born children, that the symptoms dated at least as far back as marriage, and that pessaries had failed to overcome the displacements. The fifth case was that of an unmarried woman, twenty-five years of age, who had been a sufferer for years and had in consequence fallen into an irritable hysterical condition which may be taken as the outward and visible sign of extreme nervous exhaustion. The recovery in this case was unusually rapid, the patient regained her spirits and temper and was discharged well on the fifteenth day after operation. The sixth case was that of an unmarried girl, aged

nineteen, a virgin, but the unfortunate subject of cystocele and procidentia uteri, the latter complicated to some extent by supravaginal elongation of the cervix. The sound passed three inches. With this ground to work upon the prospect was not very bright, but after keeping her on her back for a month before operation, with a galvanic stem *in utero* and the whole uterus kept up by means of a cradle pessary, I operated. The patient is not yet out of bed. When she does get up I hope the uterus will have recovered some tone, and although the result may not be perfect there may be sufficient improvement to reward us for our pains.

"The operation was performed on March 9th, and on the 16th, when the stitches were removed, union was complete; and in this last case was similar to the other three of the four last cases, all of which healed without a drop of pus. These cases were operated on under the spray, but the dressing was Gamgee's tissue moistened at the part in contact with the line of suture with a little glycerine. The wound was examined on the third day under the spray and not again till the eighth, when the stitches or most of them were removed.

"I would like to conclude these hurried and imperfect remarks by venturing to say that if any

gynæcologist had had a case of long standing retroversion, that had already been under treatment repeatedly by others before coming to him, that general hyperplasia, induration, and tenderness (irritable uterus, Gooch) were present, and had seen this condition changed by the operation to one in which the uterus was in a normal position, which was no longer tender to the touch, and felt soft as any healthy uterus should do, he would feel thankful that all these desirable results could be obtained by the simple, generally easy, bloodless, and harmless operation introduced by Dr Alexander."

In conclusion, it is hoped that the object of this operation is understood to be the *maintenance of the uterus* in the *replaced position and that alone*. It can only cure diseases directly dependent on malposition or displacement of the uterus, and the *failure of the operation* can only arise from a return of the displacement or of the prolapse.

Those who perform this operation to cure neuralgic symptoms, dysmenorrhœa, leucorrhœa, hysteria, or any other of the many symptoms and diseases that uterine displacements are supposed to produce, must remember that the success of this operation in combating these symptoms or diseases depends on the close connection

between them and the uterine displacement as effect and cause.

Should *this operation fail to keep the uterus in the required position*, then it is a *failure of the operation*, but should the uterus be maintained in position and the symptoms continue, then it is a *failure of diagnosis on the part of the surgeon or physician who recommended the operation to be done*. Surgeons who publish cases of the results of the operation should also be careful to distinguish between operative failure on account of imperfect adhesion of the shortened ligament to the wound, operative failure on account of a retroflexed uterus that has developed the fundus to on overpowering extent, so that the round ligaments do not control it, and operative failure dependent on stretching of the round ligaments.

The only published case of failure is one referred to by Dr J. Greg Smith, of Bristol, in the first number of the 'Bristol Medico-Chirurgical Journal,' where he operated for retroflexion. There the uterus maintained a good position for twe or three months assisted by a pessary, but at the end of four months she was as bad as ever. The uterus was not examined so that it may be in position, and the patient may have a pyosalpinx, cystic ovaries, or other lesions repro-

ducing the symptoms. It is impossible to say if it is a diagnostic or operative failure.

Cystoceles are not curable to any extent by the operation. The uterus is merely changed in position and brought nearer the symphysis so that the elevation is neutralised by the approximation. To cure cystoceles it would really be necessary to lift up the uterus in the way many surgeons think my operation does, and the failure by stretching these ligaments, which is too much feared in that operation, would in this case occur. The ligaments would then have to bear the enormous pressure of the pelvic contents, and could not resist that for even twenty-four hours.

Having put the uterus into position by the round ligament operation, the excision of a piece of the anterior vaginal wall will then promise permanent success. In Case 2 the expectation has been realised so far.

Being more of a surgeon than a gynæcologist, I do not presume to decide as to what diseases of women depend on uterine malposition. I merely offer the operation to the profession as a simple, safe, and effectual method of restoring the uterus to the normal position where it may be considered necessary to do so.

In the ‘ Glasgow Medical Journal ’ of June,

1882, Dr James A. Adams, Demonstrator of Anatomy in the Glasgow University, describes very fully how from an anatomical point of view he was led to the same operation. His investigations on the dead body must have been going on at the same time as mine, but he was not able to operate till more than two months after me, and even then pelvic adhesions completely frustrated his endeavours. When I had shown on the living the practical utility of the operation, Dr Adams published his observations, which are so valuable that I almost regret having anticipated him. However, in these days priority is not so much prized, and I am sure the profession will not allow any credit that may attach to me to lessen his.

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