

The Modern Scope and Technique of Myomectomy.¹

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THE fact that fibroids are enucleatable tumours has been known ever since surgery applied itself to the uterus. In the early days of ovariectomy it sometimes happened that the surgeon exposed a tumour which was not a cyst but a fibroid, but so pedunculated that it could be treated in the same manner as a cyst, and from that to dealing with fibroids with broad pedicles and so to fibroids more or less embedded in the substance of the uterus were steps of natural sequence.

By the late '80's and the early '90's the operation of abdominal enucleation of fibroids had been taken up by certain surgeons, notably by Martin, of Berlin, and also by some British operators, but the mortality proved so high that by 1898 the operation had very nearly been abandoned, except in special cases, even by a man as brilliant and bold as Lawson Tait. The stumbling-blocks to success were difficulty in controlling the hæmorrhage and the liability to sepsis in the operation area. Moreover, it was at this time that the excellent results and still better prospects of hysterectomy, with intra-peritoneal treatment of the stump, were commencing to blaze up above the surgical horizon. In April 1898, however, Alexander, of Liverpool, the originator of the round ligament operation that bears his name, read a very remarkable paper at the Liverpool Medical Society, wherein he described a method of enucleating fibroids, the leading features of which were median laparotomy, a single anterior incision in the front of the uterus, packing of the cavity left after the enucleation with iodoform gauze, and ventral fixation. He cited six cases in which he had done this, the number of fibroids removed in the different cases ranging from one to as many as 25. The paper was reported in the *Medical Press and Circular*, and a perusal of the discussion which followed it shows it was not received with favour by the northern gynæcologists. Later in the same year he read a similar paper at a meeting of the British Gynæcological Society in London. He was then able to report 11 operations, with one death—a mortality of

1. Read at the Obstetrical Section Royal Society of Medicine.

9 per cent., which was not high, considering the high mortality of hysterectomy (from 12 per cent. to 30 per cent.) that then obtained. It is a remarkable paper even after the lapse of 24 years, and one sees clearly that here was a man possessed of the larger vision, who lived in advance of his time. The arguments he used in favour of conserving the uterus are as cogent to-day as then, while the operative technique of his procedure leaves not a great deal for the modern gynæcologist to improve upon. The paper was followed by a full-dress discussion, the reading of which is pathetic. One by one the gynæcological high priests of that day got up and figuratively stamped on him. Some had not grasped the fundamental idea of the operation, others criticized the mortality, others thought that a uterus from which many fibroids had been taken could be of no service even if the patient survived the operation, and some crushed him by citing adverse views of German authorities, a very good way at that time of demolishing one's opponent, as it always carried great weight, being considered to be a mark of erudition and professional capacity.

The outcome of that meeting was the figurative burial of myomectomy as far as being considered a classical operation was concerned. I do not know if Alexander subsequently continued to perform myomectomy or wrote any further paper on the subject; if he did I have not come across it, but I do know that the idea was so effectively killed that, although I went into gynæcology very shortly afterwards, I never heard his paper discussed, I never saw a reference to it, and I never saw anybody attempt to put his operation to the test of actual practice. And it is a fact that from then till now, considering the time—24 years—there have been extraordinarily few communications on the subject of myomectomy.

Arthur Giles read a paper in 1900 describing the removal through the abdomen of a submucous fibroid from a young woman, and suggested that in such cases the proper course was to preserve the uterus. Lockyer and Sampson Handley in 1903 reported a similar case, and various isolated cases of enucleation have been reported since then. Tuffier practised the operation in Paris and his cases were reported by Loubet in 1902. Tuffier, like Alexander, laid stress on the single incision on the front of the uterus, and had removed as many as 17 tumours at one operation, but his mortality was pretty high: he had four deaths in 30 cases. W. Mayo, in 1911, also wrote a paper on the myomectomies performed at the Mayo Clinic, 157 in number, with one death, but as they had done a very large number of hysterectomies during the same time it is obvious that the cases were selected, and whether they extended the operation to cases having many fibroids in the uterus is not recorded. Excepting for these papers there have been no reports

of work done in myomectomy that I can find from Alexander's time till now. Meantime the practice of hysterectomy has pursued its triumphant course, with a constantly improving technique, a steadily falling mortality, an increasing frequency of performance, and a very voluminous literature, which have their reflex in the popular idea—the layman's idea—that the possessor of fibroids must have her womb removed.

I feel very strongly against the removal of a woman's womb, and there are many reasons why we should prefer myomectomy unless there are imperative reasons for removing the uterus. Considering first the psychological aspect of the matter, there is no doubt that a woman of nice feelings does not like the idea of having her womb removed, and it is especially disliked by women who have not had any children. Comparing women who have fibroids, most of whom have had no children, with women suffering from uterine fibrosis, most of whom have had many of them, one finds that, as a rule, whereas the woman with fibrosis does not regret parting with her uterus, the woman with a fibroid does regret it. I take it that a woman who has had children feels that at any rate she has at least justified her existence on this earth, whereas the woman who has not had children may be without that consolation. Certainly it is the sterile woman who most resents the idea of having her uterus removed.

Many women object to hysterectomy because they think it will upset them from the sexual point of view, and there is no doubt that this is sometimes so. Sexuality is a very curious and complicated thing, and in some women it centres round the idea of procreation, and not merely round the idea of conjugation, and in a woman of that type, when she knows that pregnancy is no longer possible, the mainspring of the mechanism is lost. Again, many women think that if they have the uterus removed it necessarily means removal of the ovaries, and they have some reason for this, for it is a sorry fact that there are certain gynæcologists who, apparently, very frequently remove both ovaries with the uterus. Again, many patients think that the womb means the vagina, and that after hysterectomy they can no longer have relations with their husbands. It is all very well to say that this is mere ignorance and that the woman can be told that the operation does not prevent married life, and that it has no effect on the nervous system, but I doubt if all the teaching and all the preaching in the world will much alter traditional feminine opinion.

Some wives think that after removal of the womb their husbands will no longer be as fond of them, because they will not be whole, and there is some reason in this view. Sexuality in men is just as quaint and complex and variable as it is in women, and there are

some natures to whom the idea that their partner is not whole is repulsive.

The next point is the possibility of child-bearing. So long as a woman is under 43, there is the possibility of pregnancy if the uterus is conserved and the tubes and ovaries are healthy, and there is no doubt about it that pregnancy can occur safely and end happily after the enucleation of many fibroids from the uterus. One criticism advanced against Alexander was that the uterus could be of no possible use afterwards; but Giles has recently shown, from an exhaustive examination of his own figures, that out of 30 women under 45 years of age on whom he had performed myomectomy 14, or 28 per cent., subsequently conceived.

Lastly, among the reasons for saving the uterus, we have the probability that the uterus has an influence on the ovaries. From experimental work on animals—usually rabbits are chosen for it—it has been inferred that removal of the uterus does not influence the ovaries; but rabbits have no “change of life” or climacteric—they go on having little rabbits up to the time they die. A good many observers have stated that in women climacteric symptoms are undoubtedly hastened by removal of the uterus. My colleague Giles, who carefully studied the after-histories of all his cases of hysterectomy, stated that if you remove the uterus of a woman under 40 years of age, the symptoms of the climacteric, the distress and the flushings usually come on a year or two sooner than they normally would have occurred had the uterus not been removed. I have not followed my own cases in that thorough way, but I think that he is right, and that removal of the uterus does hasten the advent of the climacteric by two or three years.

RECORD OF 100 CASES.

I here record a series of 100 consecutive myomectomies I have performed to show that within wide limits neither the number or position of the tumours in the uterus, nor the presence of degeneration, nor the accompaniment of menorrhagia or pregnancy, are a bar to successful performance of the operation.

Number of Tumours.

I have analyzed the 100 operations according to the number of tumours removed at each operation; the figures are as follows (O=Operation; F=Fibroids removed):—

O.	F.	...	O.	F.	...	O.	F.	...	O.	F.
1	30	...	4	14	...	4	8	...	5	4
1	21	...	1	11	...	2	7	...	10	3
1	17	...	2	10	...	2	6	...	10	2
1	15	...	1	9	...	6	5	...	49	1

In counting the number of fibroids removed at each operation I have included those of every size down to those as small as a mustard seed—not with a view to magnifying the achievement, but because the removal of these small tumours, as well as the large ones, is the essence of the success of the operation; moreover, the removal of the seedlings is often much more difficult than the removal of the large tumours. One is only able to feel such small masses because the surrounding muscular capsule makes them much larger to the touch than they prove to be after enucleation. The largest number of fibroids that I have removed from a single case is 30, but I do not regard this figure as necessarily the limit. Of course, one occasionally meets with cases in which a very large number are contained in the uterus; Bland-Sutton recorded years ago one in which over 100 were present, and in such their removal without the uterus would be impossible, but I should certainly say that, given a suitable case, more than 30 could be successfully enucleated. It might be thought that after the removal of so many fibroids the uterus would be so hacked about as not to be worth conserving, but this is not so, as I shall proceed to show.

Position of Tumours.

The question of whether the tumour is sub-peritoneal, interstitial, or submucous is of little moment, but a sessile sub-peritoneal tumour, especially when large and of the superficial plaque variety, leaves a shallow bed not always easy to close satisfactorily. A submucous tumour usually means making a hole in the endometrium stretched over it, but this is not a serious matter. With an interstitial tumour, on the other hand, tearing of the endometrium should not occur, while the closing of the cavity is rendered easy by the thickness of the tissue that surrounds it. The position of the fibroid relative to the uterus as a whole is much more important. In the first place, anterior tumours are much more favourably placed than fundal tumours, and still more than posterior tumours, because they only involve making a straightforward anterior incision—the ideal position, for reasons I will refer to later. Fundal or posterior tumours, though in some cases they can be easily extracted through an anterior incision, require in other cases much more skill in order to avoid a stitched wound or stitch-holes on the posterior peritoneal surface of the uterus; sometimes, indeed, it is impossible to avoid them. Tumours growing laterally have the disadvantage that to get them out the uterine artery may need to be divided, but tumours growing in the broad ligament are enucleated easily. The least advantageously-placed tumours are those growing in the cervical portion of the uterus, because the elongation of the cervix they produce is difficult to deal with after removal of the

tumour. A posterior cervical fibroid of considerable size, fairly imbedded—especially if the capsule is very vascular—is the most difficult problem of all.

Degeneration.

Malignant degeneration and necrosis or suppuration due to sepsis are conditions which, of course, bar the operation, but, with one other exception, the fact that a fibroid is undergoing degeneration does not affect the question of its removal without the uterus. I have at various times enucleated fibroids undergoing "red," pseudo-mucinous, cystic, or calcareous degeneration. The most interest attaches to "red" degeneration, which has been considered by some as an infective condition on account of the pain and fever to which it often gives rise. I have enucleated red degenerate fibroids on six occasions; in each case the typical symptoms were present, and in five of them the symptoms supervened suddenly in association with pregnancy. All the patients recovered uneventfully after operation—which proves, I think, that in this form of degeneration the fever is due to absorption of a toxin formed, not by bacterial action, but by the breaking-down tissue. The remaining exception is nœvoid degeneration, in which a number of blood spaces are formed in the substance of the fibroid, whilst the capsule surrounding it is intensely vascularized, like the uterine wall in the region of the placental site, and the main vascular leashes of the uterus are immensely enlarged, especially the veins. The enucleation of such tumours—especially when they are large—is accompanied by such excessive bleeding that the operation at all times requires great consideration, and should certainly not be attempted when the fibroid is unfavourably placed.

Pregnancy.

Pedunculated fibroids, or fibroids superficially situated on the anterior wall of the uterus, and fibroids in the broad ligament, can be removed without great risk of disturbing a pregnancy, but the more deeply imbedded they are the greater is the risk of provoking uterine contractions; while to be able to carry out multiple myomectomy in the pregnant uterus with reasonable hope of saving the pregnancy is rare. Moreover, if deep enucleation is performed whilst the pregnancy is still *in situ* the bleeding from the cavity left is profuse and difficult to control, because the pregnancy prevents the uterine tissue retracting, and the passage of sutures sufficiently deep to approximate the walls of the cavity may be impossible, short of passing them through the whole thickness of the uterine wall and disturbing the pregnancy. On the other hand, the recently delivered uterus is peculiarly favourable for enucleation, because of the retractile state of the musculature.

The proper course, therefore, in these cases of deeply-seated tumours—as also in most of the cases of multiple tumours—is to treat the pregnancy as an additional tumour, remove it by Cæsarean section, and then utilize the uterine incision to remove the fibroids, or as many as possible, through it. For even if the child be not viable, it is better to ensure a good recovery from the operation, so that the patient may be placed in the best possible state for future pregnancy, than to take the risk of post-operative hæmorrhage or post-operative miscarriage, either of which may endanger smooth convalescence and leave the parts in a state in which future pregnancy is unlikely or impossible. In my series of cases 11 of the patients were pregnant, and in five of these the removal of fibroids, totalling 14, five, five, five, and one, was preceded by the removal of a living viable child, whilst of the remainder five had removed, respectively, 30 fibroids and a three months' pregnancy, 21 fibroids and a three months' pregnancy, 14 fibroids and a three months' pregnancy, 10 fibroids and a four months' pregnancy, and one fibroid and a two months' pregnancy, and one had three fibroids removed and the pregnancy successfully left *in situ*.

Accompanying Menorrhagia.

Patients suffering from profound anæmia due to fibroids should not be treated by myomectomy, because in them the continuance of even normal periods is undesirable, so much is their blood content depleted and their blood-forming mechanism enfeebled. Moderate menorrhagic anæmia, however, does not contra-indicate myomectomy, provided the operation is carried out so that all the tumours are removed and that the uterus left behind is not too big for the involution that occurs after myomectomy (as after childbirth) to restore it to normality. One of the risks urged against myomectomy is that of menorrhagia continuing after the operation, but when this occurs I believe it is nearly always due to the surgeon's failure to achieve these two desiderata; for though a diffuse fibrotic state of the uterine musculature may co-exist with fibroids, experience shows it to be rare; on the contrary, the uterine muscle is nearly always conspicuously healthy and well-developed. This is probably partly owing to the fact that patients with fibroids have had few, and oftener no children, and that many of them are unmarried, so that they have commonly escaped the factors making for fibrotic degeneration; but beyond this I think that fibroids, like pregnancy, stimulate the growth of new and healthy muscle in the uterine wall.

In all cases of fibroids with menorrhagia in which myomectomy is performed the uterine cavity should be opened in order to make certain that no small fibroid on the mucous surface, or mucous

polypus, or great thickening of the endometrium is missed. Mucous polypi are very common with fibroids, and owing to their soft consistence they cannot be palpated through the uterine wall as a fibroid can, whilst a thickened endometrium must be seen to be discovered. For the scraping away of thickened endometrium through an incision in the uterine wall I have found the steel "finger nail" formerly used for the removal of adenoids very efficacious.

RESULTS OF OPERATION.

Risk.

I had two deaths in my series, a mortality of 2 per cent. The mortality rate of hysterectomy for fibroids at Chelsea Hospital for Women for the years 1905—1918 inclusive was 1.5 per cent., whilst many individual accomplishments of 100 hysterectomies without a death are on record. In comparing the risks of the two operations, however, I should like to emphasize that neither of the deaths in my series ought to have occurred. The first patient was a woman little over 30 years of age, who had a single anterior interstitial fibroid which enlarged the uterus to the size of a seven months' pregnancy. I enucleated it through an anterior incision, cut away the excess of uterine tissue which covered it, and sutured and ventrally fixed the uterus without incident, except that the capsule was very vascular. I was called to see her five days later, on account of symptoms of intestinal obstruction, the patient being very ill. On re-opening the abdomen I found it full of blood which had leaked from one of the suture holes of a main mattress suture. Death in this case was due to the overlooking of a hæmorrhage too slow to present the ordinary symptoms of internal bleeding. Had it been recognized and dealt with in time the patient would not have died. The second patient also had a very large interstitial fibroid, together with a two months' gestation, the combined mass being as large as an eight months' pregnancy. The fibroid was nævoid, and unfortunately I did not temporarily clamp both uterine arteries as well as both ovarian arteries, as I should do now. The result was excessive bleeding, which hurried me whilst removing the pregnancy and fibroid. The uterine wall after the enucleation was very redundant, and I did not cut it sufficiently freely away, so that the suturing took much longer than it should have done; when I had finished it I still had an organ much too big—which, however, I returned to the abdomen, as the patient by this time had a very rapid pulse-rate. She died of shock. I record these two mistakes to help those who may have to deal with similar cases.

The chief risk of an extensive myomectomy is hæmorrhage during and after the operation. It can be guarded against by temporarily securing the main vessels going to the uterus; by

properly placing the sutures, and by cutting away sufficient tissue to leave an organ of manageable size to suture up. It must also be borne in mind that when hæmorrhage does occur after the operation it is in the nature of a slow dribble or ooze which produces not the classical symptoms of internal hæmorrhage but rather those of peritonitis or intestinal obstruction. Had I again to perform these two operations, knowing what I now know by unfortunate experience, the results would be different.

Ultimate Results.

I have not investigated the after-history of my cases of myomectomy with the thoroughness with which my colleague, Arthur Giles, has followed up the after-histories of his, but I have been in touch with most of the patients, either directly or through their medical men, and I have not had one bad report. In no case that I know of have further fibroids appeared, nor have any of the patients been sent back to me on account of continuance or reappearance of menorrhagia. It may be suggested that such happenings have occurred, but that the patients, disgusted at not being cured, have gone elsewhere. I do not think so, because a large proportion of the patients in this series were cases operated on privately, mostly for old clients of mine from whom I should have heard quickly enough about my failures; on the contrary, the reports have been uniformly satisfactory, and broadly comparing the outcome of my myomectomies with the outcome of hysterectomies as far as either have been brought to my notice, I affirm that the former operation has been at least as satisfactory as the latter. On three occasions I have had the opportunity of viewing through an abdominal incision a uterus from which I had removed multiple fibroids some years previously. In one case I had removed seven fibroids, and in the other two five fibroids each, and in all the uterus appeared normal.

As regards pregnancy, five patients to my knowledge have had, and others may have had, a child since the operation. Of these, one had 14, another eight, and another five fibroids removed, and two had one fibroid each removed. All had successful deliveries by the normal passage except the patient with five fibroids, and her I delivered by Cæsarean section, partly at her own desire and partly (it was one of my early cases) because I was not certain how the uterine scar would stand the strain of labour. I found, however, that the uterus was normal, nor could I see a trace of my former operation, and there is no doubt she could have delivered herself.

TECHNIQUE OF THE OPERATION.

In myomectomy asepsis is very important, especially when many tumours have to be removed, for in such cases the collective

area of the cavities left by the enucleation amounts to that of a large wound and the quantity of suture material is considerable. The uterus delivered through the abdominal wound should therefore be protected from contact with the skin by rubber sheeting and towels, and the vagina should be sterilized as far as possible by a strong antiseptic. I use violet green for this. For suture material I use both silk and catgut, silk for the deep mattress sutures, taking much tension, and catgut for the superficial sutures.

Hæmostasis is as important as asepsis in these operations, and it is essential to see that the incision or incisions in the uterus are well closed. The method I commonly employ is the same as that I use for Cæsarean section; a layer of deep mattress sutures of silk, a superficial continuous suture of catgut, and between them often, but not always, a layer of interrupted or continuous catgut mattress suturing. A well sewn-up uterine incision should show a slight degree of blanching of the tissues superficial to the deep mattress suture.

Incision.

As regards the position of the incision in the uterus, Alexander enunciated the correct principle 24 years ago—*i.e.*, a single anterior incision and extraction of all the tumours through that one incision. An anterior incision has these great advantages: if post-operative bleeding occurs the blood accumulates in the utero-vesical space, and intestine is least likely to adhere in consequence of it; if the operator doubts that the incision is blood-tight he can suture it to the anterior abdominal wall or the back of the bladder and render it safe. The advantages of a single incision are manifest; it reduces the area of possible blood leakage and intestinal adhesion to a minimum, and these are the two principal risks to be guarded against. When Alexander stated that it was possible to remove many tumours through a single anterior incision, even if some of them were situated in the posterior wall, his assertion was received with scepticism, but it is quite true as a rule.

The fibroid most easily accessible through an anterior incision should be first attacked, and the incision should be carried right into the substance of the tumour so that there is no difficulty in finding the plane of cleavage between tumour and capsule. The fibroid having been enucleated the next most accessible should be reached by a secondary incision starting in the wall of the cavity left by the first tumour (figs. 1 and 2.) The scalpel should be boldly thrust down to the tumour and the finger should then be thrust down the same track till the fibroid is reached, when the plane of cleavage can be sought for. Very often the tumour can be entirely freed before a volsellum is passed down to pull it out (figs. 3 and 4).

Fibroids are often quite movable in the uterine wall, and can be manipulated by the fingers of the left hand to a position convenient for making a track down to them. In this way tumours of the posterior wall can be reached by a track which skirts round the uterine cavity but does not open it (fig. 4). It might be thought that serious bleeding would often occur from the walls of these tracks, but it does not, unless in the making of a very lateral track the uterine artery be wounded. In such an event the bleeding can quite easily be controlled by putting a couple of ligatures round the artery above and below the track in the same manner as the artery can be ligatured before the amputation in hysterectomy.

Some posterior fibroids are best got out through the cavity of the uterus (fig 5). There is no objection to opening the cavity of the uterus; indeed, as I have stated, it should always be done when menorrhagia is a symptom. It is most important to search the uterus thoroughly so as to be sure at the conclusion of the operation that no fibroids have been missed. The organ should be palpated very carefully between the finger and thumb, one of which should be inserted into the enucleation cavity, or into the uterine cavity if this has been opened, so as to reduce the thickness of tissue palpated. As I have said, fibroids as small as a mustard seed can easily be felt, on account of the apparent enlargement that the capsule produces. It may be argued that, even if all the fibroids be removed, there is nothing to prevent fresh ones being formed. The possibility cannot be denied, but in practice it does not occur, and my experience leads me to believe that as a rule the seeds of all the fibroids a woman is going to have are formed by the time she is 35 years of age.

Suture.

Not the least interesting part of myomectomy is that the suturing of the enucleation-cavities exercises the ingenuity of the surgeon. When all the cavities are in the anterior wall the standard arrangement of mattress and superficial sutures, as for closing a Cæsarean incision (figs. 6 and 7), can usually be made to fulfil the purpose, though even here there are exceptions (fig. 8). When, however, a posterior tumour has been removed through an anterior incision the mattress suture may be inserted from the back of the uterus, guided by a finger passed into the cavity through the anterior incision (fig. 9). This is not quite so satisfactory as sutures passed anteriorly, because the suture holes lie, and the sutures are tied, on the back of the uterus (fig. 10). In cases in which the cavity to be closed, though posterior, lies laterally, the sutures may be passed from before backwards outside the cavity of the uterus and tied on the side of the uterus, constricting the uterine artery with no disadvantage. When a posterior tumour

has been removed "transcavity" the sutures can be passed from the uterine cavity, but in this case catgut should be used and not silk, as the knots will lie in the uterine cavity (fig. 11).

After the enucleation of a tumour which approaches the peritoneal surface the wall of the cavity left may be very thin at the pole where the tumour approached the peritoneum (fig. 12). In this event the thin wall should be invaginated by a circular purse-string suture or several rows of such sutures, and posterior mattress sutures may be inserted in addition if this appears necessary (figs. 13 and 14). A common position for fibroids to occupy is the fundus or the posterior wall just below the fundus, and they should be dealt with in the following way: A transverse incision is made in the anterior wall high up, opening or not opening the uterine cavity, as the operator thinks fit. A secondary track down to the fibroid is then made in the plane of the peritoneal surface of the fundus (fig. 15), and this having been enlarged by the finger, the tumour is enucleated (fig. 16). It will now be found possible to pull that part of the uterine wall that covered the tumour over the top of the uterus like a monk's hood and fix it by a series of mattress sutures so that the line of the incision now lies transversely across the anterior wall, much lower down than the original incision (figs. 17 and 18). All posterior fibroids cannot be got out through an anterior incision, and even with some capable of being so removed the posterior wall may be torn in the process, in which event the hole should be closed by a purse-string suture. Some posterior fibroids are too large or too closely blended with the peritoneum to be enucleated from in front; in such cases the surgeon has no choice but to incise the posterior wall. It will then probably be necessary to reinforce or cover the suture line by one of the artifices presently described.

Redundant Tissue.

One of the greatest difficulties in myomectomy is the fact that with large submucous or interstitial tumours the uterus is so hypertrophied over the tumour that an immense organ is left after the tumour is removed; indeed, when the tumours are multiple, and this hypertrophy very marked, the case may be unsuitable for the operation altogether. The uterus involutes after the removal of a fibroid, as after labour, but to return to the abdomen an enormously bulky organ is to invite hæmorrhage or intestinal obstruction. In such cases, therefore, the excess of uterine tissue should be cut away, and I find that the tendency is not to do this boldly enough. The cut edges should be "bevelled" inwards to facilitate apposition in suturing.

I have spoken of the advantage of being able to fasten the wound in the uterus to the abdominal wall, and I often conclude

the operation in that way, never myself having seen any serious ill-results from ventral fixation, but there are other things one can do to guard against post-operative oozing. Thus the round ligaments can be shortened so as very fully to antevert the uterus against the bladder, or the septum method of ventral suspension, so popular in Liverpool, may be employed.

Occasionally one is obliged to prolong an anterior incision over the fundus and down the back wall, and in such cases I modify ventral fixation in this way. The front of the uterus is attached to the aponeurosis and peritoneum of the abdominal wall by silk sutures in the usual way; then above this area of fixation the parietal peritoneum alone is attached to that part of the uterine incision that extends down the posterior wall by a continuous catgut suture, the peritoneum being displaced from off the abdominal wall to allow of its coming down to the uterus. By this means I avoid the danger of posterior fixation, an operation which very rightly has been abandoned as dangerous. Incisions low down on the posterior wall cannot be so treated, but if laterally placed the ovary or the posterior part of the broad ligament can be swung inwards and sutured to cover them. If this cannot be done a very good plan is deliberately to attach the front of the pelvic colon to the line of the incision by catgut sutures, taking care that the bowel runs down to the rectum without a kink. A planned adhesion of the colon does not matter, but a chance adhesion of a coil of ileum is quite another matter.

Hæmorrhage.

Finally, in the matter of hæmorrhage during operation I nearly always begin by putting a ring forceps on the ovario-pelvic ligament on each side so as to control the ovarian vessels. If the operation is likely to prove a difficult one, or if there is great vascularity, I also temporarily clamp the uterine artery on both sides. This is conveniently done by passing one blade of the forceps through a hole in the mesosalpinx so as to avoid injuring the tube. In difficult cases, however, it is best to divide the round ligaments, turn back the peritoneum, and deliberately seek for and ligature the uterine vessels before beginning the enucleation; indeed, all four main vessels of the uterus may be safely ligatured without the slightest fear of gangrene.

These are the main points in the technique of the operation as I have performed it—no doubt many here have practised the same artifices and devised others which have not occurred to me. Myomectomy is essentially an operation which calls for ingenuity. Many of us, I know, have been unofficially (if I may use the term) extending the scope of myomectomy for some years past. The time is ripe for official recognition of that extended scope. There

has been too much hysterectomy, and the public has come to believe that if a woman has a fibroid surgical opinion is in favour of doing what in vulgar parlance is called "taking all her inside out"; hence the retrograde revival of oöphorectomy for fibroids—"bloodless" oöphorectomy by X-rays, but oöphorectomy just the same. I hope that in future it will be common knowledge that fibroids do not as a rule necessitate hysterectomy, and that if the possessors of fibroids will only submit themselves to early surgical treatment the womb need never be removed.

DESCRIPTION OF FIGURES.

Fig. 1. Diagrammatic cross-section of a uterus containing three fibroids. A=anterior surface; P=posterior surface.

Fig. 2. The anterior fibroid has been enucleated through an anterior incision and the lateral fibroid is being enucleated through a secondary incision.

Fig. 3. The posterior fibroid is being attacked, the scalpel being passed down to it through the cavities left by the two previous enucleations. The index finger of the operator's left hand is pushing the fibroid laterally to make it more accessible.

Fig. 4. The posterior fibroid is being pulled out by a volsellum. The operator's left index finger is assisting the manœuvre by pushing it in the desired direction.

Fig. 5. A posterior fibroid being enucleated "transcavity."

Fig. 6. The standard arrangement of sutures for the anterior incision.

Fig. 7. A lateral enucleation-cavity being included in a standard mattress suture.

Fig. 8. A lateral enucleation-cavity with a mattress suture closing it passed from an anterior enucleation cavity.

Fig. 9. A posterior enucleation-cavity closed by mattress sutures passed from the back of the uterus.

Fig. 10. The posterior mattress sutures tied and throwing up a ridge on the back of the uterus.

Fig. 11. A posterior enucleation-cavity closed by catgut sutures passed from and tied in the cavity of the uterus.

Fig. 12. A posterior enucleation-cavity closely approaching the peritoneal surface.

Fig. 13. A purse-string suture inserted to invaginate the thin tissue that separates a posterior enucleation-cavity from the abdominal cavity.

Fig. 14. A posterior enucleation-cavity invaginated by a purse-string suture and additionally closed by mattress sutures inserted posteriorly.

Fig. 15. A fibroid in the upper part of the posterior wall of the uterus reached by a secondary incision starting from a primary transverse incision on the front of the uterus.

Fig. 16. The loose "hood" of uterine tissue left after the enucleation. The letters mark the points to be brought into apposition by mattress sutures passed from A, B and C on the front of the uterus to A, B and C on the "hood."

Fig. 17. The "hood" pulled forwards.

Fig. 18. The "hood" sutured by mattress sutures A, A, A, and B, B, B, and a continuous suture C, C, C.

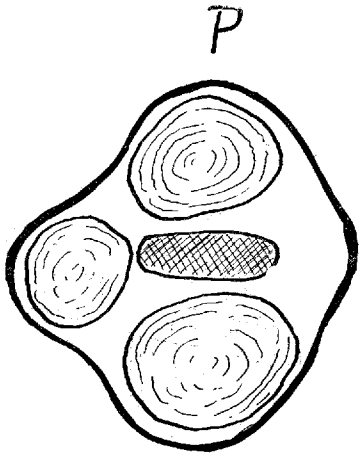


Fig. 1.

A

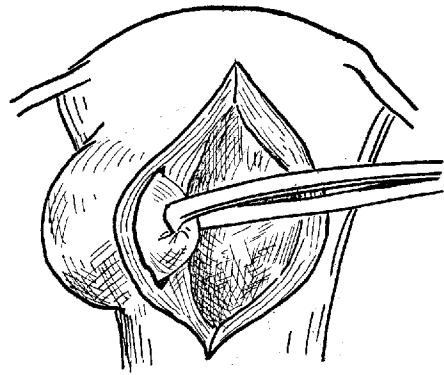


Fig. 2.

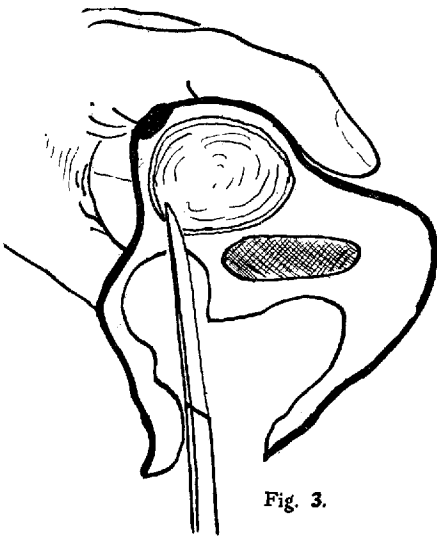


Fig. 3.

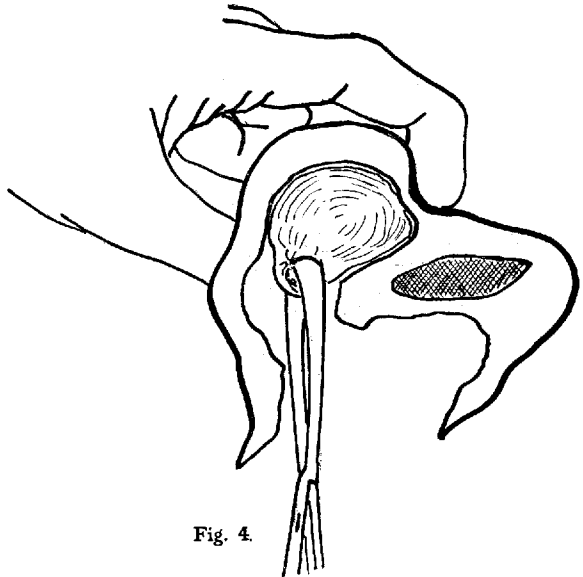


Fig. 4.

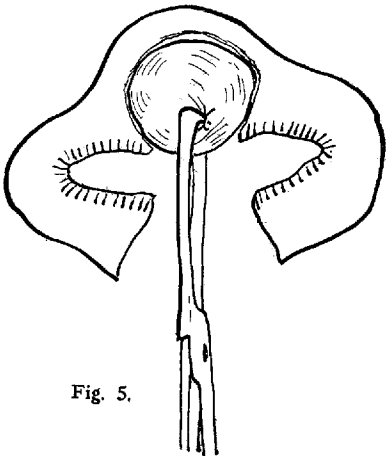


Fig. 5.

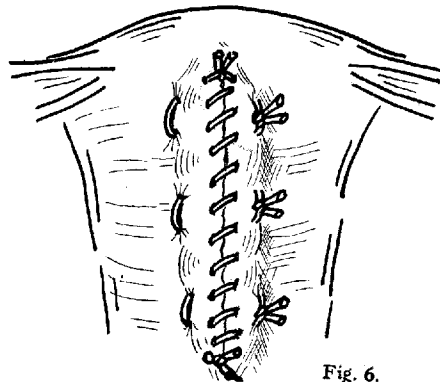


Fig. 6.

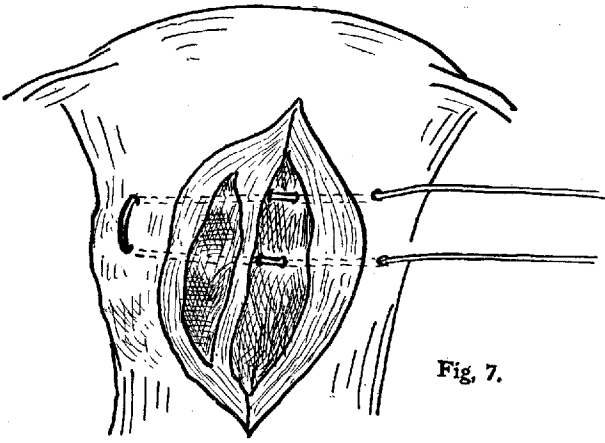


Fig. 7.

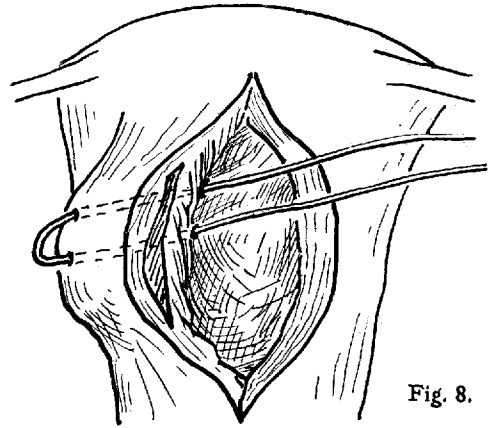


Fig. 8.

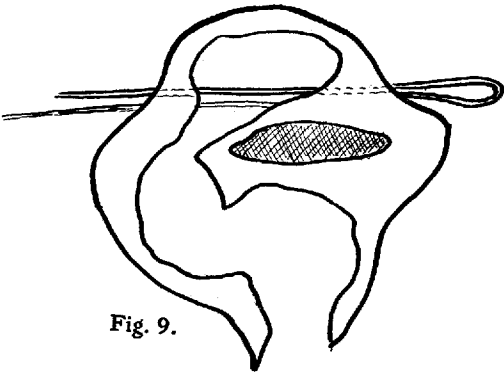


Fig. 9.

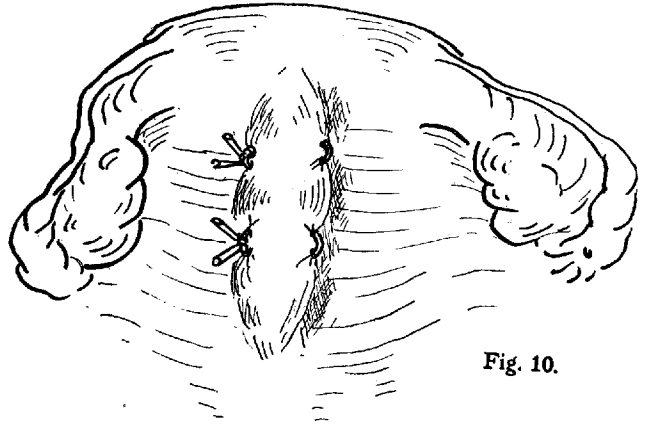


Fig. 10.

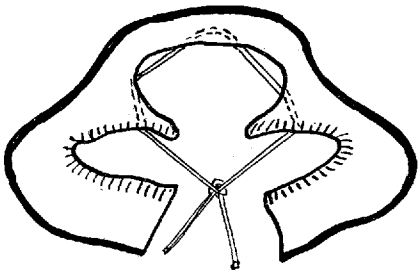


Fig. 11.

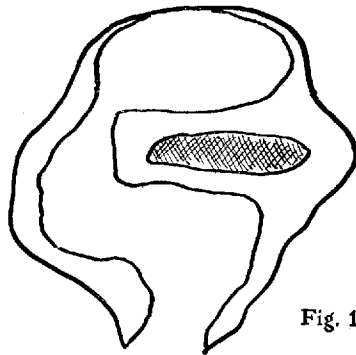


Fig. 12.

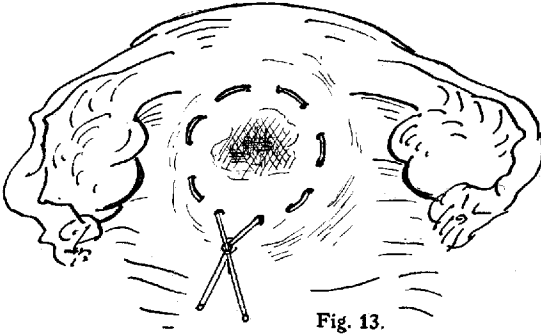


Fig. 13.

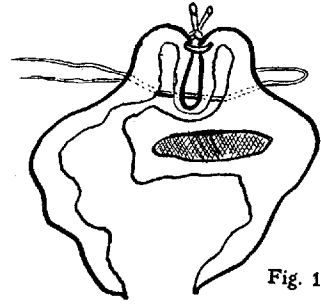


Fig. 14.

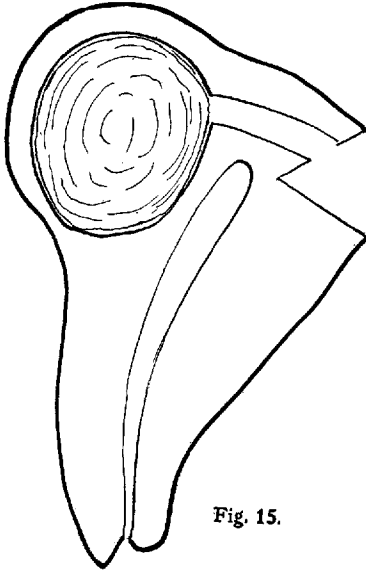


Fig. 15.

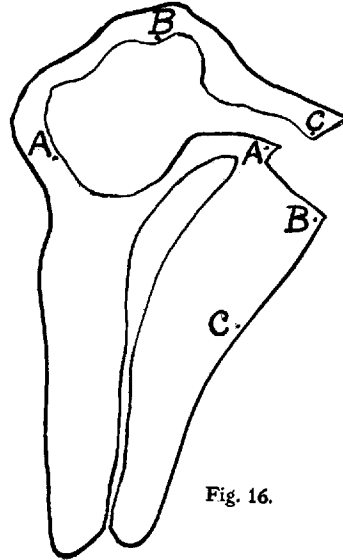


Fig. 16.

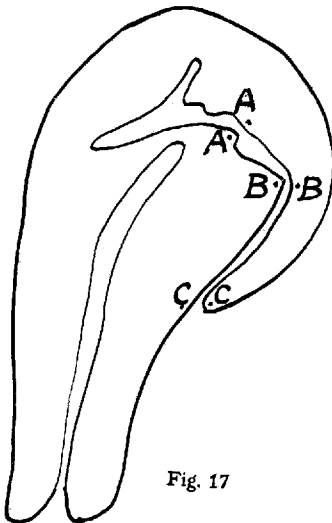


Fig. 17.

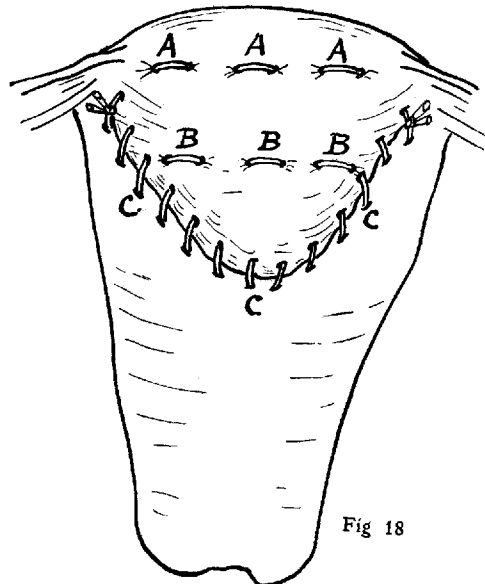


Fig 18