REMARKS

ON

INVERSION OF THE UTERUS.*

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INVERSION of the uterus is of unfrequent occurrence, and probably for this reason the subject has not until recently attracted as much attention as its importance demands, for inversion of the uterus involves results of the greatest gravity, often endangering life itself; moreover, when it has become chronic, it has been looked on by the majority of writers as being almost an incurable affection, an opinion which recent experience proves to be erroneous. I have succeeded in replacing the fundus in a case in which the inversion had occurred many months previously; while in America great success has attended treatment similar in principle to that which I adopted, but of which I was ignorant at the date of my first operation.

No one would, I presume, hesitate for a moment to attempt the restitution of the inverted fundus to its original position, were inversion to occur immediately after delivery and the accident at once detected; but it appears to me that when it does occur at this time the accident is frequently overlooked; and I may here express my disbelief of the theory that pulling at the funis is the cause of inversion of the fundus. The funis breaks under a comparatively slight strain, and any force which it can sustain would be quite insufficient to invert the uterus, if it were healthy; some abnormal condition must therefore exist, without which no amount of pulling at the funis would suffice to induce inversion. The accident, then, seems to be only capable of occurring when, from some pre-existing cause, the muscular structure of the uterus at its fundus has become so unduly weakened that a cause which would otherwise have been powerless to effect any change in its shape is now sufficient to produce, first, depression, and subsequently complete inversion of the part. When inversion occurs as the sequence of the expulsion through the os uteri of a fibrous tumour, a similar weakening, or, according to Schroeder, atrophy, of the muscular structure of the uterine wall occurs; and the cases recorded as resulting from the presence of a tumour are numerous.

But, as I am anxious to discuss the subject solely in its practical bearings, I proceed at once to consider the treatment which should be adopted when inversion has been detected, and at what time reposition should be attempted with the best chance of success, if that treatment be decided on.

If the case occur immediately after delivery, the placenta should be at once detached and reposition immediately attempted; but it is otherwise if some days, possibly even hours, have elapsed since delivery; for then the operation becomes very difficult, not, as is usually supposed, from rigidity of the os and muscular structure of the uterus, but from the very reverse—namely, from the increased softness of the uterine walls. The process of involution of the uterus commences immediately after delivery, possibly, indeed, before expulsion of the fœtus, and in a healthy woman proceeds rapidly; one of the first results being increased softness of the uterine walls. The organ is, in fact, undergoing a species of fatty degeneration, which renders the handling of it dangerous. This was forcibly brought under my notice in the following case.

A healthy young woman was admitted into the Rotunda Auxiliary Hospital on the 5th of May last. She had, three months previously, been delivered, after a natural labour, of a healthy child. She was attended by a midwife; but, as far as could be ascertained, no violence or pulling at the funis had been practised. Inversion, however, occurred; and, after the lapse of a few days, she was admitted into the Sligo County Infirmary, under the care of my friend Dr. McDowell. He immediately attempted to effect reposition, but failing, sent the patient to me for treatment. When admitted, she was greatly exhausted, partly from the effects of the long journey, but still more from the constant hæmorrhage, which had continued ever since her confinement; and, as there was still a constant oozing, I decided to lose no time in effecting reposition, being the more anxious, as I was at that time under the impression that every day which elapsed would only increase the difficulty of doing so. Accordingly, on the day after her admission, she was brought under the influence of chloroform, and I proceeded to

attempt reposition of the fundus, adopting the method which I had successfully practised in a case sent to me from this city (Cork) not long before.

On introducing my hand into the vagina, I discovered that the inversion was so complete, that the lips of the os uteri were undistinguishable; but, on grasping the fundus and making pressure upwards, I speedily succeeded in pushing up part of the cervix, and I was then able to distinguish the rim of the os; this I seized with a vulsellum, with the view of gaining a point of resistance against my upward pressure; but the lip was so soft, that the vulsellum tore through it immediately. I now applied the end of my repositor to the fundus, but soon found that it sank into the uterine tissue. I therefore withdrew it, and tried to effect reposition by pressure on the fundus with the palm of my hand, while with my fingers I pushed up that part of the cervix which had passed last through the os; but, to my horror, my fingers sank so deeply into the wall of the uterus, which seemed as soft as dough, that I believe I must have reached the peritoneum. I at once desisted from any further attempt, and I feared that serious results would follow; the patient, however, did not suffer the least inconvenience. But I had learned a lesson—namely, that it is both difficult and dangerous to attempt the reposition of the fundus in an imperfectly involuted uterus, and I consequently decided to postpone all further attempts till that process was complete. I accordingly allowed five weeks to lapse, and in the interval I had made for me Dr. J. P. White's repositor, to which I shall allude by-and-by; and on my next attempt made use of it. I found it to answer very well; and, as the structure of the uterus had become much firmer, I soon succeeded in making the fundus to pass fairly within the os, but, failed, after a protracted attempt, to effect reposition of the inverted fundus. I therefore decided to close the os uteri by means of wire sutures. This I accordingly did, and thus, inclosing the inverted fundus, I hoped that the steady pressure thus exerted on it would have the effect of reducing the size of the inverted mass, and that reposition would subsequently be more easily effected. This practice is recommended by Dr. Emmet; though he prefers the operation of denuding the edges of the os uteri, and thus closing it permanently.

After the lapse of a fortnight, I made a third attempt, and then found, on removing the sutures, that the os uteri had so contracted since the last operation, that I could only get the fingers into it; the inverted fundus seemed smaller and firmer. Having seized the lip of the os uteri with a vulsellum, I proceeded to use pressure on the fundus with a White's repositor, but effected little if any good. The inverted portion had a very peculiar feel; its thickest portion was at the most depending part: here it was about the size of a pullet's egg; from this it narrowed considerably; and the mass felt exactly like an ordinary uterine polypus, with a pedicle rather thicker than usual. It was not, as one would have expected in dealing with an inverted uterus, wider at the base than at the apex, but the very reverse; and the cavity of the uterus was $2\frac{3}{4}$ inches in depth. I therefore felt much doubt as to whether I might not be dealing with a case in which inversion might be complicated by the presence of a small subperitoneal fibroid; the more so as I could not feel any dimple or depression on the surface of the uterus, such as had existed at the commencement of the operation. I believed that, were I dealing with simple inversion, the case was irreducible, and that I would not be justified in prolonging the attempt to effect reduction, which on this the third attempt had lasted an hour. Under these circumstances, I applied the *écraseur* just above the enlarged portion, and removed what proved to be the inverted fundus. The patient recovered rapidly; but, had it not been for the deceptive feel of the part, which led me to suppose that a tumour might possibly be present, I certainly should not have removed the part, but have adopted Emmet's plan of closing permanently the os uteri, leaving only a small opening to permit the escape of the menstrual fluid. He contends that, if this be done, no hæmorrhage will occur, and that, if necessary, the os can be at a future time opened.

At the time when this case came under my observation, I was quite unprepared for the difficulty and danger attending the attempt to effect reposition of an imperfectly involuted uterus. But my first attempt demonstrated this; for, as already stated, my fingers sank at once deeply into the uterine tissue. But since this occurred I have received from Professor White of Buffalo, U.S.A., a copy of his paper on Inversion of the Uterus, in which he fully confirms the opinion I have formed. On this point, he says: "Whilst undergoing this change (*i.e.*, involution), the uterus does not possess the firmness and elasticity of the unimpregnated uterus, nor the muscular flexibility and toughness of that at the full period of gestation. Indeed, I am induced to suspect that, at this period, the uterus cannot be subjected, without danger of laceration, to manipulation which would be perfectly safe at a later period, after complete involution has taken place." I was much gratified and encouraged at finding my opinion thus confirmed.

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The conclusion at which I have arrived, then, is this: that if, from any cause, reposition of the inverted uterus be not effected within twenty-four hours after delivery, it is better to delay the attempt for some weeks, till the involution of the organ is completed.

This opinion naturally leads me to the conclusion that mere lapse of time does not materially add to the difficulty of the operation; and this opinion is confirmed by the result of the following case, which has already been published.

S. M., aged 21, was admitted on August 27th into the Rotunda Hospital, on the recommendation of Dr. O'Sullivan of Cork, who had diagnosed, in the January preceding, the fact that the uterus was completely inverted, the inversion being due to the existence of a fibrous tumour which grew from the fundus. The inversion was complete, and there is reason to believe that it must have existed for quite a year prior to her admission. On August 29th, I enucleated the tumour; and, two months subsequently, I effected reposition with the aid of a very imperfect instrument. In this case, after the lapse of a year, or possibly much more, I effected reposition with little difficulty, having failed in the other case to do so, though but three months had elapsed from the date of her confinement when my first attempt was made.

Dr. J. P. White reports several cases of long standing successfully treated by him, and one in which inversion had existed for no less a period than twenty-two years. Clearly, then, time alone is not an important factor in such cases, and only is so where repeated attacks of peritonitis have occurred and dense adhesions formed.

The attempt at reduction being decided on, and the time fixed for the operation, it is next necessary to consider the treatment to be employed. Numerous methods have been suggested; but that advocated by Dr. White is, in my estimation, the best. In my first case, I effected reposition by the use of a very imperfect instrument. It was simply a stem about the thickness of that of a stethoscope, terminating in a cupped disc an inch and a quarter in diameter. But in my second case this instrument failed; and, while I was considering what modifications of it I should make to meet the difficulty, Dr. White's pamphlet, containing a diagram of his instrument, reached me, and I saw at once that it was exactly what I required. I had the instrument made, and found it most satisfactory. The following is his description of the instrument and of his operation.

"By means of the 'repositor', uniform and gentle pressure can be maintained until the os is fully dilated and the fundus pushed up through it. The insurmountable difficulty heretofore has been supposed to consist in our inability to maintain uniform and persistent pressure for a sufficient length of time. The hand would soon become fatigued, and another hand, even of the same individual, could not be substituted without losing a part of what had been gained. This loss is increased when the hand of a fellow-practitioner is introduced to continue the operation. The various substitutes which have heretofore been resorted to for continuing pressure when the operator has become exhausted have utterly failed. The elastic bags, so often called in requisition, press more upon the viscera resting upon the large surfaces anteriorly and posteriorly situated, than upon the fundus, which has no firm ossific base of support, as have the rectum and bladder. The uterus ascends very soon, owing to the yielding nature of the vagina and perineum, and escapes from the reach of the distended vaginal bags. By means of the large spring at the outer extremity, the amount of pressure can be graduated to an ounce. The disc of this instrument will follow up the fundus, without compressing painfully the urethra or rectum, by means of this continuous elastic pressure in the upward direction, until the fundus disappears in the os and neck. Any intelligent assistant can be trusted to increase or diminish the pressure during the absence of the operator, as the exigencies of the case may demand.

"The construction and action of the 'uterine repositor' will be readily understood by reference to the accompanying woodcuts, Figs. 1 and 2.

"The instrument is composed of a stem of wood or hard rubber, curved to conform to the vaginal curvature, with a coil of steel wire attached to the outer extremity, whilst the other end is expanded and hollowed so as to receive the fundus of the uterus in its concavity or disc. The edge of this disc is tipped with soft rubber, being an inch and three-eighths in diameter and about half an inch deep. The concave extremity of this instrument is carried up into the vagina and placed in contact with the fundus, and then firmly held by the hand in the vagina. The outer end of the instrument, or coil of wire, is placed against the breast of the operator on the same level with the uterus. By means of this large circular spring, the instrument readily keeps its place on the clothing of the operator, and leaves the other hand free to be used above the pubes to assist in fixing the uterus, and assist also in forcing open the dilating os, which can ordinarily be plainly felt through the abdominal walls.

"The spring at the outer end of the instrument enables the operator, without danger of lacerating the tissues, to keep up a constant gentle pressure upon the fundus, and by leaning forward to increase this pressure intermittently. The force thus exerted is applied more directly

Fig. 1.—*a*. Uterus in process of reduction. *b*. Anterior lip or wall of the uterus with the fingers of the left hand pressing upon it and assisting in pulling open the uterine cavity. *c*. Posterior uterine wall semi-reflected. *d*. Anterior vaginal wall. *e*. Wooden or hard rubber stem of repositor, its enlarged extremity held in contact with the fundus by the intravaginal hand of the operator. *f*. Distal extremity of stem made into a screw, so as to be fastened into *g*, a coil of No. 11 steel spring wire, requiring eight or ten pounds' pressure by the breast of the operator, against which it is placed, to bring it down.

Fig. 2.—*A*. Uterine extremity of stem *e*, which is terminated with a soft India-rubber disk $1\frac{3}{8}$ inches diameter.

upon the fundus by means of the repositor than would be possible if the thumb and fingers were used, or the round end of the large bougie. I have often been delighted, since I have used the repositor, to find that it gave me a third hand which did not become fatigued, and which permitted me to use the left hand in manipulating over the hypogastrium; while the right easily held the instrument in contact with the fundus, and firmly grasped that part of the uterus which was not yet reflected and which remained in the vagina. The disc, in which the fundus rests, is less likely to bruise or lacerate the organ than any other mechanical appliance. The intravaginal hand compresses the body and fundus, and lessens its vascularity; whilst something is gained by intermitting the pressure, also lessening by its use the exhaustion incident to unintermitting muscular effort on the part of the operator.

"It may be well to state that the patient is always placed at the side of the bed, with the feet resting in the laps of intelligent assistants, each of whom is also charged with the care of the knee and hand of that side. The hips of the patient are brought quite to the edge of the bed, which is raised so as to bring the parts on a level with the breast and arms of the operator."

I feel convinced, however, that the course I adopt of seizing the lip of the os uteri with the vulsellum, and with it fixing the organ as already described, is very important and greatly facilitates the reduction.

Doubtless, in a few cases, reposition will be impossible; but amputation should, if possible, be avoided; and I therefore think Dr. Emmet's suggestion, if the fundus can be pushed up sufficiently to permit its being enclosed inside the os, of paring the edges of the os and permanently closing it, is well worthy of being practised. It certainly is a proceeding much safer than amputating the fundus, and, as Dr. Emmet points out, does not absolutely render pregnancy impossible; for an opening must be left to permit the exit of the menstrual fluid, through which impregnation may possibly take place.

DAMAGES.—In a town in America, a man brought an action for injury by a defective highway. He said that in consequence the right shoulder and elbow-joints were painful and completely immovable: he had the arm lashed to the body, and the fore-arm supported across the body with the hand as high as the left axilla. He demanded four thousand dollars damages. Two surgeons, who were requested to examine the case, administered sulphuric ether, and found the joints perfectly movable, and apparently perfectly healthy. The claim was settled for seventy-five dollars, and the man was cured.