Technical and Bibliographic Notes/Notes techniques et bibliographiques

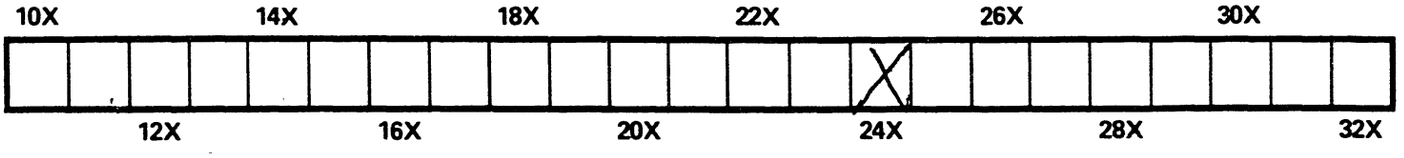
The Institute has attempted to obtain the best original copy available for filming. Features of this copy which may be bibliographically unique, which may alter any of the images in the reproduction, or which may significantly change the usual method of filming, are checked below.

L'Institut a microfilmé le meilleur exemplaire qu'il lui a été possible de se procurer. Les détails de cet exemplaire qui sont peut-être uniques du point de vue bibliographique, qui peuvent modifier une image reproduite, ou qui peuvent exiger une modification dans la méthode normale de filmage sont indiqués ci-dessous.

- ☐ Coloured covers/ Couverture de couleur
- ☐ Covers damaged/ Couverture endommagée
- ☐ Covers restored and/or laminated/ Couverture restaurée et/ou pelliculée
- ☒ Cover title missing/ Le titre de couverture manque
- ☐ Coloured maps/ Cartes géographiques en couleur
- ☐ Coloured ink (i.e. other than blue or black)/ Encre de couleur (i.e. autre que bleue ou noire)
- ☐ Coloured plates and/or illustrations/ Planches et/ou illustrations en couleur
- ☒ Bound with other material/ Relié avec d'autres documents
- ☐ Tight binding may cause shadows or distortion along interior margin/ La reliure serrée peut causer de l'ombre ou de la distortion le long de la marge intérieure
- ☐ Blank leaves added during restoration may appear within the text. Whenever possible, these have been omitted from filming/ Il se peut que certaines pages blanches ajoutées lors d'une restauration apparaissent dans le texte, mais, lorsque ceia était possible, ces pages n'ont pas été filmées.
- ☐ Additional comments:/ Commentaires supplémentaires:

- ☐ Coloured pages/ Pages de couleur
- ☐ Pages damaged/ Pages endommagées
- ☐ Pages restored and/or laminated/ Pages restaurées et/ou pelliculées
- ☐ Pages discoloured, stained or foxed/ Pages décolorées, tachetées ou piquées
- ☐ Pages detached/ Pages détachées
- ☐ Showthrough/ Transparence
- ☐ Quality of print varies/ Qualité inégale de l'impression
- ☐ Includes supplementary material/ Comprend du matériel supplémentaire
- ☐ Only edition available/ Seule édition disponible
- ☐ Pages wholly or partially obscured by errata slips, tissues, etc., have been refilmed to ensure the best possible image/ Les pages totalement ou partiellement obscurcies par un feuillet d'errata, une pelure, etc., ont été filmées à nouveau de façon à obtenir la meilleure image possible.

This item is filmed at the reduction ratio checked below/
Ce document est filmé au taux de réduction indiqué ci-dessous.



[Reprinted from the AMERICAN GYNÆCOLOGICAL AND OBSTETRICAL JOURNAL for December, 1899.

THE OPERATIVE TREATMENT OF UTERINE FIBROIDS.*

BY F. A. LOCKHART, M.B., C.M. EDIN.

Lecturer in Gynæcology, McGill University, Montreal; Gynæcologist to the Montreal General Hospital, and Protestant Hospital for the Insane.

The whole subject of fibroid tumors of the uterus is so vast that it cannot be fully considered at such a meeting as this, where the time is necessarily limited, yet I hope that an interesting discussion may be provoked by the following remarks:

The first point to be taken up is *when to operate.* This should not be until after medical treatment has been tried thoroughly and has failed. If, instead of decreasing, the growth is becoming larger, some operative method of treatment ought to be tried without delay, especially if the patient be near or past the menopause, as malignant degeneration is very liable to take place at that period; again, where the tumor is impacted in the pelvis and the uterus contains a growing ovum, the only way in which room can be obtained for delivery *per vias naturalis* is by removal of the growth, which can occasionally be done without interfering with the progress of gestation if the tumor is pedunculated.

Excessive hæmorrhage also calls for prompt operative interference, as do also degenerations of the tumor, such as carcinomatous or suppurative and pressure or neurotic symptoms. Under the latter head are included those cases where the tumor is not giving rise to any local disturbance, but the very fact of its existence has such an effect upon the patient's mental condition that her health is actually suffering. Any gynæcologist with anything like a large practice, and many a general practitioner, also, must see numbers of such cases, where no amount of assurance of the innocent and harmless character of the growth in her particular case will quiet the patient's mind. Where a uterine fibroid is lying perfectly quiescent, giving the patient no trouble and possibly discovered quite accidentally, it is my opinion, and I am sure that all of my hearers will agree with me, that it should be left severely alone. Such a patient should, however, be kept under observation, so as to be ready to interfere should the tumor take on activity. One should, also, in such a case, be chary, especially where the tumor is either interstitial

* Read before the Vermont State Medical Association, Burlington, October 14, 1899.

or submucous, of advising marriage for two reasons, *viz.*, the increased risks of maternity and the likelihood of the tumor to take on active growth, owing to the increased blood supply brought to the tumor as a result of the pelvic congestion induced by the marital relations. Within the last two years I have operated upon two patients in whom the tumors had been either unnoticed or quiescent until after marriage, the following case being the most marked:

J. H., unmarried, aged 28, consulted me in 1894, on account of dysmenorrhœa and slightly increased menstrual flow. The patient was a highly strung, nervous woman, with a decidedly neurotic family history. She had always had more or less dysmenorrhœa and menorrhagia, but both were becoming worse. She was anæsthetized and the pelvis examined most satisfactorily, as the abdominal walls were thin and well relaxed. The uterus was found to be markedly anteflexed, but not at all enlarged, and the appendages were normal. Early in 1897 the young lady married, and in June of that year she consulted me again for pelvic pain, when, on making a pelvic examination, the uterus was found to contain a tumor as large as a fair-sized cocoanut. On removal in my private hospital, several months later, this was seen to be an interstitial myofibroma.

The second case came under my notice in the Montreal General Hospital, but was very similar to the above, except that the growth had not been so rapid.

The *nature of the operation* to be performed will entirely depend upon the indications for interference and the site of the tumor.

The operations are as follows:

1. Curetting.
2. Ligature of the uterine arteries, *i. e.*, the Gottschalk-Martin operation.
3. Oöphorectomy, *i. e.*, Tait's operation.
4. Myomectomy by enucleation or otherwise.
5. Hysterectomy.

a. Total: Abdominal, vaginal, abdomino-vaginal.

b. Supra-vaginal.

1. *Curetting* in cases of fibroma uteri is not in any sense a curative operation, but is a most useful measure, nevertheless, where one wishes to make a diagnosis of the condition of the endometrium, or where the patient has been greatly debilitated by profuse and repeated hæmorrhages. Here curetting and packing the uterine cavity will often enable one to tide a patient over until she has had sufficient time to gather strength to undergo a more radical and serious operation.

2. *Ligature of the uterine arteries* per vaginam is a comparatively new operation for the cure of fibroid disease of the uterus, and is one which is not very widely practised. This operation was first suggested by Dr. W. B. Dorsett of St. Louis in 1890,[1] but had never been performed by him. Gottschalk of Berlin in 1892[2] reported having twice ligated both uterine arteries through the vagina for the cure of fibroid of the uterus, with good results. Franklin H. Martin of Chicago[3] claims to have devised an entirely different operation in that he includes portions of the broad ligament, the uterine nerves, and, in some cases, the branches of the uterine arteries, as well as the ovarian vessels in his ligature. It seems to me that the same object might be accomplished in a simpler manner by tying the uterine arteries before they give off any branches. Martin, however, has reported quite a number of cases in which he has carried out this procedure with beneficial results, and therefore deserves recognition as the first man on this continent to report a series of cases treated by this method. The object of the operation is, of course, to diminish the supply of pabulum to the growth, and so to starve it out, as it were. It would seem at first sight as if there would be some danger of cutting off too much of the blood supply of the uterus, and so causing gangrene where the ovarian and uterine arteries on both sides are ligated, but no such case has yet been reported, which shows the danger to be more theoretical than real, the collateral circulation apparently being sufficient to nourish the organ.

Dr. Martin considers that the cases most suitable for this form of treatment are those of small interstitial fibroids, especially when they first make themselves manifest towards the menopause. Another class of cases where this operation is indicated is where the patient has become too exsanguinated from repeated hæmorrhages to undergo a serious operation where the hæmorrhage may be stopped to give the patient a chance to recuperate.

The contraindications are: (1) where the tumor is either submucous or subserous; (2) where the tumor has risen out of the pelvis to such an extent that the bases of the broad ligament cannot readily be reached, and (3) where the patient is near the menopause and has a large tumor which has suddenly taken on activity, the tendency of such a tumor to become malignant being much greater than where it is of small size.

3. *Oöphorectomy,* or Tait's operation, was formerly largely practised for the cure or relief of fibroids of the uterus, the chief contraindication being the fact of the tumor being so large as to cause the

appendages to be flattened out upon its surface in such a way as to render their removal extremely dangerous.

In the present advanced stage of pelvic surgery, we are enabled to perform the more radical operation of hysterectomy and myomectomy with such a low rate of mortality that they have almost entirely supplemented the less heroic and equally less efficacious operation. This latter is now chiefly limited to (1) those cases where the patient will not submit to removal of the uterus; (2) where, for any reason, it is found impossible to proceed with the removal of the uterus after the abdomen has been opened; and (3) where celerity in operation is essential on account of the patient's condition. One other class of cases might call for this operation, *viz.*, where the only trouble to which the tumor is giving rise is pressure, and its efficacy under such a condition was well illustrated in a patient who came under my care some four or five years ago. At that time she was complaining of retention of urine, requiring to have the catheter passed every four hours for some days, as well as a certain amount of dull pelvic pain. She was admitted under me to the Montreal General Hospital in this condition and found to have an interstitial fibroid of the uterus filling the whole pelvis. On opening the abdomen, the tumor was found to be so firmly wedged into the pedvis that its removal was deemed unadvisable, so both sets of appendages were removed. The result was almost better than one could expect, as within three weeks the patient could pass her urine unaided, and she has continued in good health up to the present, the tumor, although but slightly diminished in size, giving rise to no symptoms whatever. This operation acts not only by bringing about a premature menopause, but it also reduces blood-supply of the uterus on account of both of the ovarian arteries being tied off, but, as stated elsewhere, it is not the operation one would select by preference except in a very limited number of cases, although occasionally it is followed by a good result, yet in a large percentage of those cases where the ovaries are removed for the purpose of stopping hæmorrhage it fails, and the patient has to undergo the discomforts and risks of a second operation.

4. *Myomectomy* may be either a simple operation, as where one has to deal with a pedunculated growth, or else be extremely complicated, as in cases where a number of fibroid nodules require to be enucleated from the substance of the uterus. In my opinion, it is a proceeding the applicability of which is limited to those cases of fibroid where the line of demarcation between the tumor and uterus is very decided, or else to those cases where one or more small nodules are pro-

jecting to some extent beneath the peritonæal covering of the uterus, and whose presence has been discovered during an abdominal section for some other affection. Under the latter condition, these nodules should always be removed unless the patient is beyond the menopause, as their removal adds very little to the risk of an abdominal section, and they are always liable to take on active growth. Some operators go to the length of saying that one can thus remove any number of small tumors, suturing up the cavities with catgut. Among the strongest advocates of this method of treatment is Howard Kelly,[4] who says that "myomectomy should always be preferred to hystero-myomectomy in a young woman, provided that there are no complications," whereas Penrose[5] of Philadelphia takes exactly the opposite view, *viz.*, that hysterectomy is preferable to mymectomy as a rule. Kelly cites the case of a patient from whose uterus thirty distinct nodules were removed, and he claims that this patient not only had a good recovery, but that she also possessed a healthy and useful uterus. It hardly seems possible that a uterus in which so many cavities were made and then sewn up could be termed a good healthy organ. A quantity of scar tissue would be formed which would certainly be unfavorable to gestation, and when we remember how frequently carcinoma develops in connection with such tissue, it would appear, *a priori*, that a structure which had been so maltreated would be extremely liable to develop serious trouble, especially were pregnancy to follow. Martin of Berlin is another advocate of this procedure, but even in his hands the mortality from hæmorrhage and sepsis is very great. Previous to incising the tissue over the tumor, he passes a temporary elastic ligature around the lower part of the uterus, thus checking the hæmorrhage which would otherwise occur during the process of enucleation.

Where the tumor is submucous and the cervical canal can be readily dilated sufficiently, the myomectomy may be done by morcellement, which is too old and well known an operation to deserve more than mention at such a meeting as this.

Since January 1st, 1897, twenty-seven cases of fibroid disease of the uterus have been operated upon by me with but one death, which occurred on the eighth day from pulmonary embolism, and of these twenty-seven operations, myomectomy has been done five times, being followed by perfectly smooth convalescence. in each instance. The largest individual tumor removed weighed two and one-half pounds, and the largest number of nodules extirpated from any one uterus was five, so it is seen that no very serious cases received this method of treat-

ment. In all five cases, the tumors either possessed well-defined pedicles or else were projecting distinctly beneath the peritonæum.

5. We now come to the most radical operation of all, and that is *hysterectomy*. Although the most radical, this is the method of treatment of uterine fibroids employed by most of the operators upon the continent of Europe and on this side of the Atlantic for the following reasons: First, if the patient recovers from the operation there can be no return of the disease; and, second, in the hands of a skilled operator it is less dangerous than myomectomy by enucleation or morcellement.

Noble[6] of Philadelphia says of hysterectomy that "when it is done early, before the patient's general health has been broken down, and before complications such as degenerations of tumor or disease of the appendages have taken place, I am thoroughly convinced that hysterectomy for what may be called a healthy fibroid tumor of the uterus, when done by an expert, is as safe, if not more so, than ovariotomy." He advocates supravaginal amputation of the body.

He is supported by the writer of the article upon hysterectomy for fibroids in the "American Text-book of Gynæcology," who states that the mortality following all cases of removal of the uterus for fibroid, including the most complicated cases, should not be more than 8 per cent., while one should not lose more than 3 per cent. of uncomplicated cases, and my own experience tallies with both of these statements. It is a disputed point as to whether or not removal of the cervix adds to or detracts from the gravity of the operation, but personally I prefer to remove it. For one thing, when it is taken away and the ends of the vaginal walls approximated, there is no communication between the raw surface and the exterior by which any germs might enter. You will probably say that, while no germs can enter, this suturing across the top of the vagina prevents any drainage of the raw space left beneath the peritonæum. This is doubtless true, and, therefore, where I am at all doubtful of my technique or where pus in the pelvis has complicated the case, it has been my practice to pack the cavity with gauze, the end of which projects into the vagina, so as to provide drainage and allow of its removal, and then to unite the two flaps of peritonæum by a running suture, thus making the seat of operation entirely extra-peritonæal. Another plea for its removal is the weight of the cervix, which tends to invaginate the vagina. It is held by many that the cervix is the keystone of the arch of the vagina, and that therefore, its removal favors shortening of the passage. In my humble opinion, to talk about the keystone of an arch the uprights of which

are composed of soft, yielding structures is nonsense, and the fallacy of the statement that removal of the cervix renders shortening of the vagina more liable to occur, has been seen not only in my own practice, but also in that of others. Knowsley Thornton[7] has found, upon examining his patients at different periods after hysterectomy, that not nearly so much shortening followed complete as partial hysterectomy. Again, in a work upon pelvic inflammation, W. R. Pryor[8] presents a plate which shows the pelvic contents of a woman from whom the uterus had been removed several years previous to her death, and he remarks "notice how the bases of the broad ligaments hold up the vagina. There is no tendency to hernia, and the posterior cul-de-sac is just as deep as it ever was. This specimen is of value to us as showing the manner in which the vaginal vault continues to be supported even after the removal of the uterus." In my practice, out of eighteen cases of hysterectomy for fibroid which I have performed since January 1st, 1897, there has been but the one death above referred to, and of these, fourteen were total hysterectomies, the cervix for various reasons being left in only four. On examining these cases subsequently, I can positively assert that there was no more shortening of the vagina or prolapse of the vaginal walls where the cervix had been removed than where it had not been touched. In four of these cases of total hysterectomy, the cervix was separated from its vaginal attachments and the uterine arteries were ligated through the vagina before opening the abdomen. Where the tumor and uterus are low in the pelvis, so that the arteries can be readily reached, this proceeding is to be recommended, as it greatly simplifies the intra-abdominal work, but the majority of tumors which call for operation will be found to be situated so high up in the pelvis that it will be very difficult indeed to reach the vessels from below. A last argument in favor of the more radical operation is that, while the cervix is present in the pelvis the patient is always liable to disease of that organ, as, for example, carcinoma and inflammation, and, as the cervix is the seat of disease in the majority of cases of pelvic cancer in woman, the removal of that part frees the patient of a serious danger.

Having now decided upon total hysterectomy, by which route is the uterus to be removed, the abdominal or vaginal?

This question has provided ample subject for debate for several years back, but, in my opinion, the two routes should not be considered as rivals in any sense of the word when the disease calling for the operation is fibroid of the uterus, and that is the only question which we have to consider this morning. Where we have a small tumor

which can readily be reached per vaginam, and where the passage is roomy, there is no doubt but that the vaginal is the best route to pursue as it takes no longer than the abdominal method, the patient makes a somewhat better recovery, there is no risk of hernia, and there is no abdominal belt to be worm. If we operate per vaginam, the use of ligatures will be found to be more satisfactory than clamps in preventing hæmorrhage, as they cause the patient no pain, do not necessitate disturbance of the patient for their removal, and there is less danger of secondary hæmorrhage than where clamps are employed. Pean[9] recommends that all fibroids no bigger than a fœtal head be removed per vaginam, all others through the abdomen. In the latter case, however, he removes the supravaginal portion of the uterus through the abdomen, and then takes away the cervix per vaginam, which seems to me to be putting the cart before the horse method of operating, as one usually curettes the uterus before removing it, so I fail to see why one should not finish the vaginal work at once instead of having to change the position of the patient twice.

The following was an eminently suitable case for the vaginal operation:

On May 5th, 1899, Dr. Merkley of Edwards, N. Y., telegraphed me to go out and see a case with him, and to be prepared for an hysterectomy. On arrival, the patient was found to be 51 years of age and to have had repeated floodings, the menopause not having yet appeared. Vaginal examination revealed a tumor about the size of a tangerine orange projecting down into the vagina from the anterior lip of the cervix, and implicating the anterior wall of the uterus, as the tumor could not be isolated and the patient was not able to stand the loss of blood occasioned by myomectomy by morcellement on account of the patient's age, it was decided to remove the uterus, which was done per vaginam with the assistance of Dr. Merkley, Dr. Dalmage giving ether. But four ligatures were used altogether, and the field of operation was packed with iodoform gauze, as, having only one assistant and no nurse, I feared that there might have been some contamination of the wound.

All fibroids larger than those above mentioned, *i. e.*, larger than a fœtal head, should be removed by the total abdominal hysterectomy, and no one method will be applicable to every case.

The following method has been the most serviceable in the writer's hands:

After opening the abdomen and extruding the tumor through the incision, the intestines above the tumor are covered by aseptic towels.

The anterior layer of the broad ligament of one side is then incised from just below the extremity of the Fallopian tube to the outer end of the fold between the uterus and the bladder, and the vessels contained in this area of tissue are ligatured, each in two places, and divided, the ligatures running beneath the posterior layer of the broad ligament. The ligament is now divided and the other side is treated in the same way. The next step is to make your anterior flap of peritonæum by uniting the lower extremities of the other incisions by a line running across the anterior surface of the tumor a little above the uterovesical fold, this flap being dissected free. The finger now works its way down through the base of each broad ligament until the uterine artery is discovered. This is now isolated as much as possible, is ligated in two places, and divided. After its fellow of the opposite side has been dealt with in a similar manner, the uterus is drawn forward and a posterior flap of peritonæum is dissected down. The vagina is now entered between the bladder and uterus, and, using the index finger in the vagina as a director, the roof is divided all around the cervix and as close to the latter as possible in order to prevent shortening. The uterus, being now free, is removed and all bleeding points are ligated. The two walls of the vagina are then sewn together by a continuous catgut suture, after which a similar suture is used to close over the raw surface, beginning at the outer border of the left broad ligament. The vessels and their ligatures having retracted down between the layers of the broad ligament, the edges of this structure are brought together so as to make the ligatures lie entirely beneath the peritonæum, and the whole raw surface is closed over in this way from one side of the pelvis to the other, when, passing over the extremity of the vagina, it is included in the running suture, so that it receives additional support. The abdomen is then wiped dry and closed.

The accompanying chart shows the average evening and morning pulse, respirations and temperatures for the first fourteen days after operation of the cases of abdominal hysterectomy for fibroid, which have been under my care since January 1st, 1897:

To sum up:

1. A uterine fibroid should not be interfered with unless it is giving rise to serious symptoms, be they mental or physical, notwithstanding the statement of one gynæcologist[10] that he removes all fibroids which he meets with in practice, whether they are causing trouble or not.

2. Curetting is merely a palliative measure, as is, also, in many cases, ligature of the uterine arteries.

3. Removal of the appendages ought to be merely a *dernier ressort,* as it practically never cures and does not always even relieve.

4. The operation of selection should be either total hysterectomy or else myomectomy.

5. Myomectomy is to be chosen (*a*) where the tumor is submucous and pedunculated; (*b*) where it is subserous and either has

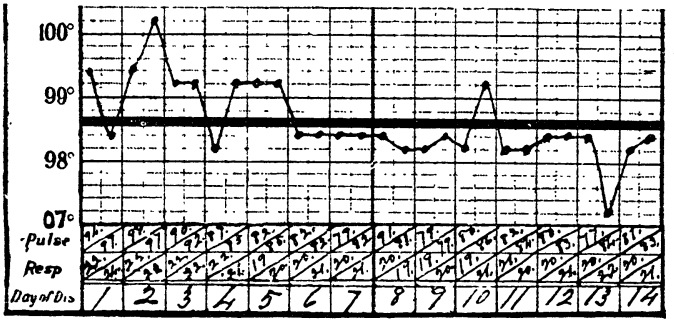


Table showing the average morning and evening pulse, respirations and temperature in eighteen cases of hysterectomy for fibromyoma uteri for the first fourteen days after operation.

a pedicle or a well defined border; (*c*) where several small nodules lie immediately beneath the peritonæum.

6. Total hysterectomy is indicated (*a*) where the tumor is submucous and non-pedunculated, and the cervix cannot be dilated sufficiently to allow of morcellement; (*b*) where the tumor is either interstitial, large and subserous without a pedicle, soft, fibrocystic, or undergoing degeneration; (*c*) where the tumor is complicated by diseased adnexa.

Bibliography.

[1] *St. Louis Courier of Medicine,* 1890.

[2] "Die Histogenese und Ætiologie der Uterusmyome," Brussels Congress, 1892.

[3] *American Journal of Obstetrics,* April, 1892.

[4] Kelly's "Operative Gynæcology."

[5] "Diseases of Women," by Penrose.

[6] American Gynæcological and Obstetrical Journal, Vol. VII., 1895.

[7] "A System of Medicine," by Thos. Clifford Albutt and W. S. Playfair, 1896.

[8] "The Treatment of Pelvic Inflammations through the Vagina," by W. R. Pryor, 1899.

[9] *Annales de Gynécologie et d' Obstetrique,* 1895.

[10] Gordon, *Amer. Journal of Obstetrics,* Vol. XXXI., 1895.