Trans Am Gyn Soc 1893 V-18

THE OPERATIVE TREATMENT OF COMPLETE PROLAPSUS UTERI ET VAGINÆ.

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One purpose of this communication is to call renewed attention to and to emphasize the fact that prolapsus of the uterus, even in its severest forms, is readily, speedily, and permanently curable by modern gynecic surgery.

My second object is to elicit, in the discussion to follow, your individual experiences and methods in the operative treatment of complete prolapse of the uterus and vagina. For although we may all agree that prolapsus is curable by operation, yet will we probably differ considerably both in the kind and in the technique of the operations we employ.

Personally I am not wedded to any routine line of operative treatment, but am inclined to be eclectic, and try to differentiate the indications as presented in individual cases as far as I am able. And this notwithstanding a satisfactory degree of success in the employment of ventro-fixation of the uterus combined with the various plastic operations called for by the condition of the uterus, vagina, and pelvic floor, all required that operations should be performed at one sitting.

I have limited myself in this paper to *complete* prolapsus of the uterus and vagina, *i. e.*, to the consideration of those cases only in which the entire uterus and vagina are outside of the vulva. It will readily be granted that, provided we can deal successfully with these extreme cases, the lesser degrees of prolapsus should offer no special difficulties.

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The first question that arises in connection with the operative treatment of complete prolapsus of the uterus is one of principle: Shall we endeavor to preserve the uterus, or shall we remove the prolapsed organ by total extirpation? Until such time as it can be shown that the results achieved by total extirpation of the uterus for prolapsus are better and more lasting, as well as that the operation is no more dangerous than the rival procedure, I shall adhere to ventro-fixation of the uterus combined with the necessary plastic operations as the rule, practising total extirpation only on exceptional indications.

Such exceptional indications to my mind are:

1. A uterus so large and heavy that it cannot be reduced to an approximately normal size and weight by amputation of the cervix.

2. A uterus presenting either positive evidence or strong suspicion of malignant disease.

3. A uterus with appendages so diseased that the condition of ovaries and tubes calls for their removal, apart from other considerations.

It must be remembered, also, that total extirpation of the uterus is in itself not sufficient to cure complete prolapsus of the uterus and vagina, but that plastic operations, of one kind or another, upon the vagina and the pelvic floor are required in addition.

The only method of total extirpation for prolapsus claiming to dispense with the necessity, in some cases at least, of these added plastic procedures, is that advocated and practised by Dr. W. M. Polk. Dr. Polk opens the abdomen, removes the uterus from above, and attaches the cut end of the vagina to the abdominal wall in closing the wound of the latter. The ingenuity, originality, and plausibility of the procedure recommend it strongly, even without the crucial test of its successful use by such a reliable observer as Polk. Although I have no reason to be dissatisfied with my experience, limited though it be, in the combination of vaginal hysterectomy with operations upon the vagina and perineum, I shall, in the next case of

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total prolapse calling, in my opinion, for total extirpation of the uterus, give the method of Polk a trial.

My objections, then, to the routine practice of total extirpation of the uterus for prolapsus of that organ and the vagina are based on two grounds mainly. First, because the practice is opposed to that rule of conservative surgery which calls for the preservation of all organs which by their presence menace neither life nor health. Secondly, because total extirpation neither lessens the danger nor simplifies the operative technique, except, perhaps, when practised after the method of Polk. On the other hand, with healthy tubes and ovaries, ventro-fixation of the uterus, combined with plastic operations, preserves the possibility of childbearing, and for that reason alone is entitled to favorable consideration in quite a large number of women.

Leaving out of consideration now those exceptional instances in which total extirpation is called for in the treatment of complete prolapsus of the uterus and vagina, I would strongly insist, in all cases of complete prolapsus, in the operative treatment of which the uterus is preserved, upon ventro-fixation of the uterus as an essential adjunct to whatever plastic operations upon the uterus, vagina, and perineum may seem called for. A properly performed ventro-fixation of the uterus gives a better guarantee of permanent cure of the prolapsus than any one of the additional plastic operations singly, or perhaps than any given combination of these additional operations looking to the preservation of a vagina, can give. And this preservation of a vagina is a very important matter to nearly every one of our patients.

Consequently I would lay it down as an axiom that whenever the uterus is preserved in prolapsus operations it should be *securely* ventro-fixed. I say securely advisedly, because in the only one of my cases of uncomplicated complete prolapsus in which I did ventro-fixation, and in which I have known a recurrence of the prolapse to take place (Case 4), I have reason to believe that the uterus was not properly ventro-

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fixed, the trans-peritoneal hysterorrhaphy of Krug having been performed. By this I do not mean to assert that the failure was due to the method of operation. The fault may have been with the operator, whose first as well as last experience with the method it constituted.

I confess to a considerable degree of skepticism regarding the ability to obtain a permanent cure of *complete* prolapsus of the uterus and vagina by the various methods of vaginal fixation of the uterus after Schücking, Dührssen, Mackenrodt, and others, although a number of operators seem to be satisfied with their results thus obtained.

Whatever plastic operations, joined with ventro-fixation of the uterus, are indicated in the conditions presented in a given case of prolapsus of the uterus and vagina, I cannot too strongly insist upon the performance of all of them, including the ventro-fixation at one sitting. Not only is our patient at this day entitled to expect this from the expert and to claim only one anæsthesia, but the result must be better when all operations are performed at one sitting, each separate operation forming one stone of the arch, the integrity of which is endangered by even the temporary absence of one such stone.

The various combinations of operations I have practised in each of my twelve cases, comprising my entire experience, exclusive of two cases already published, with the operative treatment of *complete* prolapsus uteri, will be found recorded in the table appended. The two cases already reported were complete failures. In one[1] the prolapsus was due to a tubercular ascites. In the other[2] ventro-fixation of the uterus was not performed.

[1] "Tubal and Peritoneal Tuberculosis," Transactions of the American Gynecological Society, 1891.

[2] "Combined Gynecological Operations," American Journal of the Medical Sciences, September, 1892.

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TABLE OF CASES.

No.	Name.	Age	State.	Children.	Condition before operation.	Date of operation.	Operations performed.	Result.
1	K. W.	43	Married	2	Tubes and ovaries normal. Complete prolapsus of uterus and vagina. Laceration and great hypertrophy of cervix.	Feb. 19, 1890	Amputation of cervix. Shortening of round ligaments. Perineorrhaphy.	April 19, 1893. Uterus at normal height in pelvis and in normal anteversion. Vagina and perineum normal; slight cystocele. Has been doing the hardest kind of housework, and now considers herself perfectly well.
2	M. P.	44	Married	8	Ovaries and tubes normal. Complete prolapsus of uterus and vagina. Laceration and enormous hypertrophy of cervix. Uterine cavity 11.5 centimetres deep.	March 5, 1890	Amputation of cervix. Shortening of round ligaments. Perineorrhaphy.	Result perfect six weeks after operation. No trace of patient since.
3	K. S.	54	Widow	4	Ovaries and tubes normal in size. Complete prolapsus of uterus and vagina. Uterine cavity 13 centimetres deep. Cervix deeply lacerated and enormously hypertrophied. Extensive ulcerations of vagina.	June 2, 1890	Amputation of cervix. Anterior colporrhaphy. Colpo-perineorrhaphy.	Result good on discharge, a month after operation; since then patient has not been seen or heard from
4	L. M.	35	Married	2	Ovaries and tubes normal in size. Complete prolapsus of uterus and vagina. Uterine cavity 9.5 centimetres deep. Cervix lacerated and deeply excoriated.	Dec. 3, 1890	Anterior colporrhaphy (purse-string operation). Hysterorrhaphy (transperitoneal method of Krug). Colpo-perineorrhaphy.	Complete failure, the prolapsus recurring in two months. Prolapsed uterus impregnated; abortion induced by family physician at third month. Second operation two years later (Case 10).
5	E. F.	33	Widow	2	Extensive diastasis of recti abdominis. Ovaries and tubes normal in size. Complete prolapsus of uterus and vagina. Cervix lacerated and moderately thickened.	April 1, 1891	Curettage of uterus. Amputation of cervix. Anterior colporrhaphy (purse-string operation). Ventro-fixation of uterus. Perineorrhaphy.	Remains well, although doing the hard work of a restaurant cook. Uterus well up, firmly attached to anterior abdominal wall. Perineum and posterior vaginal wall normal. Slight cystocele. Last seen April 19, 1893.

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6	M. M.	35	Married	2	Ovaries and tubes normal in size. Complete prolapsus of uterus and vagina. Deep laceration and hypertrophy of cervix.	Sept. 11, 1891	Amputation of cervix. Anterior colporrhaphy. Ventro-fixation of uterus. Colpo-perineorrhaphy.	On discharge, a month later, uterus well up in pelvis, firmly attached to the abdominal wall. Vagina and perineum normal. Patient lost sight of.
7	M. M.	36	Married	5	Ovaries and tubes normal in size. Complete prolapsus of uterus and vagina. Bilateral laceration and thickening of cervix.	March 11, 1892	Curettage of uterus. Amputation of cervix. Anterior colporrhaphy. Perineorrhaphy. Ventro-fixation of uterus.	Miscarried at second month, in October, 1892. Seen April 17, 1893. Uterus, vagina, and perineum remain as they were immediately after operation. Complete cure.
8	C. L.	51	Married	6	Ovaries and tubes normal in size. Complete prolapsus uteri et vaginæ of twenty-seven years' standing. Unsuccessful operations, in competent hands, three years ago.	April 1, 1892	Curettage of uterus. Anterior colporrhaphy. Colpo-perineorrhaphy. Ventro-fixation of uterus.	Perfect result, the patient remaining cured when last seen, more than a year after operation.
9	M. K.	28	Single	...	Ovaries and tubes normal. Complete prolapsus uteri et vaginæ, the result of a severe strain at lifting three years ago. Uterus has never been replaced since.	May 6, 1892	Curettage of uterus. Amputation of cervix. Lateral colporrhaphy. Perineorraphy. Ventro-fixation of uterus.	Patient remains absolutely cured a year after operation, although she has done the hardest kind of work ever since.
10	L. M.	37	Married	2	Case 4 relapsed (the same conditions presenting as already recorded).	Oct. 4, 1892	Curettage of uterus. Lateral colporrhaphy. Perineorrhaphy. Bilateral salpingo-oöphorectomy. Ventro-fixation of uterus.	Perfect result, lasting to date, May 13, 1893.
11	R. W.	45	Married	10	Ovaries and tubes normal in size. Complete prolapsus of uterus and vagina. Laceration of cervix.	Dec. 20, 1892	Curettage of uterus. Amputation of cervix. Anterior colporrhaphy. Colpo-perineorrhaphy. Ventro-fixation of uterus.	Perfect result, with exception of slight cystocele, when last seen, April 15, 1893.
12	M. C.	61	Married	1	Ovaries and tubes normal in size. Complete prolapsus of uterus and vagina. Complete inversion of cervix uteri.	Jan. 27, 1893	Vaginal hysterectomy, both tubes and ovaries being removed with the uterus. Lateral colporrhaphy. Perineorrhaphy.	Perfect result, lasting to date, May, 1893.

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As I have, in the second of the papers just alluded to, fully described my technique in the performance of the various operations entering into combination in the treatment of complete prolapsus uteri, I shall not enter anew upon the subject here. I shall merely reiterate that I have abandoned shortening of the round ligaments as a prolapsus operation, for the reason that, although a good and permanent result was obtained in Case 1 of the appended table, it has signally failed to realize expectations in a number of cases of incomplete prolapsus in which I have employed it in conjunction with plastic operations.

A phenomenon of quite frequent occurrence, in cases otherwise showing perfect results, has been the recurrence of a slight cystocele, not annoying to the patient, but still indicating to the operator a desideratum in the shape of improved technique with a view to its prevention.

In the three cases in which lateral colporrhaphy was performed instead of an anterior and a posterior colporrhaphy, no cystocele was subsequently noted. The writer believes that this result is not merely dependent upon chance, but is associated with the fact that in performing lateral colporrhaphy we secure a hold upon the fixed lateral walls of the pelvis, whereas in anterior and posterior colporrhaphy we attach the vagina to movable organs, the bladder and rectum. Re-descent of the vagina, dragging with it the bladder and establishing a cystocele, is thus favored.

Another great advantage of lateral colporrhaphy lies in the mathematical precision with which we are enabled to give any desired size to the resultant vagina. By leaving, for instance, a longitudinal strip, three centimetres in width, in connection with the bladder, and another of equal size attached to the rectum, removing the entire lateral walls of the vagina between these strips and approximating the lateral margins of the strips by sutures, a vagina six centimetres in circumference and about two centimetres in diameter will be left.

All the operations recorded for each case of the accompanying table were invariably performed at one sitting. Primary union

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was obtained in every plastic operation, and in all the ventrofixations except two. In these small mural abscesses for a short time delayed complete recovery.

DISCUSSION.

Dr. Thomas Addis Emmet, of New York.—The subject covers an immense field. To begin with, I would say that in order to cure a case of complete procidentia the most important thing is to make a diagnosis as to the cause. I think that we fail frequently because we are not able to do this. I have seen very few cases of complete procidentia which could not be relieved by plastic surgery. I have never seen an instance in which I considered extirpation of the uterus called for. Of course, there are exceptions to every rule; I simply speak from my own experience. Many men fail to get good results in procidentia by attempting to gain support from the anterior wall of the vagina, which is a fallacy. There is no operation which has ever been devised on the anterior wall which can give any support to the uterus, unless it be one which I have recently tried a few times for the relief of a class of cases now becoming quite numerous, where the appendages have been removed and where in consequence, I suppose, of tying the ligature too low in the broad ligament the uterus is forced down on the floor of the pelvis. The condition in the vagina after recovery from the operation is exactly the one which exists after a woman has had a large number of children and has passed the change of life. I have thought that in some of those cases I have given relief by an operation which I have performed on the anterior wall, but it is too soon yet to speak of the ultimate result. If we make a V-shaped operation on the anterior wall and carry it far back into the cul-de-sac beyond the cervix, so as to leave merely a small opening in the end of the vagina for the escape of any uterine discharge, we seem, by uniting the sides of the V-shaped denuded surfaces, to bring into play a lifting power that will raise the uterus up off the floor of the pelvis. I cannot explain why, but we somehow or other seem to get by this means a new bearing or support which has the effect of correcting prolapsus, while we gain a

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proper support for the bloodvessels; and, after all, it is from a want of this support that the woman usually suffers, as the bloodvessels become straightened out and dilated. There is a condition resulting from instrumental delivery which I have found, as a rule, to be incurable. It seems as if a separation was caused between the rectum and the vagina so that the whole contents of the pelvis comes down *en masse*. I have had several cases in my life in which I have failed to lift the uterus from the floor of the pelvis, and thereby to relieve the patient, but I have never yet failed by plastic means to keep the uterus in the vagina. Whatever kind of operation we may do, we can give no support to the uterus unless it is gained through the posterior wall. We can do no operation upon the anterior wall which will give any support to the uterus or the proper one to the bloodvessels. In other words, whatever is done by surgical means, it must be an operation to take in the slack of the retracted fascia in the pelvis, since it is the fascia and connective tissue which give the proper support to the bloodvessels. Therefore, whatever procedure you may adopt, this principle must be recognized of giving the proper support to the pelvic vessels if we are to relieve the patient.

With the exception of a few cases resulting from lifting in single women, and from fibroids, most of the cases of procidentia which I have met with have been among those who have borne children or have suffered from extensive lacerations of the cervix. Frequently the prolapsus has come on after the menopause, from the disappearance of the posterior cul-de-sac, and when all the appearances of a laceration have disappeared, yet if we take a V-shaped piece out of the cervix and treat it as a laceration, or if we amputate a portion of the cervix, we can reduce the size of the uterus, and involution will likewise take place in the vagina. The operation on the cervix is necessary to bring about involution of the uterus and also to lessen the size of the vagina, before we resort to any plastic procedure on its walls, or we shall be disappointed in the result. I do not know why it is, but I can only say that I have seen very few cases of prolapsus which I could not relieve by plastic surgery. Sometimes I have failed once, twice, or several times, but in the end I have suc-

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ceeded. I have had patients under observation for ten years or more when I was at the head of the Woman's Hospital. At that time women would come back if they were not cured, as there was nowhere else to go, and if cured they came through gratitude. I had thus, from this fact, an experience which no other man has had, or could have again. Those who are operated upon to-day think that you have done nothing more than you ought to have done if you succeed, and if you fail you will certainly never see them again, as some kind friend will inform them that he would have done otherwise. I can honestly say that I have seen very few cases of complete prolapsus of the uterus in my life which I could not relieve by plastic surgery. I have in a few cases fixed the uterus to the abdominal wall, and in some instances have succeeded in that way, while in others I have failed entirely, because of the difficulty of lifting the organ to exactly the right distance and retaining it there. If you pull the uterus up too far you straighten out the vessels and will have exactly the same train of symptoms by dilatation of these blood-vessels, and, in consequence, disturbance of circulation just as if the organ was prolapsed. There is in every woman a health-line for the circulation, as it were, which must not be exceeded one way or the other. As much blood must leave the pelvis as enters it, and when the uterus is lifted too high, or is prolapsed, the veins in both conditions become distended and stasis results. There may be exceptional cases which cannot be relieved by plastic surgery and in which one may successfully resort to lifting the uterus by attaching the broad ligaments to the abdominal wall, but in each individual case it is guess-work in my experience, and when relief has been obtained it has been an accident.

Dr. E. C. Dudley, of Chicago.—I can repeat what Dr. Emmet has said, that I have not seen in my experience a case in which plastic operations would not relieve procidentia, except where the uterus was the seat of a tumor or there was some mechanical force pressing the organ down. I have recently performed several times a new plastic operation for the relief of procidentia, but as I understand that this subject is not to be included in the discussion I shall say no more about it.

Dr. William M. Polk, of New York.—I find myself some-

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what in opposition to the gentlemen who have preceded me, for it has been my misfortune to find among the working classes cases of procidentia which I could not relieve by plastic operations. I take it for granted that in this discussion the matter of the personal equation surrounding any individual operative procedure is a side issue, because if it is not, we all must admit that Dr. Emmet can, in plastic surgery, do that which none other in this Society can hope to reach. Therefore, we accept the Doctor's statement that he himself can in every instance effect a cure by plastic operations.

Dr. Emmet.—I did not say so. I said that there were exceptions to the rule.

Dr. Polk.—Then I was talking aside from the question. Accepting the Doctor's statement that there are exceptions, those exceptions have happened to fall within my line of work, and I presume that it is to those exceptions that the operation which Dr. Edebohls has described would apply. They are cases in which, as the author has said, the uterus and vagina are outside—cases in working women—cases, in other words, in which an ordinary plastic operation would, to my mind, fail. We may, in considering this subject, look upon the condition as one of hernia, and the principles which should be applied in every hernia should be brought to bear here in surgical treatment. The nearer the woman is to the menopause, the time when the uterus is going to cease to be of use, the more urgent, it seems to me, is the adoption of the method of which I am about to speak. We have an organ which, by its position, tends to extrude, no matter how carefully the work to prevent it is done from below. The operation of which I would speak is nothing more than removal of that organ and the attachment of the slack of the vagina to the abdominal wall. Originally the case, no doubt, would have been quite as well treated by hysterorrhaphy, as Dr. Edebohls has said, but I have observed that where there is this extreme prolapsus, with extreme elongation of the vagina, attaching the fundus to the anterior abdominal wall did not sufficiently take up the slack, and in removing the uterus I cut off as much of it as was necessary in order to accomplish that purpose, to take up the slack, and this led ultimately

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to the practice of removing the organ and attaching the vagina and the outer covering of the lower segment of the uterus to the anterior abdominal wall. But there are certain cases in which it appears to me that even the attachment of the vagina cannot be made, and in which the amount of slack is such that a hysterorrhaphy will not avail. In those cases it has been my practice to transfer the supports of the uterus to the vagina—a plastic procedure which is quickly done, is without danger, and in the cases in which I have tried it has given me good results. The exact manner of putting this procedure into execution I shall not occupy your time in describing, the mere mention of it being sufficient to convey to your minds how it can be done. All that I shall say is that it is a very simple procedure and one which leaves the vagina in such a position that it can be entirely closed from above, and covered with peritoneum, thus avoiding the danger of contamination from below.

Although I have two or three patients upon whom these operations alone have been done, and with very good results, yet I confess that I believe a plastic operation should always be done in addition in order to repair the pelvic floor, for the essential point is that there has been a hernial protrusion through an opening which has been so enlarged as to invite subsequent protrusion, even though you remove the organ which is the chief offender in prolapsus. Therefore, the same rule should be made to apply here as in umbilical and in inguinal herniæ, namely, to restore the opening as nearly as surgical technique will permit.

DR. FLORIAN KRUG, of New York.—Total procidentia of the uterus and vagina is a condition not often met with in private practice. Indeed, I have never seen a case among the well-to-do, but frequently in hospital work among hard-working women. It is just that class of women who are in need of a radical cure, much more than patients in private practice, who can lie on the lounge and have all the comforts that money may purchase. The statement has been made by Dr. Emmet that in most cases, although he says there are exceptions to the rule, plastic work in restoring the pelvic floor will control this most serious disease without any further surgical procedure. And Dr. Dudley has

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gone further still and said that he has never had any case which he could not relieve in that manner. Now, I am not in that position. I have been disappointed in some of my earlier cases when I relied on plastic work only. I may add that I have had to perform additional operations upon some patients previously treated by other gentlemen by plastic procedures upon the pelvic floor only, gentlemen whose names are familiar to all here. This simply shows that even the best plastic surgery will not always prevent relapse.

Now, Dr. Edebohls has suggested as the main topic for discussion, total removal *versus* hysterorrhaphy. I shall limit my remarks to that subject. While I am in favor of progressive methods in dealing with diseases that give serious symptoms, I must say that I am not ready to indorse extirpation of the uterus as the routine manner of dealing with complete prolapsus of this organ. In fact, amongst the large number of cases coming under my care at the hospital there has been but a single one in which I had to resort to total extirpation. That was in a woman thirty-two years of age, a hard worker, the mother of twelve children, whose abdominal walls were so flabby that they could be pulled out fully a foot and a half, and, also, could be pushed down through the vagina. There was no chance by hysterorrhaphy or any other procedure to keep the heavy uterus up. I, therefore, performed vaginal, or rather inter-femoral hysterectomy and plastic operations on the vagina, with a perfect result.

While that is the only case in which I have had to resort to total extirpation of the uterus, I have operated on a large number of patients without a failure, following more or less the same steps which Dr. Edebohls has recommended to-day. I consider dilatation and curetting a most essential preliminary step before doing hysterorrhaphy. It gives us a clean uterine cavity and also causes involution and considerable reduction in the size of the uterus. Having then amputated the hypertrophied cervix, which is necessary in the majority of cases, the next step is to do the plastic work on the perineum. If possible, do the hysterorrhaphy at the same sitting.

Regarding my operation called "transperitoneal hysteror-

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rhaphy," referred to by Dr. Edebohls, I wish to make a confession. It is that I have not done it lately, although I have not given it up entirely. The operation is one by which the uterus is stitched to the anterior abdominal wall without making an incision into the peritoneum, although the special needle does penetrate the peritoneum, and with its edge the peritoneal covering of the uterus is scraped. I devised that method in order to avoid performing cœliotomy in a class of cases in which the patient would not consent to abdominal section. However, I feel that unless a man can do such perfectly aseptic work that in such simple cases he can guarantee to his patient no harmful result, he should not undertake to do anything at all. Therefore, I think that it is better to incise the peritoneum, to insert a finger through an incision, which need be but very small, to separate whatever adhesions there may be, and to perform ventral fixation.

To sum up: In cases of complete prolapsus it is just as necessary to do plastic work and to restore the floor of the pelvis as it is to hold up the uterus, and one should no more rely on total extirpation or fixation of the uterus than on a plastic operation upon the pelvic floor alone. I must, then, take the same stand as Dr. Edebohls. Total ablation is only indicated in exceptional cases, and then in combination with plastic work on the pelvic floor. In all the other cases plastic operations should be preceded by procedures for the reduction of the size of the uterus, viz., curettage and amputation of the cervix. Ventral fixation will then insure a permanent result. In this way I have been able to cure the most desperate cases, as is shown in a number of women operated upon by me years ago, who are now able to perform the hardest work without any return of the prolapsus.

Dr. T. A. Emmet.—I wish to make a few additional remarks in order that I may not be misrepresented. I did not say that the plastic operation for procidentia should be confined entirely to the posterior wall of the vagina, for that alone that will not cure the condition. An operation on the anterior wall is equally essential, but is performed for an entirely different purpose. The operation on the anterior wall of the vagina should never be performed with the object of giving support to the uterus, for this is impossible by such a procedure, or by any other confined

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to the anterior wall. The purpose is to keep the neck of the uterus so far away from the pubes that the radial distance thus gained will be too great to permit of a sufficient degree of prolapse for the uterus to escape from the vagina. This it can only do by the anterior wall becoming doubled upon itself, so that the neck of the uterus is thus allowed to come forward toward the neck of the bladder. The operation on the posterior wall of the vagina, or, more correctly, on the floor of the pelvis, when properly performed, so as to roll in the vaginal outlet and to lift the posterior wall of the vagina up into close contact with the anterior wall, is the only procedure which will give the proper support to the uterus and to the pelvic bloodvessels. Frequently we have first to operate on the lacerated cervix to bring about involution in both the vagina and uterus. We must bear in mind, then, the purpose of both operations—that on the anterior wall to carry and hold the cervix toward the sacrum, and the posterior one to bring the two walls of the vagina together, so as to take in the "slack" not only of the over-stretched vaginal tissues but also of the retracted pelvic fascia, and thus to regain the needed support for the bloodvessels as well as for the uterus.

DR. H. J. BOLDT, of New York.—I think that in any operation much will depend upon the condition of the uterus. If the patient is an old woman with senile atrophy of the uterus, I do not see what is to be gained by removing the entire organ, for the procidentia consists of prolased vagina and an elongated cervix, while the body of the uterus may be quite small. The reason why plastic operations fail in many of these cases is because atrophy of the connective tissue has proceeded to such an extent that the mucous membrane is, as it were, a separate structure, with nothing to hold it up. To do any good in such cases by repair of the pelvic floor the operation must be done very thoroughly. We must not only get rid of the mucosa, but also remove the cellular tissue, in order to have a firm base for our plastic work. If we do that, it matters little which of the vaginal plastic operations we perform, that on the lateral or that on the anterior and posterior walls. The main thing will then be to amputate the elongated cervix and to make the denudation of the mucosa and connective tissue sufficiently extensive.

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The operation to which Dr. Polk refers applies, I think, rather to cases in which the uterus itself is much enlarged. There, plastic operations will not be sufficient. One must do, according to his own judgment, either ventral fixation or total extirpation. But, contrary to the experience of Dr. Edebohls, I have found, after operating on the cervix and doing plastic surgery, that shortening the round ligaments in the inguinal canal succeeds. The points to be considered in a given case are the age of the patient, the size of the uterus, and the pathology of the respective case.

Dr. E. C. Dudley, of Chicago.—This discussion ought not to close until the fact has been made clear that there are two classes of operations done in cases of complete procidentia. All operations belonging to one class are useless, while those belonging to the other class are very effective. The former have for their object the narrowing of the vagina in such a way and to such an extent that the uterus has not sufficient space to pass out; but if the axis of the uterus and that of the vagina remain in the same line it, is only a question of time when the uterus will descend, making its own way out through the elastic vagina.

The other operations, the most effective of which being that perfected by Dr. Emmet, have for their object a change in the angle between the long axis of the vagina and the long axis of the uterus, causing these two axes to form an acute angle with each other. In such an operation the cervix is forced up into the hollow of the sacrum and is retained there by fixing the upper extremity of the vagina in the hollow of the sacrum. Another part of the treatment consists in holding the lower part of the vagina up toward the pubes. When those steps have been taken the body of the uterus cannot fall back and it cannot descend into the vagina because of the acuteness of the angle. All that class of operations will ordinarily give relief, unless the uterus is forced down by something above, as by a tumor, for example.

Dr. A. Lapthorn Smith, of Montreal.—I can give my testimony as to the value of the combined operations mentioned by Dr. Edebohls, since they have given me such good results that I have not found it necessary to remove the entire uterus. When we

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come to consider how the procidentia occurs, that first of all there is laceration of the cervix, then subinvolution, then falling of the uterus backward, the intestines getting in front of it so that the uterus receives the whole weight of intra-abdominal pressure, we have a basis to work upon in treatment. We first have to curette the uterus, and to repair the cervix, then to do anterior and posterior colporrhaphy, then ventral fixation. In fixing the uterus to the anterior abdominal wall I think that it is important to scarify the serous covering of the corpus uteri so as to get inflammatory exudation and firm adhesion. And I think that it is also important to leave the silkworm-gut sutures in at least a month, in order to allow the new tissue to become thoroughly organized. I believe that when ventral fixation has failed, it has been due to the fact that the sutures were removed too soon, during the time when the new tissue was still elastic and distensible. But if the ligatures are left in one month, as I have done during the last few years, they will do no harm, but will hold up the uterus, allowing the union between it and the abdominal wall to become more and more firm, and it is unlikely that the organ will again descend. I can testify very strongly in favor of doing three, four, or even five of these operations at one sitting.

DR. NOBLE, of Philadelphia.—It is somewhat striking that those who follow most strictly in the lines laid down by Dr. Emmet have the most confidence in plastic work. I can bear personal testimony to the value of plastic surgery in the treatment of procidentia. In my practice, as, I suppose, in the practice of all others, complete is very much rarer than incomplete procidentia. If one were to exclude from the discussion cases in which simply the cervix protruded through the vulva I could say that I have operated upon very many. But, as far as I know, only one case of complete procidentia of the uterus and vagina has come under my treatment in which plastic operations have failed to effect a permanent cure. The plan of procedure which I have adopted has been to amputate the uterus at as high a point as can be done without opening the peritoneal cavity. In all these cases the organ will measure, with the elongated cervix, four to five inches. It is a very simple matter to cut the vagina away from the cervix as we do in vaginal hysterectomy, to slip

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the cervix free, to amputate it, and to stitch the vagina to the cervical stump. In that way you shorten the uterus so much that, as a rule, by the time the patient is out of bed it measures not more than three inches—a comparatively small uterus. Then I operate on the anterior vaginal wall (I have usually done Stoltz's operation to save time), then I do the more extensive operation on the pelvic floor, in line with the teachings of Dr. Emmet, and utilize the action of the levator ani muscle in holding up the vagina and pelvic fascia. In my hands the results have been extremely satisfactory. There has been but one complete failure. I can agree, however, with Dr. Edebohls, that in some cases it would be desirable, particularly in hard-working women who have to continue on their feet almost constantly, to do ventro-fixation, and I myself believe that such a procedure would scarcely add to the dangers of the entire operation. So far, I have not done ventro-fixation in these cases, but I am inclined to think that it would be an addition to the treatment.

Dr. James R. Chadwick, of Boston.—It appears to me that the factors which I regard as most essential in this operation have not been kept steadily in view as the discussion has gone on. It does not seem to me that the weight of the uterus is the chief factor in procidentia. The chief factor, according to my idea, is that factor which exists in every hernia—umbilical, inguinal, vaginal—an increased tension within the cavity and loss of resistance at the outlet. I say that it is unsurgical and unscientific to think of cutting away what is coming out of the aperture. I do not think that it makes any essential difference whether the bladder, vagina, or uterus comes through the hole, any more than it does in inguinal hernia, whether it is the ovary or intestine that has protruded. I would not think of cutting it off, but rather of closing the opening. The weight of the uterus is not really the important factor; it is rather the disproportion between the abdomino-pelvic tension and the resistance at the outlet. I say, therefore, stop the outlet as well as you may. I think that Dr. Edebohls' idea is correct. (Dr. Chadwick here illustrated his meaning on the board.) Some operators leave the uterus in such a position that the body is thrown back, which tends to allow the return of the hernia.

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But if, instead of placing the uterus by your operation in a position to become retroverted, you antevert it and close the outlet, it will be less likely to come down. The point is that which has been made by Dr. Dudley, to place the uterus in a position of anteversion and to close the outlet, and then the pressure from above will further antevert the uterus and keep the vagina stretched longitudinally.

A factor which has not been borne in mind was pointed out by Matthews Duncan, which he called, I believe, the retentive power of the abdomen. It should be remembered that the abdominal cavity is a closed cavity, and that you cannot have something come out at the vagina without the abdominal walls above falling in to fill the vacuum thus created. Duncan pointed out the fact that the hanging down of the abdominal walls has the power of preventing too much pressure on the peritoneum. In other words, it draws up the peritoneum on which the pelvic organs rest. That view has been worked out more thoroughly, I believe, by Schultze. We cannot, of course, bring that factor to bear very well in the relief of these cases, but it should be borne in mind in seeking their explanation. On the whole, I think that LeFort's operation is the one which accomplishes most in bad cases—uniting the anterior to the posterior vaginal wall throughout their length. Starting just below the cervix, you denude the anterior and posterior walls and sew them together, then rebuild the perineum. This disqualifies a woman as a wife, so that in ordinary cases sewing up the perineum, reducing the calibre of the vagina, and throwing the uterus forward in anteversion must suffice. Lately I have done Alexander's operation at the same time as the perineal operation, but it is too recent to speak of the result.

Dr. Edebohls.—My main purpose in presenting this paper was to elicit a discussion and to obtain the experience of other Fellows in the treatment of this most annoying class of cases, and thank the gentlemen for their remarks. I limited the paper to cases of complete prolapsus of the uterus, for I felt that if we could relieve those by operation we could surely succeed in cases of partial prolapsus.

I agree perfectly with many of the speakers, that by plastic

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work alone prolapsus can be cured without ventral fixation, and I say that it can be thus cured in nearly every case, perhaps even in *every* case if the operation is properly done; but what does that imply? It implies that you close the vagina to such an extent that it does not any longer answer the purpose of a vagina, and, except in old women without husbands, that is a great objection. In this connection I would answer a statement made by Dr. Dudley and Dr. Chadwick, that in order to prevent the uterus from again forcing its way down we must put the axis of the uterus at an angle with that of the vagina instead of in line with it. That is just what ventral fixation does—it brings the fundus squarely forward against the anterior abdominal wall and places the axis of the uterus at a right, or an acute, angle with the axis of the vagina. I agree also with Dr. Lapthorn Smith, that it is advisable to hold the uterus against the abdominal wall in ventral fixation as long as possible by the suture, and the buried permanent suture is a good method of accomplishing that.

In reply to Dr. Polk's remarks on taking in the vaginal slack, I claim that by ventral fixation of the uterus you have the means of taking in as little or as much vaginal slack as is indicated. If there is a very long vagina, I fix the uterus higher up on the abdominal wall; if the vagina is short, I fix the uterus lower.

I have excluded cases in which the prolapsus is due to a tumor in the abdomen, as they constitute a separate class. I am glad that the Society has had the pleasure of hearing Dr. Krug's later experience with trans-peritoneal hysterorrhaphy. I was very curious to know, at the time be began it, whether he would continue its practice.

There is no doubt that with increased experience, we can do better plastic work, and I am almost willing now to promise a woman that by combined operations she can be absolutely cured of complete procidentia. I have already referred to shortening of the round ligaments. I do not think that is a good operation in these cases of complete prolapsus, although I am an ardent advocate of it in cases of retroversion. The operation which will give relief and at the same time go furthest toward restoring the normal relations of the pelvic organs is the one which should be chosen.

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