On the treatment of the pedicle in supra-vaginal hysterectomy / by George Granville Bantock.

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ON THE TREATMENT OF THE PEDICLE IN SUPRA-VAGINAL HYSTERECTOMY.

BY GEORGE GRANVILLE BANTOCK, M. D.,

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Mr. President.—The surgical treatment of fibroid tumors of the uterus by abdominal section has, within the last ten years, attracted a great deal of the attention of gynecologists.

It is not within the scope of this paper that I should take up any of your time with a pathological dissertation as a preliminary to the more practical subject to which I intend to confine myself—for it would be as unprofitable as it would be tedious—neither is it my intention to inflict upon you any arguments for or against the operation in question, with the view of indicating what cases should, in my opinion, be operated on, and what cases should be let alone. Nor shall I say anything on the question of oöphorectomy *versus* hysterectomy. These subjects are important divisions of the great subject of the surgical treatment of uterine fibroids by abdominal section, and afford, each in itself, ample material for separate discussion. But I shall assume that the case has been discussed in all its bearings, and that it has been decided to remove the tumors by abdominal section. It can not be denied that considerable progress has been made within the last few years in the direction of perfecting this operation, and I think it will be conceded that that progress has rested mainly on the mode of treating the pedicle, or what stands for the pedicle. That I regard as the most important step in the operation, and that is the subject of my paper.

When I performed my first operation, now nearly nine years ago, I had no very definite views on the subject. As far as I can remember, I had never seen a case of supra-vaginal hysterectomy. I had seen a few cases of the removal of pediculated fibroids, or fibro-cystic tumors. Most of these were treated by the ligature and intra-peritoneal method, and I believe I am correct in saying that they nearly all died of hemorrhage from the stump. A few cases treated by the ovariotomy clamp, or some other extra-peritoneal method, recovered for the most part. The result of my observations and deliberation on the subject—for the literature of the subject was scarcely begun—was that, when I came to do my first case, I determined upon trying the actual cautery, which, in the hands of Baker Brown and Keith, had yielded such good results in ovariotomy.

Avoiding unnecessary details, I shall only notice essential points. In this case the tumor, which originated near the fundus of the uterus, and with its uterine envelope weighed about three pounds, was readily turned out of the abdominal cavity, and the cautery clamp was applied across the uterine body just below the tumor. When the searing of the stump was completed the result seemed most satisfactory, and my disappointment may be easily imagined when, on the removal of the clamp, I found that the uterine tissues had been divided as with a knife, and that only the two peritoneal edges were held together. Immediately a bulging was observed behind the seared and compressed tissues, and in a few seconds the frail barrier was broken down by the blood pressure. The stump was at once caught up, and while the broad ligaments were firmly held by an assistant, and the bleeding thus controlled, a double thread was carried through on the right side, the needle passing as close to the side of the uterus as possible, and with one of these threads the bleeding was secured on that side. One end of the second thread was now carried through the ligament on the left side along with a third thread, and with the second thread the body of the uterus, at the level of the internal os, was secured, while the third completed the chain by securing the left broad ligament. The bleeding was effectu-

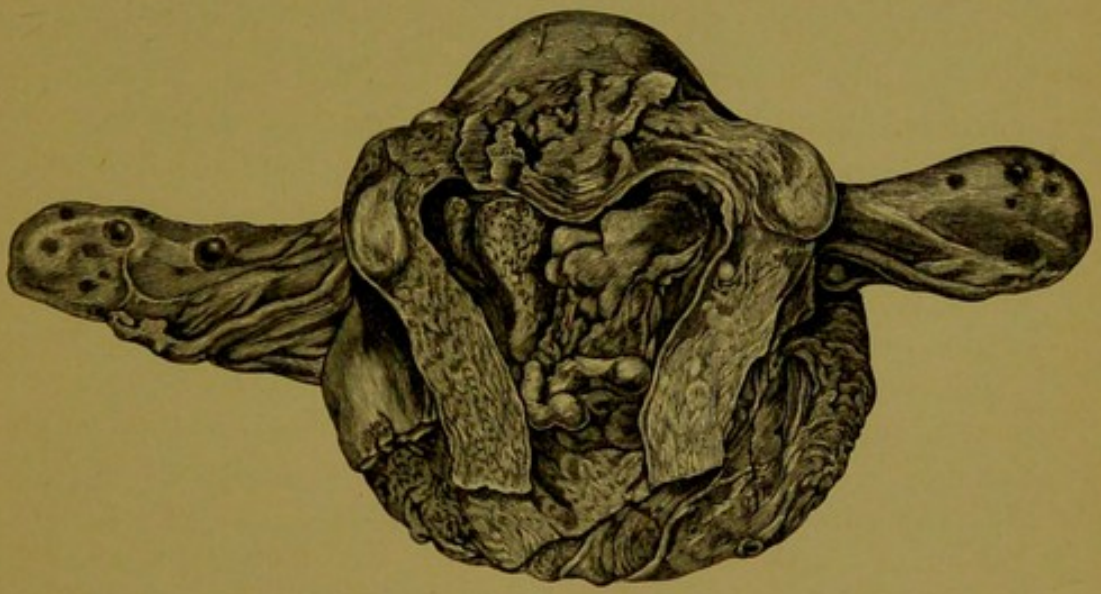
ally controlled, but only for the time, as the sequel shows. To make "assurance doubly sure," I encircled the whole, in the line of the ligatures, with a stout ligature, and, after cutting the stump into two flaps, an anterior and a posterior, I stitched these together with an uninterrupted suture. Lastly, I caught up the stump with the two lower abdominal sutures, with the view of getting adhesion to the parietal peritoneum, and thus sealing the surfaces, and then closed the wound. The patient died at the end of four days with all the symptoms of septicemia, in spite of the strictest observance of Listerian details. The *post-mortem* examination revealed the cause of failure, viz., in the peculiar nature of the uterine tissues. That peculiarity consists in their shrinking under pressure, so that, in a few hours, a ligature, which has been tied with all the strain it will bear, ultimately becomes quite loose. In consequence of this shrinking of the tissues, and loosening of the central and circular ligatures, slight oozing took place from the divided uterine tissues, some of which burst through between the flaps into the peritoneal cavity, and some escaped into the vagina through the cervical canal and appeared there on the third day.

To those who are acquainted with the literature of this subject, it will at once be evident that this is the very method that has since found so much favor with some of our German brethren—notably by the distinguished gynecologist who is here to-day, viz., Professor Martin, of Berlin, by Sänger, and the late Professor Schroeder—and which, as some believe, is to render the intra-peritoneal method preferable to the extra-peritoneal. The chief argument advanced in its favor is that derived from the history of ovariotomy. But I need not point out to you how erroneous the argument is, for the conditions are so dissimilar.

This was sufficient experience of the cautery, and so impressed was I with the behavior of the ligature that I resolved never to try it again in a similar case. That resolution not only remains unbroken, but has been strengthened by the results in other cases.

My next case, in February, 1880, was of a totally different kind. In the first case I operated deliberately for a tumor known to be of uterine origin, while in this second case the tumor was believed to be ovarian, and it was not till seven pints of fluid had been evacuated, and the tumor, after separation of its extensive connections with the omentum and intestines, had been turned out, that its real nature was determined. It was then found to spring from the fundus uteri by a thick, fleshy, vascular pedicle, as thick as my wrist—i. e., between six and seven inches in circumference. This seemed a most suitable case for the ligature, and I accordingly tied it in three portions, and then enucleated the base of the tumor after dividing the capsule about two inches from the ligatures. But I was not satisfied with the appearance of things, and did not proceed any further with the method, fortunately, but at once encircled the pedicle, just behind the ligatures, with a loop of silvered-copper wire applied by means of Cintrat's *serre-nœud.* In the twisting the wire broke under the strain. I reapplied it more carefully, and the result was that, on removing the ligatures, the hemorrhage was completely controlled and the stump was quite blanched. After transfixing the stump with two long needles in handles — the only means at hand — placed across, the abdominal wound was closed with the stump kept outside.

Now comes in the most important part of the case. Thirteen hours after operation there was free bleeding from the stump, and I had to employ the cautery. This stopped the bleeding for a time, but three days passed before the oozing was completely arrested, and not until the whole surface of the stump, even to its peritoneal edges, had been seared. Then another difficulty presented itself. The stump showed no sign of diminution by shrinkage, nor was this likely to occur, seeing that its circulation was so little interfered with. Accordingly, on the ninth day, I untwisted the wire and adapted a small Kœberle's *serre-nœud,* by means of which the stump was soon completely strangulated by successive tightenings. On the third day, or the twelfth day after operation, the wire broke under the strain ; but it had served its purpose, and the patient was out of bed at the end of four weeks.



I was thus feeling my way, as it were, in the dark, and I had got so far that opinions regarding the ligature, derived from my first case, were more than confirmed. I had found that Cintrat's instrument was unsuited for this purpose, but I had also found an instrument which, with some slight modifications, seemed to be admirably adapted for these cases. I had it altered and made in different sizes, and have continued to use it up to the present time, with increasing confidence. Various alterations have been suggested, but as yet I have seen no improvement. I also found that copper wire stretched, and would not bear a sufficient strain however carefully increased, and I substituted a fine wire of soft iron, which proved to be very efficient and manageable. I have tried steel wire, but found it too difficult to manipulate.

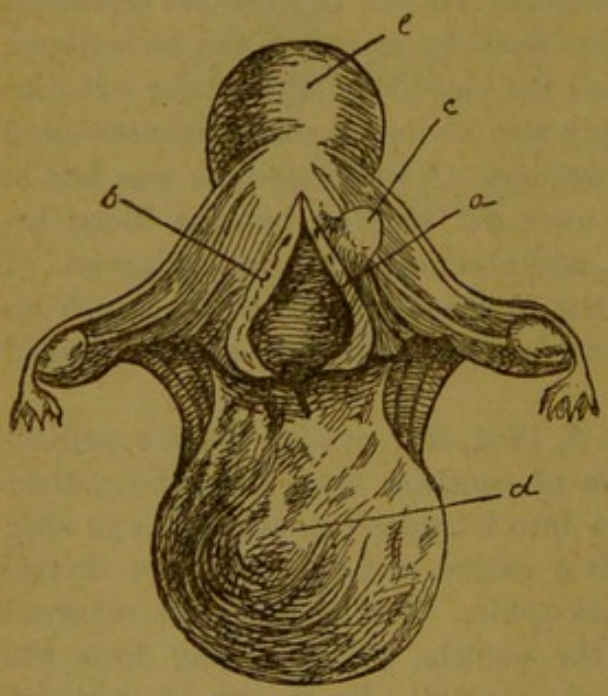
My third case occurred in June, 1880. In it I enucleated a tumor of about three pounds from the right broad ligament, and then secured the uterus itself by means of the *serre-nœud.* I thought I had stopped all the bleeding, but it broke out during the reaction—probably also owing to some sickness—and the patient died of hemorrhage. A drainage-tube was left in the pouch, whose edges were not secured, but the blood coagulating blocked it up, and obscured what was going on. I ought to have stitched the peritoneal edges of the pouch together, and attached those of the tube-hole to the parietal wound.

My fifth case, on Jan. 8, 1881, was one in which a pediculated fibroid was a source of constant trouble to the patient through its falling down into Douglas's pouch. It was easy to push it out of the pelvic cavity, and this was done several times, but only to fall back again. The ovaries were removed without the tubes, and the pedicle, which sprang from the fundus uteri, was secured externally by means of my new *serre-nœud.* Again, it answered its purpose admirably. The patient continues quite well, and has never menstruated.

My sixth case was another example of a pediculated fibroid, and the *serre-nœud* proved itself a very serviceable and reliable instrument.

These cases served to give me confidence in the instrument and to develop its capabilities, so that when I came to do my seventh case, on June 20, 1881, I was the better prepared to encounter its difficulties. The case was a very formidable-looking one:

A large, elongated tumor lay diagonally in the abdomen, one end resting in and filling up Douglas's pouch, the other running up under the left false ribs. In the neighborhood of the umbilicus there was a small pediculated tumor as large as my two fists, very tender on manipulation, and the source of the great pain of which she complained. The uterus was drawn up above the symphysis pubis, and the os could only just be reached by the tip of the finger. The patient was a single woman, aged forty-five. About five years previously she had been in the hospital, but nothing was attempted. She now insisted on something being done to relieve her from her sufferings. Yielding to her urgent entreaties, and in spite of the unpromising aspect of the case, I operated on her on June 30, 1881. On opening the peritoneum, the source of her sufferings at once became evident from the way in which the omentum, with its vessels enormously enlarged, enveloped the small tumor and adhered to the large one. After this was detached, I was able to complete my examination of the relations of the large tumor, and the result was that I decided to attempt its removal. Indeed, this was the only alternative after the separation of the omental adhesions. Accord-



POSTERIOR VIEW.

a, uterine cavity; *b*, uterine wall; *c*, small sub-peritoneal fibroid: *d*, large fibroid in anterior wall—low down; *e*, fibroid growing from fundus.

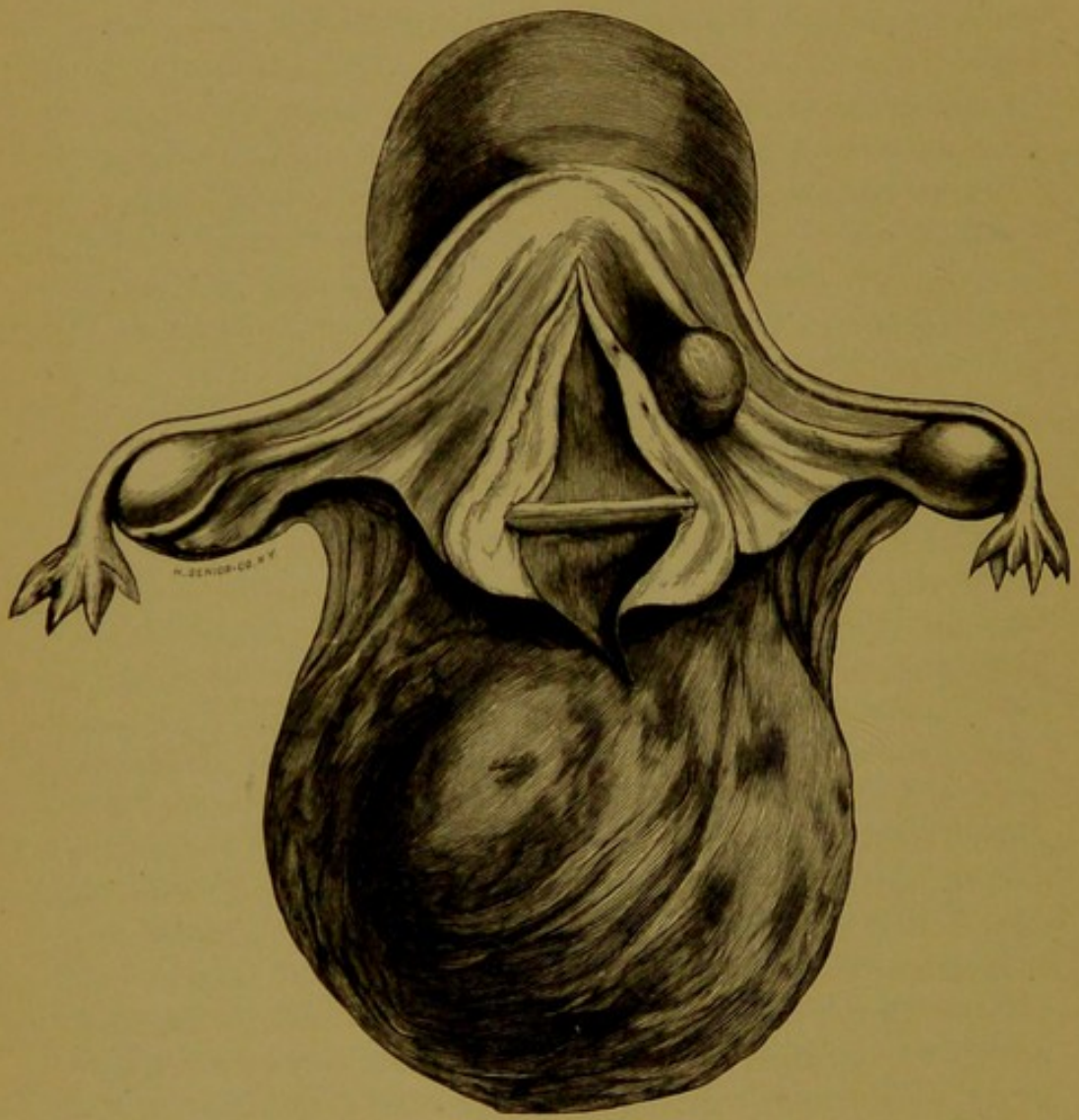
ingly, I enlarged the incisions several inches beyond the umbilicus and turned out the tumor. The broad ligaments were very long and very edematous, and all the vessels were enormously enlarged. I first secured the ligaments on each side by a ligature transfixing close to the uterus; then I thrust the wire of the *serre-nœud* through, backward on the one side and forward on the other, so as to encircle the uterus, and then adapted the instrument. As soon as the loop was tightened I cut away the mass, and then was able to see my way more clearly. I perceived that this was a very faulty way of using the instrument, and I put on a second instrument behind the first, and embracing both the ligaments and the uterus in the one loop. When the instrument was screwed up, I was struck with the extent to which it was easy to compress the tissues without any tension of the broad ligaments or undue strain on the wire. This compression was so great that, when the stump came off with the *serre-nœud* on the eighteenth day, the hole was not more than a quarter of an inch in diameter. Only a part of the cervix was left. The patient made an excellent recovery and continues well.

This tumor was exhibited at the International Medical Congress in London when this subject was under discussion.

The whole matter was now becoming much clearer to me, and I felt that I had stumbled across a method which made the removal of such a tumor as this as easy as an ordinary ovariotomy, and it was very evident that, if I had adopted it in my first case, the result would in all probability have been a success. But one could not expect to meet with many cases so favorable as this. It was not long ere the method was put to a much more severe test than any of the cases had yet afforded.

On November 16, 1881, a single woman, aged forty-two, was admitted into the Samaritan Free Hospital in a very anemic state, the result of excessive menstruation. The flow was excessive both as to quantity and duration. On the evening of her admission her temperature was 99.8°; three days afterward it was 101° at the same hour, and on the fourth day it rose to over

103°. There was a small tumor in the hypogastrium of about two pounds in weight, globular in shape, and tender on manipulation. The treatment consisted of complete rest, light diet, and ten-minim doses of the muriate tincture of iron every two hours. On the sixteenth day the temperature had become normal, and the patient began to improve in appearance. Menstruation did not recur till the thirty-ninth day, and I had already begun to think that further treatment would be unnecessary, but on its reappearance the flow was again excessive, and lasted ten days. It returned again in eleven days and continued for eleven days, and at the end of this time she had evidently lost what she had previously gained. It now became necessary to consider what was to be done. The tumor was, as I have already said, of a globular shape, and of smooth and even surface, rising half way to the umbilicus, and still a little tender. Per vaginam the cervix was very short, and passed directly into the tumor, which on this side also was globular, and seemed so unsuitable for the radical treatment that I decided to remove the appendages as the only possible operation. With this intention I opened the abdomen on February 2, 1882, and proceeded to remove the left ovary and as much of the tube as possible. The ovary lay on the side of the tumor, and it was very difficult to tighten the ligatures sufficiently. The right ovary was low down behind, and in order to reach it I had to turn out the tumor, the incision being enlarged for the purpose. Owing to the strain thus put upon the left broad ligament one of the ligatures slipped, or, rather, the tissues were dragged through the outer loop. It was at once evident that it would be impossible to get the divided and now widely separated tissues together again, and there was no alternative but that of removing the whole mass. The bleeding was temporarily arrested by means of hemostatic forceps, and the right ovary was ligatured and removed. While the tumor was firmly held up by an assistant, I applied the *serre-nœud*, placing the loop as low as possible between the ovary and uterus on the right side and below the ovarian site on the left, so as to include the parts that had slipped from the ligature. This was a matter of no slight difficulty. On cutting away the tumor the diameter of the cut surface measured over three inches.



This enlargement was due to hypertrophy of the uterine tissues. On cutting open the tumor, it was found to be an example of a hard fibroid in a state of cystiform degeneration. Hemorrhage had taken place into its interior, as indicated by the presence of a large, partly decolorized blood-clot. It was this hemorrhage, doubtless, that caused the tenderness of which she complained on admission, as well as the high temperature to which I have called attention. The tumor weighed two pounds.

The patient made a very good recovery, leaving the hospital in seven weeks, looking remarkably well, and without the hemic murmur which was so marked at the time of her admission.

In this case the relations of the tumor were such that I should not have even dreamed of attempting hysterectomy had I not been driven to it by the slipping of the left pedicle from its ligature. But it taught me what could be done by this method, and how to deal with my twentieth case.

The patient, in this instance, was a single woman, aged thirty, with a large tumor (thirteen and a half pounds) of globular shape, and leaving not more than an inch of the cervix free. There was very marked anemia, and the lower extremities and lower abdominal wall were very edematous; the urine was scanty, and contained about one third of albumin, but its specific gravity was normal. Believing that the albuminuria and anasarca were due to pressure, I determined to operate, and did so on July 5, 1882. On turning out the tumor the broad ligaments were found to be long and very vascular, almost resembling their state in mid-pregnancy, and I was able to encircle the whole with the loop below the level of the ovaries. When the pedicle thus formed was divided, the cut surface from one ovary to the other measured twelve inches, as seen in the drawing. Yet the diameter of the pedicle at the point of constriction was not more than an inch.

This was the first case in which I introduced the method of trimming the stump as much as possible, and stitching the peritoneal edges across all round, with the object of preventing its spreading out like an inverted mushroom.

Suffice it to say that within twelve hours there was only a

trace of albumen in the urine, that the anasarca disappeared within three days, and that the patient made a rapid and complete recovery.

Yet another lesson was learned from my thirty-second case, which was that of a married woman, aged forty-three, the mother of three children, of whom the youngest was thirteen years old. On the right side the base of the tumor was easily reached, but on the left the broad ligament was opened up to such an extent that the reflection of the peritoneum onto the parietes was above the level of the pelvic brim. This gave a very broad base to the tumor, which was over five pounds in weight, and the wire, which was about a foot long, was only just long enough to encircle the pedicle and allow of its being secured. This loop was screwed up to the full capacity of the instrument, then another was applied immediately over it, and, when the loop was thoroughly tightened, the tumor was cut away, about three inches above the level of the loop. The instrument was then screwed up tight, and the base of the tumor enucleated to near the level of the loop. While I had turned round to pick up the pins for transfixing the pedicle, the stump slipped through the loop, and the instrument was in a moment free in my assistant's hands, with the stump bleeding furiously. I at once seized the central portion firmly, raised it into view, secured the principal vessels temporarily with hemostatic forceps, and endeavored to pick up the peritoneal edges before reapplying the instrument. On the right side the peritoneum had retracted so much that I only partially succeeded, and I subsequently endeavored to repair the breach by applying two deep sutures. The pins were now inserted, and the operation was finished in the manner just described in the last case. So great was the loss of blood that the poor woman, already very much reduced by repeated and long-continued hemorrhages, never rallied, and death ensued in seventeen hours.

Now, the important lesson to be learned from this case is this: *Never cut away the tumor until the pedicle has been transfixed* with the supporting pins.

Pregnancy, as I have indicated, renders the application of the *serre-nœud* easy, for it lengthens the broad ligaments.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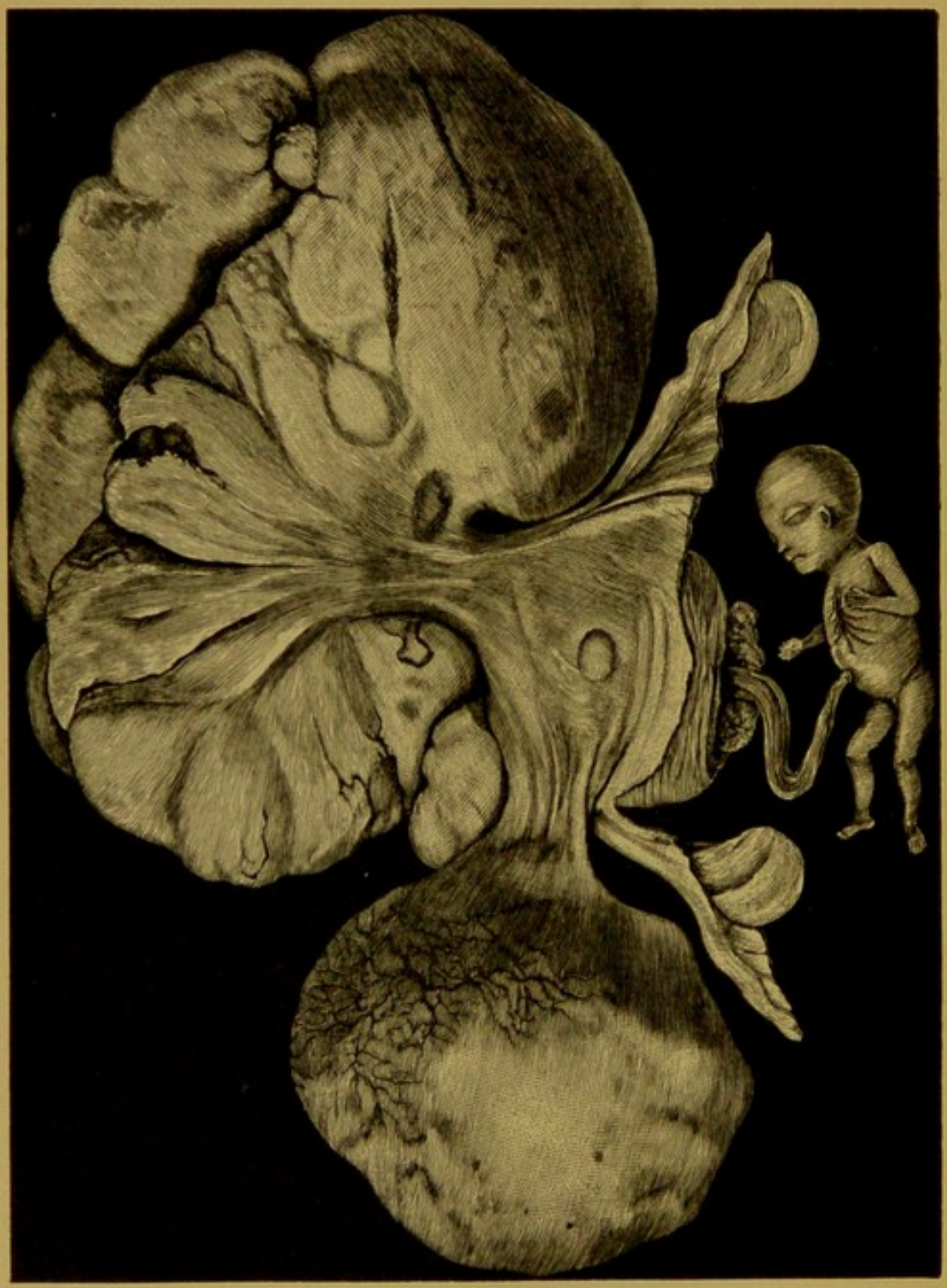


This is illustrated in the accompaning drawing, which is a faithful reproduction of my thirty-ninth case :

The patient, a single woman, aged thirty-four, had been under my observation for two or three years, and I had her in the hospital with a view to surgical treatment a year before the operation. As a result of a consultation nothing was done, as the patient's general health was not interfered with. In the mean time, the tumor grew very rapidly, pain had become very troublesome, and the general health was suffering. The cervix was drawn up quite beyond reach, and there was no sign at hand, beyond the absence of menstruation for three months, to assist me to the diagnosis of pregnancy. When the tumor was no larger than a cocoanut the hemorrhage was excessive, but, as it increased in size, the flow became gradually less, even to scantiness, before it finally ceased through the pregnancy. Even now I see no reason to regret the oversight, for the patient could not possibly have gone to her full time with this mass of thirteen pounds already in the abdomen, and in a state of cystiform degeneration, and with extensive parietal and omental adhesions. Had I made the diagnosis I should probably have been deterred from operating, and I think there can be little doubt as to what would have been the result. The patient is now in perfect health.

This view is also confirmed by the very last case I operated on before leaving home :

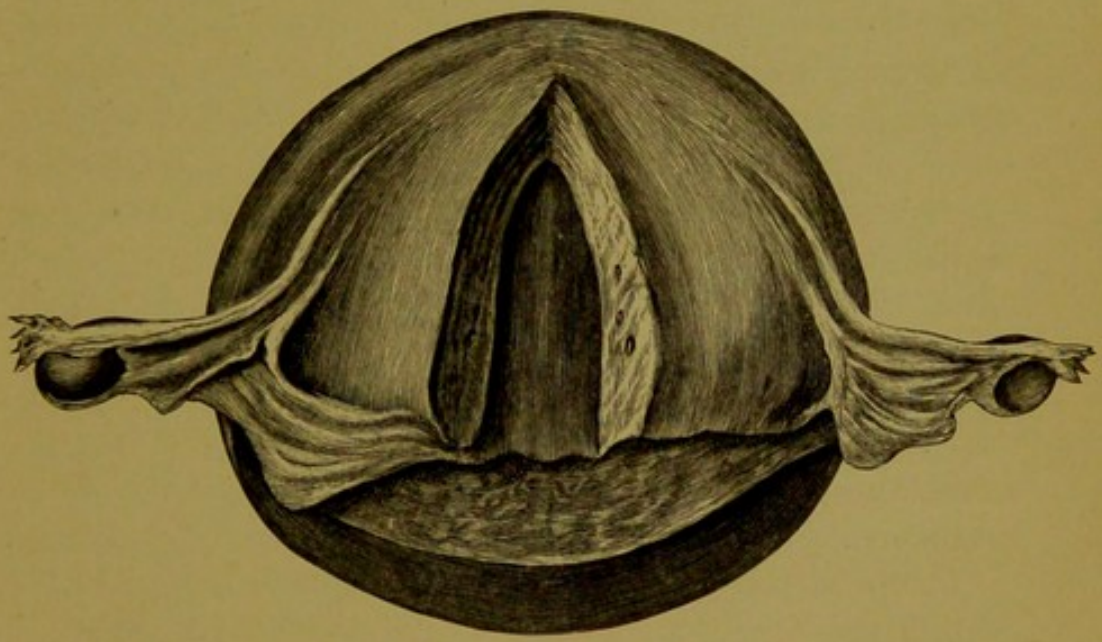
The patient was four months pregnant with twins, the uterus was in a state of fibroid degeneration, the walls measuring in some parts as much as an inch in thickness, and there were twelve to thirteen pints of fluid in one of the amniotic sacs. This fluid appears to have accumulated with very great rapidity, and such that in the course of a week the breathing became oppressed, the legs and lower abdomen edematous, and immediate relief became a necessity. The diagnosis was four months' pregnancy with ovarian tumor, but on opening the peritoneum the condition was at once recognized and supra-vaginal hysterectomy offered itself as the only alternative. The *serre-nœud*

came off on the ninth day, and the patient was progressing most satisfactorily.

But, to return to my narrative: Experience was now adding to my knowledge of the difficulties that were to be encountered, and the manner of dealing with them. In my forty-fifth case, viz., on February 28, 1885, I introduced another important modification. The tumor was globular in shape, and the broad ligaments were very short. The *serre-nœud* was put on just below the level of the ovaries, and partly screwed up. The broad ligaments were seized by large forceps between the ovaries and the uterus, so as to control the larger vessels, the peritoneal envelope of the uterus and tumor was divided all round, about three inches from the wire loop, and reflected toward the loop. The instrument was now screwed up, and, the tension being wholly removed on the uterine aspect, there was no difficulty in screwing it home. The pins were now put through half an inch from the loop, and a second *serre-nœud* was put on close behind the pins and partly tightened; the first was removed and then the constriction completed. In this way I gained half an inch of pedicle, besides relieving the strain on the broad ligaments.

In my fifty-first case I improved this method by first reflecting the peritoneal envelope, after temporarily securing the broad ligaments by forceps and stout ligatures, and then applying the *serre-nœud.* In this case, however, I could not include the ovaries, and they had to be ligatured separately, but not until the pedicle had been dealt with, lest their pedicles should be drawn out of the loops by the tension of the broad ligaments. Here is a drawing which illustrates this method of enucleation:

Thus have I been led on step by step to my present mode of making a pedicle for myself. Instruments have been devised for pulling in the slack, as it is called. This is entirely unnecessary, though I did not think so at one time. By this method of reflecting the peritoneum, and, as it were,



enucleating the tumor toward the cervix, you reduce your cases to nearly one form: you get a longer pedicle, and, at the same time, relieve the strain on the broad ligaments, and consequently the drag on the supporting pins.

But there is one more precaution to be noticed. When, in a case in which the broad ligaments are very redundant, either naturally or after reflection of the peritoneum, and partial enucleation toward the cervix, and they are thrown into folds on tightening the loop—when, I say, under these circumstances you come to trim the pedicle, be sure you do not cut away any of it until you have secured it ready for the stitching over the stump, by the application of many forceps; otherwise, you may meet with the accident that befell me in my sixty-second case. After tightening up the instrument, blood was seen to flow rather freely from the left side of the pedicle, and I thought I had cut the peritoneum. Careful examination, however, revealed the fact that one of these folds I am speaking of pulled through under the strain on the broad ligament. Fortunately I had put the pins through the pedicle, as I have already warned you always to do, before cutting away the tumor, and there was no difficulty in undoing the *serre-nœud*, picking up the free edge of the peritoneum, and reapplying the instrument. This did not interfere with the satisfactory progress of the case.

Bear in mind that one of the advantages of sewing the edges of the peritoneum across the stump is, that it prevents this retraction when the loop has become somewhat loose from the shrinking of the tissues.

You will now see that the treatment of the pedicle in supra-vaginal hysterectomy is a very different thing from that of the ovarian. Yet it is affirmed by some that, as the intra-peritoneal treatment of the pedicle in ovariotomy has played so important a part in bringing about the improved results now attainable by skillful operators, so we must look to the intra-peritoneal method as the mode of the future in supra-vaginal hysterectomy, if we desire to obtain the best results. I have no sympathy with that view, for I recognize the very

great and essential differences in the conditions. I have no prejudice in the matter, for I should be thankful for a safe and reliable method of intra-peritoneal treatment; but the ideal method has not yet been devised. I speak from experience. And, certainly, a comparison of results bears me out. Even in the case of a pediculated fibroid, where the conditions would appear to be most favorable, the comparison is on the side of the extra-peritoneal method. In my own experience, the intra-peritoneal method has been as uniformly disastrous as the other has been successful. Thus, of thirteen cases treated by the extra-peritoneal method, all recovered, while the two cases treated intra-peritoneally died. Not only so, but I have had to resort to the extra-peritoneal method after the failure of the intra-peritoneal in several of these thirteen cases.

Thus, there is no royal road; for, to sum up:

1. In one case the broad ligaments may be so long, and the ovaries so easily raised out of the pelvis, that it is a simple matter to include the whole in the loop; but,

2. In another case, while one ovary may be included in the loop, the other has to be ligatured separately; or,

3. Neither of the ovaries can be included, and both have to be secured separately; or,

4. The tumor opens up one broad ligament, and you must partially enucleate it; or,

5. The tumor descends so low in the body of the uterus that you have to separate it in great measure from its peritoneal envelope before you can get a pedicle which you can transfix and keep outside.

All these conditions—and they are not the only ones, but the most clearly defined—demand separate consideration, and many of them demand cool judgment and an absence of hurry and excitement. These test the skill and capacity of the operator, and the solution of the difficulty is not to be learned off like a school exercise.

I trust that in the description of these matters I have succeeded in making my meaning clear. As I have been

frequently questioned on the subject of the after-treatment of the pedicle, I will ask your permission to say a few words about it. A few sentences will suffice. If the pedicle has been properly secured at the time of operation by repeated screwings, and thoroughly protected by absorbent gauze, then the less you interfere with it the better. In some cases I have not even changed the dressings for more than a fortnight, or until the stump has become quite loose. The prime object should be to get the stump dry. As soon as the dressings become moist, then change them.

Do not apply perchloride of iron to the stump, for it is not necessary, and may be injurious. It is not necessary if you have screwed up the instrument to the full extent, trimmed the stump properly, and packed it well round with absorbent gauze. It may be injurious if any of it should happen to reach the wound—a very difficult thing to prevent. I am sure it often caused mischief in the old days of the clamp. I speak of what I have seen. The objection is not a theoretical one.

As soon as the dressings become moist, then change them daily, and keep everything as dry as possible. With regard to the tightening up of the instrument, very little interference will be required if properly done in the first instance. Do not touch it under four or five days unless in the event of decided oozing, for by that time the peritoneal adhesions will have become so firm that they will resist the strain. If bleeding occur it will be in the course of a few hours, and then the peritoneum may be said to be still at work gluing the surfaces together. In the case of a small pedicle it will not require to be tightened at all, the stump will become quite horny, and ultimately drop off without any interference. When, however, the pedicle is very thick, you will probably be called upon to tighten it. But this probability will be lessened in proportion as you carry out my instructions to make your pedicle for yourself and constrict it thoroughly by successive tightenings. Remember that, if you attempt this at once, you will either break the wire or cut the tissues.

In the latter event you have added enormously to your difficulties. Do not be in a hurry to get rid of your stump so long as it keeps dry. If pus should begin to well up from around the stump in the course of a week, then you may remove the *serre-nœud* and trim the stump in such a way as to facilitate the removal of the discharge.

Finally, when the stump has come off, you may treat the hole by the dry or wet method. The dry method consists in dusting the hole with iodoform. This can only be done in the case of a very slender pedicle. The moist method consists in washing out the hole with a stream of a solution of one part of sulphurous acid of the pharmacopeia in nine of water until all loose, dead tissue has been removed, and afterward half filling it with a mixture of equal parts of rectified spirit of wine and glycerine. Under this dressing suppuration ceases, and granulation proceeds most satisfactorily.

Supra-Vaginal Hysterectomy by Extra-Peritoneal Method.—57 cases; 45 recoveries; 12 deaths. 6 of the deaths were from kidney disease; 1 from acute enteritis; 2 from hemorrhage; 1 from obstructed intestine; 2 from peritonitis and septicemia.

Hysterectomy by Extra-Peritoneal Method.—13 cases; all recovered.

Hysterectomy by Enucleation, Etc.—2 cases; recovered.

Cases Treated Intra-Peritoneally.—5 cases; 1 recovery; 4 deaths.