

IV. *The President* then read his paper on

## TWO CASES OF CHRONIC INVERSION OF THE UTERUS.

THIS lesion is not a common one. In the course of seventeen years' practice I have only had charge of three such cases. I have seen one or two others under the care of Dr J. M. Duncan; but this forms all my experience of the kind.

The subjects of the present paper came respectively from Inverness and Mid-Lothian. In both cases the accident was not detected for some time after delivery, and in both there would appear to have been a great absence of the alarming symptoms of shock which usually accompany the acute lesion. Believing that a relation of the cases, which are typical each in its own way, and differ widely in almost every point, would interest the Society, I have taken the liberty to lay them before you.

### CASE I.—*Complete Inversion of Seven Months' Standing. Forcible Reposition after Three Attempts. Complete Recovery.*

This patient was recommended to my care from Inverness by two medical friends there who had seen the case, diagnosed the lesion, but failed in a first attempt to reduce the inversion.

The particulars, as given by the patient's friends, are as follows:—The patient, æt. 22, was married on the 10th of June 1878, and was confined of her first child, a well-formed female, after an illness of 48 hours, on the 7th of February 1880. The delivery was natural, and the head presented. The afterbirth was removed early by introduction of the hand. This was followed by considerable bleeding, much pain, and faintness. The medical attendant stayed by his patient till 8 A.M. on the following morning. On the evening of the 8th the nurse perceived something come outside, and sent for the doctor. The latter pushed up the tumour within the vagina, and much bleeding and depression followed this procedure. The patient gradually recovered, and on the 22d of June proceeded to Inverness, intending to go daily to the Nairn Hotel for salt-water baths.

The bleeding came on so severely when she went to Inverness that she was led to consult a medical gentleman there. He examined the patient, and explained to her that she suffered from inversion of the womb, and at the same time advised a consultation with a medical brother. The result was a complete agreement as to the nature of the lesion. The patient was then placed under chloroform, and an attempt made for an hour on end to replace the uterus. As there seemed no improvement after this effort, the patient was advised by these gentlemen to come to Edinburgh and place herself under my care.

I saw the patient first at 8 Forres Street on the 14th of July 1880. I found the uterus completely inverted, the patient pale and

anæmic; but as there was some tenderness still present on the left side of the vagina—the result, apparently, of the manipulations in Inverness—I delayed active interference till the 19th.

I first adjusted Tait's repositors, which were well borne, but proved utterly useless as a means to facilitate reduction of the displacement. Tait's repositors were continued till the 1st of August, when most severe and alarming hæmorrhage set in, which threatened the life of the patient and greatly aggravated her already advanced anæmia. The hæmorrhage ultimately yielded to internal astringents.

On the 22d of August, after the parts had been prepared by air pessary, the patient was placed under the influence of ether and chloroform, and with the aid of Drs Underhill, Playfair, and Elder I proceeded to attempt forcible reposition of the organ.

Counter-pressure was made upon the abdomen by an assistant, whilst Dr Underhill and myself by turns endeavoured to push up the uterus through the stricture. After continuing our efforts for three and a half hours, we began to fear lest the patient should collapse, and desisted. We used the hands only. The vagina tore somewhat posteriorly at the inlet. The perineum remained intact. After the operation the profuse sero-sanguineous discharge stopped. The patient complained of very little pain, and there was no fever and no vomiting, and indeed our patient seemed all the better of the operative manipulations. On examination I found that for several days the body and fundus remained above the level of the external os uteri, thus showing that our attempts at reduction had produced a certain effect. Accordingly, though my first impulse after failure of so prolonged a *séance* was to amputate the uterus, I now changed my mind and resolved to make another attempt at replacement. Accordingly, on the 4th of September, with the assistance of Drs Underhill, Elder, and Turner—Dr Playfair having gone to the country in the interval—I again proceeded to the operation.

After Dr Underhill and myself had made several efforts at reduction with the hand alone, I took the repositor shown, and, using first the broad end and then the narrow, completed the re-inversion in a few minutes. On this occasion, from the commencement of administering the chloroform to the complete reposition of the uterus was only one and a half hours. The uterus, without any internal support, kept its place well, and on the 18th of September, when the patient left for her home in the country, it felt normal in situation, only slightly tender. The cervix was well contracted, except at the sides, where it gaped slightly as if somewhat notched.

I am now able to state further that the patient continued to improve, and that she expects to be confined in the middle of August next.

Turning from this extremely satisfactory record, we pass to

another which, though partially successful, is at the same time disappointing.

CASE II.—*Chronic Inversion of Five and a Half Years' Standing. Repeated Attempts at Reposition unsuccessful. Rupture of Posterior Wall of Cervix; Passage of Uterus into Peritoneal Cavity. Amputation of Uterus. Recovery.*

Mrs B., æt. 32, married, was admitted into Ward 28, Royal Infirmary, on the 4th of April 1881.

The patient complained of a falling-down of the womb, which frequently projected beyond the vulva, and, indeed, seldom was up for three days at a time, always reappearing on the slightest exertion. Besides this, the patient suffered from severe hæmorrhage from time to time, and from great pain and down-dragging, so that she was barely able to move about.

The patient was confined in the country some five and a half years ago. That delivery was followed by much bleeding, which lasted for three weeks. Convalescence was tedious and incomplete. Three or four months subsequently she found that on attempting to leave her bed the womb constantly protruded, and ever since she has continued in the condition mentioned on admission.

About nine months after her confinement she came under Dr J. Playfair's charge, and he asked me to see her with him. We on two occasions, at an interval of six or seven months, attempted forcible reduction under chloroform, but unsuccessfully. On both occasions we gave a long preliminary trial to the air pessary.

As the bleeding considerably abated after the second effort, and the patient improved in health, we did not deem ourselves warranted in strongly urging amputation, but contented ourselves with merely explaining the nature of the operation and its risks. As the patient then declined to submit to this suggestion, we lost sight of her till the end of last year, when we found her anæmic and suffering so much that she was willing to acquiesce in any procedure which promised her relief. Accordingly she was admitted, as above mentioned, into the private ward attached to Ward 28.

It may be stated that the patient on that occasion was noticed to be very anæmic, of short stature, stout build, with long bones thickened at their extremities; limbs somewhat bent, as if she had suffered from rickets in early life. Temperature normal, and other organs healthy.

On examination per vaginam the uterus was found absent from its proper place, and the vagina occupied by a soft pear-shaped structure, about  $2\frac{1}{2}$  inches long, which protruded through the outer os, but when the patient was lying in bed did not appear externally. This tumour bled very readily when touched, and manipulating it caused the patient considerable pain. The finger could be passed all round its base, between the upper end of the tumour and the cavity of the cervix uteri, to about the extent of

an inch; but by finger and sound it was demonstrated that all round the base of the tumour the open space between it and the cervix ended in a *cul-de-sac*. It was thus demonstrated that the tumour projecting into the vagina was the inverted body and fundus uteri, and also that the cervix, as happens usually in such cases, was not inverted, but continued in its normal position, only that it was very widely dilated. As the uterus was very soft and considerably swollen, we at first ordered quiet and then hot-water douche twice daily.

On the 20th of April the patient began to menstruate. The quantity was very profuse.

On the 5th of May menstruation ceased. The lower left angle of the uterus was noticed to be somewhat ulcerated. The douche was recommenced, which considerably reduced the bulk of the tumour.

On 9th May, the patient being anæsthetized with ether and chloroform, with assistance of Dr Underhill and other friends, I proceeded to attempt forcible reduction. This was persisted in for one and three-quarter hours, partly by means of the hand, partly by help of the repositor shown; but no change was effected on the tumour other than flattening of its base. It was especially noticed by me that whereas in Case I., after manipulating for a time, there was developed a tendency in the fundus, with deep pressure, to become slightly invaginated, in the present case no amount of pressure could produce an appreciable amount of invagination at the fundus. During this operation the left side of the vagina tore obliquely for about two inches. This was secured by three silver stitches, which were removed on the 18th of May, when the wound was found completely healed. The patient recovered well from this operation. There was considerable bleeding during the operation, but none after it.

On the 29th of May another effort was made to replace the uterus. After half an hour, whilst I was pressing up with the repositor, and Dr Underhill exerting counter-pressure on the abdomen, I felt as if the constriction slowly yielded and the uterus became re-inverted. There was no slip of the instrument, no sense of sudden giving way of parts, as in the case of rupture, so that I was so completely misled as to use the small end of the repositor to complete the operation after pushing up the uterus as far as the large end could carry it. To my great disappointment, I found on examining that the uterus had passed through a longitudinal tear in the back wall of the cervix, and was now, indeed, in the abdominal cavity. This fact was confirmed by Dr Underhill on examination.

I now proceeded to remove the uterus from its unfortunate position. This was no easy task; for though the aperture in the peritoneum had been large enough to admit of the uterus being slowly pushed through it, considerable resistance was offered by it

to the removal of the uterus back again through it. Fortunately no large portion of intestine came in the way, and after considerable difficulty I was able to fix the uterus in the grasp of one or two powerful volsellæ, and in that way bring it back into the vagina. That being accomplished, my first concern was to sew up the rent in the cervix and peritoneum. This was done by means of three twisted silver wire sutures, which were cut as short as was considered consistent with maintenance of their hold. The question now presented was, what could be done with the uterus? On trying to invert it with the aid of a finger passed through the lower part of the rent, we found its tissue was so friable that it tore up like wash-leather.

The tissue of the organ was further considerably lacerated by the application of the volsellæ. To leave the uterus dangling in the vagina in its lacerated condition seemed not unlikely to lead to gangrene of the parts, or at least to peritonitis. Besides, though these risks were not to supervene, the patient, in case of recovery, would have been quite as badly off as when she came in to us, and, moreover, had been subjected to two serious operations. It was idle to anticipate being ever able to replace the uterus, as we found that it was both too thick and too lacerable to admit of such. The only means by which complete relief of symptoms could be afforded was clearly amputation. This I resolved to perform at once. A wire ecraseur was passed round the tumour as near as possible at the junction of the cervix with the body, and the muscular tissue nearly all separated in that way; but before we had completed the separation the instrument broke. I was accordingly compelled to complete the amputation with scissors. I divided first the end of one broad ligament, and then another. In connexion with each of these a vessel was found nearly as large as the radial artery, so far as one could judge from feel and from the hæmorrhage. Knowing how difficult it is to secure such vessels by ordinary ligature in a muscular organ, and, besides, knowing that, owing to retraction of the separated broad ligaments, fatal bleeding into the peritoneal cavity had occurred from the Fallopian tube in a case recorded by Dr J. M. Duncan, I adopted a method of arresting the hæmorrhage which at the same time stopped bleeding from the tube and prevented the cut ends of the ligament retracting. This method was to pass a needle carrying a silver wire from the vaginal aspect of the inverted cervix to the peritoneal aspect and bring it back again in such a way as to include the vessel and the end of the Fallopian tube in the loop. This was now carefully twisted tight and cut rather short. The other Fallopian tube and its artery were treated in the same fashion, except that I used two wires instead of one, as I was not so well satisfied as in the other case, after I had tied the first, that I had effectually controlled the hæmorrhage. A drainage-tube was now passed through the cavity of the cervix and fixed in position by a

stitch passed through the left labium pudendæ, and the patient was put to rest after receiving a brandy enema.

There was positively no hæmorrhage. There was a little, but not much, tenderness complained of in the lower part of the abdomen, but no distention. The vagina and cavity of the cervix were carefully washed out with disinfectant solutions several times a day. The temperature ranged from 100° in the morning to 101° in the evening, with the exception of one occasion, when it went up to 105°. The discharge from the vagina was very slight.

On the 7th June the ward-book contains the statement that the temperature was normal. The tube was found loose on that day and was removed, as were also the three wire stitches which had been passed through the cervix to control the hæmorrhage. The stitches put into the peritoneal wound could not be felt.

The following is the note of her condition on 26th June:—The patient feels quite well. Her temperature continues normal. Examination per vaginam reveals the stump as a somewhat patulous os. Inversion of the cervix has not taken place. No intra-pelvic effusion can be felt. The line of the cicatrix in the peritoneal tear can be felt, but the most careful exploration cannot detect any sutures.

In further considering the subject it may be advantageous to refer briefly to the—1. Causation; 2. Symptoms; 3. Diagnosis; 4. Prognosis; and 5. Treatment of this lesion.

1. *Causation.*—It is usually an accident occurring at delivery, as in the two cases referred to. When this happens, as pointed out by Dr J. M. Duncan, there are at least four possible ways in which it may occur. Undoubtedly, in relation to its causation, the uterus may be passive, or it may be active; that is to say, the uterus may be in a condition of collapse, or may be actively contracted during the descent.

1st. The non-contracted uterus may tumble out of its own accord in obedience to gravitation or bearing-down effort. This forms what is called the spontaneous passive variety.

2d. The non-contracted uterus may be pulled out by nurse or doctor in the removal of the placenta, or in consequence of too short a cord, or otherwise. This constitutes the artificial passive variety.

3d. The uterus, all except the area on which the placenta is situated or a fibroid is attached, may be powerfully contracted, and thus the organ may turn itself outside in by a wave of contraction passing along its body. This forms the spontaneous active variety.

4th. The accoucheur or nurse, by traction on the placental area, may invaginate it and begin the inversion. The uterus, treating the inverted placental area and placenta as a foreign body, contracts firmly round its base; that wave passes rapidly over the whole

uterus until the whole organ is inverted. This forms the artificial active variety.

But, in addition to cases arising at term, a certain proportion of others follow abortion, whilst some originate in the unimpregnated condition through the influence of polypi or other tumours. With such cases, however, I have no personal acquaintance, and therefore do not stay to consider them.

2. *The Symptoms* of chronic inversion of the uterus are various. The principal are, profuse menorrhagia, pain, and down-dragging. When there is not a profuse discharge of blood, the patient is usually tormented with a sero-sanguineous discharge from the vagina which continuously saps her strength. As a result of the menorrhagia and leucorrhœa, the patient gradually becomes pale, anæmic, and weak, with a distinct tendency to œdema of the more dependent parts. Life is a burden, duty becomes a toil, and the woman, in short, is supremely miserable. In some cases the uterus comes to protrude outside the woman's body, and the irritation to it thereby occasioned adds greatly to her other misfortunes. In most cases, on the first oncome of the accident, there is much pain, alarming hæmorrhage, and shock. In the cases I record these symptoms, though not entirely, are certainly largely absent.

3. *Diagnosis*.—No careful gynæcologist would risk a diagnosis on symptoms alone. A physical examination is necessary. In this connexion it is important to point out, with all the emphasis one can summon, the danger of confounding this lesion with intra-uterine polypus. This has been frequently done, and by practitioners of wide experience and great ability. Indeed, I have never yet shown a case of inversion for the first time to any gentleman who did not think it must be a polypus. That being so, it is of importance to insist, "line upon line, precept upon precept," that this danger has to be feared and obviated. It is not difficult to establish a correct diagnosis; but it needs care and attention. The means of arriving at certainty have been again and again pointed out; still I must be pardoned for recapitulating them.

First, The vagina is occupied by a rounded or pear-shaped body about  $2\frac{1}{2}$  inches in length, which, when the patient is laid on her back, does not protrude beyond the vulva, but is completely contained within the vagina. This rounded or elongated body projects through the cervix, which is *widely dilated*, like an intra-uterine polypus. The tumour, when touched, bleeds very readily, and, I should point out also, is more or less sensitive when touched or pricked, whilst a polypus is not. Frequently manipulation produces contraction in the uterus, which makes it rounder and harder. Then the finger or sound can get to the reflexion of the body of the uterus from the upper end of the cervix all round, and find the way impeded by that reflexion, so that a sound can nowhere pass over an inch. If at any point the sound passes  $2\frac{1}{2}$  inches or

more, the conclusion is tolerably certain that we have got to deal with a polypus.

By double manipulation, with the aid of chloroform and of sound in the bladder if necessary, the uterus may be proved to be absent from its normal situation, as the finger in the posterior vaginal arch or in the rectum may be usually brought to meet that in the abdomen over the base of the tumour, bringing out in that way that the uterus is absent and that the upper part of the tumour is cup-shaped. If need be, this manœuvre may be aided by dragging down the uterus with the hand or with the assistance of a volsella, but the hand is usually sufficient for this purpose. When this is done it is easy to make out the cup-shaped upper part of the tumour and the absence of the uterus from its proper situation. The finger passed into the rectum now enters easily into the cup at the upper end of the tumour.

A good deal of the tendency to error in diagnosis as well as in treatment of this lesion depends upon the persistence of erroneous views as to the ordinary condition of the cervix and the site of stricture in regard to this lesion.

It is constantly *assumed* by the inexperienced in these matters that the cervix is inverted along with the rest of the uterus; and accordingly, when they find a gaping cervix surrounding the base of an ovoid tumour which occupies the upper part of the vagina and projects from the gaping cervix, they at once jump to the conclusion that this must be an intra-uterine polypus. Now, it ought to be known that the cervix uteri seldom or never partakes in the inversion of the organ. The body and fundus are inverted, but the inversion ceases at the inner os. The cervix maintains its normal position, is wide and patulous, so that there is seldom any difficulty in crowding the entire inverted body and fundus into its cavity so that the fundus is above the outer os.

The greatest difficulty is experienced in dilating that part of the body which would naturally have been immediately above the inner os, but which in this case is, of course, situated immediately below it. It is here that that stricture takes place, and it is here that the great difficulty of reposition is experienced. It is easy enough to invert the cervix by dragging down the uterus, when the whole organ becomes completely inverted; but when the uterus is pushed back, it is found that the cervix at once becomes reinverted.

It is lamentable to find how, even in the best and latest textbooks, such as Courty's, this old error in regard to the cervix is retained. At page 727 of the last edition of his *Traité Pratique des Maladies de l'utérus*, etc., Courty says, "Dans l'inversion complète et chronique, les vrais obstacles à la réduction sont, la contraction et la dureté du tissu utérin, la constriction et la rigidité du col, la mobilité de l'utérus, et surtout le défaut de fixité du col."



The true state of matters is ably pointed out by Dr J. M. Duncan in his paper on "Inversion of the Uterus," *Edinburgh Medical Journal*, page 769, March 1877. In all the cases observed by me, certainly there was no stricture in any part of the cervix, which was large and patulous throughout. The stricture was always experienced in that part of the body immediately beyond the cervix, and seemed due to the advance of the normal involution. All talk, therefore, of facilitating reduction by notching the cervix is wrong and misleading.

4. *Prognosis*.—The anticipation of health with chronic inversion is bad in the extreme. The patient is rendered sterile, she is unable to perform her conjugal duties, she is constantly tormented by down-bearing pains, is perpetually exposed to attacks of menorrhagia, which alternate with profuse thin sero-sanguineous discharges.

In the first of my two cases the hæmorrhage was so intense at the menstruation immediately before the operation that the patient must have succumbed to one or two similar attacks if she had not been relieved. The patient, before I saw her first, was reduced very greatly in strength through the resulting anæmia.

The second case was that of a more vigorous woman. The bleeding in her case was not so severe, yet sufficient to maintain her in a condition of great anæmia, and the pain and distress were so great as to make her anxious to submit to any proposal for relief of her sufferings. With the menopause relief from hæmorrhage comes usually, although, according to Courty,<sup>1</sup> not always.

A few cases of spontaneous reinversion of the uterus are recorded. One undoubted case is given by Spiegelberg (*Archiv für Gynäkologie*, Bd. v. S. 118), after it had been down three months. Several cases are contained in Crosse's great work. Others are mentioned by Meigs, Halch, Rendershaw, in which inversions which had lasted from a few hours to many months spontaneously rectified themselves. There is considerable looseness of statement in the cases, however, with the exception of that of Thatcher and Barre, which lead one to be very cautious in accepting the conclusions arrived at, although, from the nature of the case, they cannot be regarded as incredible. This result is, however, so extremely rare as to be entirely beyond consideration in the matter of prognosis.

It is strange that seldom or never any portion of bowel is met with in the cavity of the inverted uterus, and that adhesions between the opposing peritoneal surfaces are so uncommon. It will be noticed that notwithstanding the frequent attempts at reposition to which Mrs B.'s uterus was subjected, there was not a trace of adhesion between the opposing peritoneal surfaces, nor any trace of plastic lymph thrown out upon them. This is pointed

<sup>1</sup> *Loc. cit.*, p. 721.

out by Spiegelberg in the account of two cases of amputation by elastic ligature lately recorded by him. Even after this slow method of amputation the peritoneum remained free from inflammatory action. The fear of strangulation of intestine or the fear of injury to bowel in a case of amputation is, therefore, slight in the extreme.

The results that may be expected from treatment are, on the whole, good, but not nearly so good as some authors, such as Emmett, would lead us to expect. It is perfectly comical to notice this author in his work, pages 435-438, asserting magniloquently that no chronic inversion ought to be given up, when of four cases recorded by him he himself only managed to reduce one. It will be noticed that one was reduced by Dr Thomas, another by Dr Nöggerath, and a third he failed to reduce, and contented himself with sewing it into the cervical cavity and leaving it there.

I have examined the literature of attempted replacements of the inverted uterus with some care. I need not give the names, as that would lead us too far; but the cases are collected from all sources I could find. They include the practice of continental, American, and British gynæcologists, so far as one could gather from reports in journals.

The cases of chronic inversion so collected amount to 66 in number. Of these 66 cases 22 were failures,—that is, they either could not be reduced or the patients died a few hours or days subsequently to the reduction,—and 44 were successes. There were thus 33·3 per cent. of failures and 66·6 per cent. of successes.

I have purposely avoided saying anything regarding the results of acute inversion. That is no part of my present theme. It may be mentioned in passing that the immediate risks from shock, bleeding, gangrene, etc., are very great indeed, and lead, as pointed out by Crosse<sup>1</sup> and others, to a fearful mortality. Thus Crosse states that of 109 patients whose histories he was able to gather, afflicted with inversion, 72 died a few hours after delivery, 8 before the end of a week, and six within a month.

*Treatment.*—When we proceed to consider this head we encounter no end of proposals. But they are all capable of being grouped under two heads:—

1. Methods of replacement.
2. Methods of amputation.

For long it was deemed impossible to replace a chronically inverted uterus by any means, and such women as became victims of the accident at delivery and outlived its direct consequences without the uterus being immediately replaced were abandoned to their fate.

Dr White of Buffalo (*American Journal of Medical Sciences*, vol. xxxvi., 1858, page 13), by the record of his experience in a case in which the uterus had been down seven days, and another in

<sup>1</sup> *Transactions of the Prov. Med. and Surg. Association*, vol. xv. p. 340, 1847.

which the uterus had been down for five months, was perhaps the first to give a decided impulse in the direction of attempting the systematical reduction of the chronically inverted uterus. One or two others in Europe had succeeded in reducing chronic inversion before White, for Valentin (*Revue Médicale Chirurgicale*, 1847) records a case successfully reduced by him after sixteen months; Bassier of Lyons (*Archives Générales de Médecine*, 1852) another after eighteen months; and Canney of Bishop Auckland, England (*Medical Times*, vol. ii., 1852), one of five months; and it would appear that in America even White was preceded by Quackenbusch. Still the record of White's cases and method appears to have been the starting-point in this mode of treatment, and to have encouraged gynecologists to persist much more than they had been wont in efforts at forcible reduction in chronic cases.

Since that time numerous methods have been proposed for fixing the uterus and directing the force for reposition. Many of these methods scarcely deserve the name of special methods. The essentials of a good method are one that is safe, that gives proper support to the cervix and pelvic attachments of the uterus, and that tends to dilate the constricted part, viz., that portion of the uterine body abutting upon the inner os. The one hand of the operator in the vagina, pushing up the fundus, and the other hand steadying the cervix and endeavouring to dilate as far as possible the cup-shaped stricture formed by the base of the tumour, is perhaps the safest, if not also the most successful method. It needs perseverance and patience. An air pessary such as the one shown, introduced into the vagina, and then dilated and left there, is a good preparation, and makes the vagina roomy, thus facilitating the manipulations of the hand which is pressing up. The want of room compels it always to act at great mechanical disadvantage. Only a small amount of the operator's force is utilized. Besides, the hand is constantly getting cramped in its constrained position, which still further tends to impede progress. This plan was originated by Dr Tyler Smith, and in his case was successful in reducing a case of twelve years' standing. It has been also successful in some other cases, such as those of Teale,<sup>1</sup> West,<sup>2</sup> Backenthal,<sup>3</sup> Courty,<sup>4</sup> Schröder,<sup>5</sup> Grassi,<sup>6</sup> and A. C. Tyler.<sup>7</sup> But it is not without danger. In one case recorded by West it led to fatal peritonitis.

I tried it thoroughly in both the cases I have here recorded, and in another which I have as yet failed to reduce. But it had no appreciable effect as a repositor. Latterly I merely employed

<sup>1</sup> *Medical Times*, August 1859.

<sup>2</sup> Duncan and West, p. 228.

<sup>3</sup> *Zeitschrift für Geburtskunde*, Bd. xv. S. 313.

<sup>4</sup> *Annales de Gynecologie*, October 1878.

<sup>5</sup> *Berliner Klinische Wochenschrift*, 1868, No. 46.

<sup>6</sup> *Centralblatt für Gynäkologie*, 1877, No. 12. This case was only partially inverted, and ended fatally.

<sup>7</sup> *American Journal of Obstetrics*, p. 578, 1878.

it to give space in the vagina as a preparation for operation. It has one unfortunate peculiarity—the patients simply abhor it. One after another have told me they would submit to anything rather than the bag because the distress it occasioned was all but unbearable.

Courty lays much stress upon a method adopted by him in a successful case. This consisted in pulling the uterus well down outside the vulva, and getting the fingers hooked through the rectum into the cup-shaped hollow at its base. By this means he was able to maintain by the rectal hand good counter-extension, whilst the rectal finger favoured dilatation of the stricture. I have tried it often, and cannot see the advantage in it which its author claims. Nöggerath of New York made the suggestion of endeavouring to reinvert by indenting the uterus at the opening of one or other of the Fallopian tubes, where, according to the conical development of the muscular fibre, it might be expected to be more easily invaginated. It appears an excellent suggestion, and, so far as I can make out, is likely to be very valuable in cases immediately after delivery, but it would appear of little advantage in chronic cases. Cup-shaped repositors to aid in inversion are very numerous.

The one shown is as good as any other, I believe, but they all need care in their application. I completed the reduction of my first one with this instrument. It is simply a straight rod of wood, the ends of which are expanded into two cups of different sizes. The larger is intended to aid in the inversion until the fundus is about as high as the inner os, and the smaller one is meant to complete the operation, as it can pass through the inner os. It is not to be forgotten that such an instrument may be dangerous, even though we had not the record of my second case to enforce that lesson. White originally used a rectal bougie to aid in pushing up the fundus. A repositor with a cup-shaped extremity and a pelvic curve, successfully applied to the inverted organ by Dr Aveling by means of elastic pressure, is figured in volume xx., page 126, of *Transactions of the London Obstetrical Society*. Repositors have been made to be applied by pressure communicated from the operator's breast, with spiral stems, so as to avoid putting forth undue force.

The necessity for using first a larger and then a smaller cup has been attempted to be obviated by having a movable bottom in the repositor, which at the same time is provided with an apparatus for exerting counter-extension. This repositor is applied so that the fundus uteri is received into the cup, whilst the other end is applied to the upper end of the uterus, and then the larger cup is made by suitable mechanical screw arrangements to push up the fundus as far as it can. After that object is effected, while it maintains its position, the movable bottom is propelled onwards to complete the reduction. This certainly is an ingenious method,

and is the offspring of Dr Byrne of Brooklyn (*New York Medical Journal*, October 1878), but to any one who has had experience of such matters many practical difficulties as to application and otherwise suggest themselves. This instrument is reported as having been successful in two cases.

Mr Lawson Tait (*Obstetrical Journal*, vol. vi., p. 555) proposed a series of repositors, which I show you. His idea is a good one. It is to apply cups of successively diminishing size to the fundus uteri, in order to tire out the muscular resistance by small but continuous amounts of elastic pressure. I procured them, and tried them faithfully in two cases. You will notice that the cup of the stem is applied over the fundus uteri, that there are holes in the stems through which elastic bands can pass, and that these are attached before and behind to a belt passed round the woman's belly. They are easily applied, they are well borne, and they are theoretically correct. But practically, even where used with rubber bands much stronger than those which Mr Lawson Tait recommends, they are positively useless. In my experience they did no good, although I must in justice state, also, they did no harm. I was the more disappointed in this inasmuch as I undertook their application with high hopes, as the theory is so excellent. Mr Tait found his repositors successful in one case of ten weeks' standing. Dr Matthews Duncan, in one case, was bold enough to incise longitudinally the muscular tissues of the upper part of the body of the uterus, which is the part that gives, as I have already explained, the greatest resistance. This patient did well, and, to my knowledge, has since been delivered safely.

Dr Barnes,<sup>1</sup> apparently believing that he incised the cervix, records a successful case which was essentially the same, to my reading. It would appear that Dr Barnes began his incision in the muscular tissue of the cervix, but that as he attempted to invert the uterus the muscular tissue tore into the lower part of the body, and that he was thus successful. The same is true of the case of Dr Wilson, Greenock (*Lancet*, 23d June 1877).

I have thus drawn attention to the leading adjuncts to the forcible reposition of the uterus. I am fully persuaded that the best method of operating is:—

1st. To prepare the parts well with the air pessary, but not to continue that too long, on account of the danger of irritation it may set up, and the pain and distress it occasions. This may succeed alone—it has on many occasions.

2d. But if this method fails, after having the patient well anaesthetized, efforts should be made, prolonged and steady, by manual pressure from the vagina and counter-pressure from the abdomen, to reduce the organ. The counter-pressure may be made by an assistant, who may also endeavour to flatten out the cup by

<sup>1</sup> *Medico-Chirurgical Transactions*, vol. lii. p. 193.

pressing on the outer sides of it. The reducing pressure, it appears to me, should be made on the fundus, after it has been well squeezed, so as to force out as much as possible of the blood it contains, to reduce its bulk as far as possible. These efforts are to be prolonged until the uterus is reduced or until the patient's condition compels us to desist. It is perfectly astonishing how little reaction usually follows such an operation. If the uterus stretches and the fundus is easily indented, the case may be looked upon as favourable.

3*d*. A repositor may be used cautiously to complete the operation. It enables the operator to economize his force, as his hand cannot be applied advantageously in a mechanical point of view. But much care must be employed to avoid exerting too much force, and to make certain that the counter-pressure is perfect. Even under deep anæsthesia, counter-pressure is much more easily effected in some cases than in others.

In the second case recorded by me I cannot help feeling that too great force exerted through the repositor, with perhaps imperfect counter-pressure, may have led to the rupture. Still, the longitudinal direction of the tear being in line with, and not at right angles to, the direction of pressure, would rather indicate that the tear was due, partly at least, to a natural deficiency of tissue. But my second case bears the strongest evidence in support of the contention that all inversions are not capable of forcible reposition.

Any one who looks at the thickness of the chronically inflamed fundus and examines the friability of its tissues will, I feel assured, at once allow that no amount of force would have pushed this mass safely through the constricted body. In the act of reinversion it seems to me that the fundus must have torn asunder, even had we been able to pass it through the lower part of the body.

In those cases in which, after a fair amount of well-directed effort has been employed with hand or repositor or both, and the only result is flattening of the base of the tumour without appreciable ascent of it, I am of opinion that the operator is bound to consider very carefully how long he should continue in his efforts at forcible reduction.

*Amputation of the Uterus.*—In case of failure to replace inverted uterus, if the symptoms dependent upon the lesion are of a threatening character, the only means to secure permanent relief is amputation of the organ. This procedure doubtless mutilates the patient, and is in itself fraught with considerable risk. But we have to bear in mind that chronic inversion of the uterus, as a rule, gives rise to much annoyance, and it becomes a continual source of distress, whilst the accompanying hæmorrhage may at any time jeopardize the patient's existence. In those cases, however, which give rise to only a moderate amount of bleeding and little incon-

venience otherwise, it is not advisable to recommend amputation. Measures of a palliative nature should be employed, particularly rest at the periods, with ergot and astringent medicines, such as gallic acid. The leucorrhœa and uterine congestion are largely relieved by the hot douche. Iron in some form, as well as other tonics, are to be given between the periods.

The results of amputation are not so unsatisfactory as is usually held, however. At one time it was deemed an operation that could not be undertaken on any consideration. The record of reported cases does not show so specially bad statistics. Duncan and West, at p. 231, give a table of amputations of the uterus, of which 42 recovered, 15 died, whilst in two the operation had to be abandoned. This enumeration, as is evident from the accompanying bibliographical list, does not include a great many important recent cases, the bulk of which were successful. When those cases recently reported in the medical journals are added to the statistics of West and Duncan, we find 165 cases, of which 124 were successful and 41 ended fatally from amputation, giving a percentage of 24·8 failures.

The most imminent danger arises from the risk of the cervix becoming spontaneously reinverted. It will be recollected that I insisted in this paper that in ordinary circumstances the cervix uteri is not inverted in a case of chronic inversion of body and fundus. There is thus a marked tendency in this part to retain its natural position, even if the rest of the uterus is inverted.

At the moment of amputation the cervix is inverted along with the body and fundus as a result of the necessary downwards traction exerted upon the uterus to facilitate the operation. When the organ is amputated, the inverted cervix is at liberty to obey its own tendencies, and so is very apt to reinvert itself. But in so doing it carries with it the cut section into the abdominal cavity, and if that section is the site of any putrescent materials or sloughs, we are exceedingly apt to have peritonitis septica set up. It is important, then, if we cannot prevent reinversion of the stump, to take measures for draining its cavity, and also to adopt in amputation such a method as shall be least likely to carry septic matters into the peritoneal cavity.

But the next great danger is bleeding. That, I am satisfied, can be perfectly well guarded against with a little care in amputation. While I regard the *ecraseur* as sufficient for the arrest of the bleeding in the muscular wall, two arteries in relation to the two broad ligaments ought to be carefully secured, as also the ligaments themselves, by some such method as I adopted in my second case. I feel very strongly convinced that the use of the galvano-caustic wire or the Paquelin's cautery, or even the ligature, as they produce a great deal of dead tissue, add greatly to the risk of septic infection through inversion of the cervix, and that some modification of the knife and *ecraseur* will be found

ultimately the safest method of procedure. The danger of including a portion of intestine in the section is exceedingly slight, inasmuch as in cases of chronic inversion it is extremely rare to find any portion of the intestine in the cup of the uterus. I would therefore be inclined to recommend the use of the *ecraseur* down to the peritoneal coat. Then I should open the peritoneal sac and complete the amputation by scissors, taking care that the Fallopian tube is prevented from retracting, and the large vessels in relation to it prevented from bleeding, by firmly twisting a wire noose over it, as in my second case.

But many methods are used, and with varying success. M. Courty<sup>1</sup> and Spiegelberg<sup>2</sup> have both used the elastic ligature in two cases with success. The uterus falls off in the course of eight or ten days. M. Courty states also that one of his pupils successfully amputated a uterus by the same method. The galvanocautastic wire has also been used on various occasions. Spiegelberg, Veit, Nyrop<sup>3</sup> have each used this plan. In the case of the latter the patient nearly lost her life from pelvic suppuration. Courty, after trial of this method, expresses himself as averse to it. Good success has followed the *ecraseur* alone, especially in the hands of Drs Greenhalgh and Godson.<sup>4</sup> An ordinary stout ligature to transfix the stump and tie it in two halves has also been frequently employed. The stump is so thick that it is difficult to make certain that hæmorrhage shall be entirely absent, and, moreover, there is much tissue that is thereby killed, and great danger, therefore, of septic results in case the cervix becomes reinverted. Still we find some prefer one method, some another. The main points are, to avoid bleeding, to avoid entrance of putrescent matters into the peritoneum, and to disinfect thoroughly.

It is to be hoped that as we gain a better insight into the principles which regulate reposition of chronic inversion—and there must be some reason to explain why at one time a uterus is so easily reinverted compared with another—the necessity for amputation of the uterus will diminish more and more. It would almost appear from the history of repositions that the uterus passed through certain phases when it was very much more easily replaced than at other times. What these phases are, if they exist, and whether they have any relation to the menstrual period, is at present entirely unknown. Something must be discovered to explain how spontaneous reposition can occasionally occur in an organ that resists at another time the most vigorous efforts at forcible replacement. Then, again, we find a uterus that resisted hours of well-directed effort one day, next day replaceable by the gentlest manipulation. On other occasions the history of a chronic

<sup>1</sup> *Loc. cit.*, p. 738.

<sup>2</sup> *Archiv für Gynäkologie*, Bd. xvi. S. 233.

<sup>3</sup> *Centralblatt für Gynäkologie*, No. 13, 1877.

<sup>4</sup> *Transactions of London Obstetrical Society*, vol. xix. p. 51.



reposition shows that next to no resistance was offered by the organ to reposition. If we expect ever to be able to explain these points, we need the histories of every case carefully noted, and every point about them, however trivial, thoroughly encogitated. But this is work still in the future. In the meantime I bid good-bye to the subject, simply stating that in cases of uterine amputation satisfactory results can never be expected except the strictest measures are adopted to disinfect the vagina and stump, and to maintain free exit of any septic matter that may result from reinversion of the cervix.

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*Dr Hart* thought *Dr Macdonald* deserved the hearty thanks of the Fellows for his very valuable cases. He regretted exceedingly that Professor Simpson was unavoidably detained, as his experience would have been instructive. He himself had seen two cases in *Dr Simpson's* practice. In one the patient refused interference. In the second, at present under observation, all means had been tried fruitlessly. Gradual reposition had failed, forcible reposition had failed, and finally, an attempt to replace it by bimanual manipulation after abdominal section according to *Thomas's* plan had also proved unavailable. The complication in *Dr Macdonald's* second case was a very awkward one, and he thought *Dr Macdonald* deserved special praise for the way in which he met it, and without any special preparation or selected instruments performed the unexpected amputation of the uterus with a perfectly successful result.

*Dr Macdonald* thanked the Fellows for their reception of his paper. It was necessary to bring such cases up, as practitioners were apt to err in diagnosis. He remembered the first case of the kind he saw with *Dr Matthews Duncan*, and where he could hardly believe it was not a polypus he had to deal with. The fundus protruded through the cervix, and there was no stricture and no resistance. The fundus could easily be crowded into the cervix, but the difficulty was to reinvert it. No one, unless he had tried it, could have any idea of the difficulty and apparently hopeless nature of the task. One good point was the tolerance of the fundus to manipulation. In none of his cases had there occurred any metritic reaction. He was sorry that in his second case he had persisted so long in attempting reposition. After the ordinary efforts at replacement are honestly and fairly tried, it is a mistake to use force too long and too persistently.

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MEETING XIV.—JUNE 13, 1881.

*Dr Angus Macdonald*, *President, in the Chair.*

I. *Dr Barbour* showed, for Professor Simpson, some of the FLUID withdrawn from a cervical cyst of unusual size. The patient