Dunlap (Alex.)

# OVARIOTOMY;

A PAPER READ BEFORE THE

## Ohio State Medical Society,

AT ITS

## ANNUAL MEETING,

HELD AT DELAWARE, JUNE, 1868,

BY ALEXANDER DUNLAP, A. M., M. D.

*OF SPRINGFIELD, OHIO.*



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*Mr. President and Gentlemen:*

In looking over the subject of Ovariotomy as it now presents itself, I have thought that the needs of the profession, in regard to the operation, would be better supplied by my giving to them my experience and observations in diagnosing the disease, and the mode I have adopted of operating and my treatment of cases, rather than in presenting statistics of operations and their results. That, to a great extent, has already been done by the advocates of Ovariotomy, in proving that it was a legitimate operation, and one which was entitled to the confidence and support of the profession.

Under the name Ovariotomy I will include the operation for the removal of the enlarged Wolffian vesicle of the broad ligament, a tumor, however, which rarely attains the size at which I would recommend an operation. Yet, when it does attain that size, I would treat it as an ovarian cyst, for it will be imposible to diagnose between the two diseases before operating, and the operation and treatment is the same.

The field of observation is comparatively a new one, and

the profession is demanding more light, so that the operation may be made to result in a higher percentage of cures.

The idea that such vital organs as the abdominal viscera, could be exposed and handled with such roughness as was necessarily the case in the operation for ovarian tumor, without resulting in fatal peritonitis, was one to which the profession were slow to yield. And to-day, in dread of that result, they demand that our means of diagnosis be made plain before we invade, as it were, the very citadel of life, and lay open to our gaze those organs which nature has so carefully inclosed in such delicate membranes, to perform her secret workings. Nature, however, is constantly inviting us to study her laws by observing her ways, and she slowly but surely yields up her secrets to the patient investigato. She has long been teaching us by the growth of the gravid uterus, that by stretching and pressure the peritoneum may be brought into such a condition that at the time of delivery, it will bear the infliction of almost any amount of violence and bruising without resulting in inflammation. That however easy it may be to light up the most fatal forms of peritonitis from trivial causes in the one condition, in the other she has so prepared it to do her workings in a natural process, as to render it comparatively insensible to inflammatory action.

The same process of growth, stretching and pressure of the peritoneum in the development of abdominal tumors, renders their removal comparatively safe and free from fatal results from peritonitis, and should have a controlling influence in deciding the proper time in the size of the tumrr, when surgical interference may be recommended for the removal of the disease.

Nature has also tanght us that the female abdomen is so formed, that the organs will bear the presence of a tumor the size of the uterus at full term of pregnancy, without interfering with their functions. When brought to the bedside of the patient, this, then, will enable us to decide at a glance the first point, namely, whether or not it is a case for surgical interference. And, as I am the advocate of the

operation, with our present means of diagnosis, upon the uncomplicated cystic tumor of the ovary only, I look upon this point as an important one in our decision of the case. Ovarian dropsy, when uncomplicated, is attended by little or no pain or disturbance of the general functions of the system, until by its size it begins to interfere with nutrition, or by its weight begins to burden and fatigue the whole system. In its first stages the patient is seldom aware of its existence, and it is only discovered by accident as a floating tumor in the abdomen, or by its enlargement of the whole abdominal walls. The only time at which I have been able to learn that there was pain, was at the very commencement of the disease, before there was any tumor to be discovered, and which I attributed to inflammation of the ovary, which resulted in the development of the ovarian cyst. The history of some few cases, as given by the patients, has been that they had suffered pain and soreness in the region of the ovary, which, after a time, ceased or was cured by medication, and that some time afterward they discovered the tumor. But, as before stated, the majority had no warning of the disease until the development of the cyst was considerably advanced. Until the tumor, then, has attained the weight of some sixteen to twenty pounds, ovarian dropsy should not interfere with the health of the patient, and may safely be let alone.

Patients have sometimes presented themselves with much smaller tumors, whose general health apparently called urgently for the removal of the disease, but by the trial of an operation in one case, and the subsequent history of a number of others that have come under my observation, I am satisfied that if medication does not improve the general health an operation is out of the question, as there will be found to be complications of the disease, which will almost certainly render its results fatal. If, however, the tumor has attained some twenty pounds or more in weight, without creating much pain or disturbance of the general health except a mere failing of nutrition, as far as the size of the tumor is concerned, we may decide upon an operation, and the

slower the growth the more favorable the case for a successful result.

But there are other questions to be decided before the operation is to be fully determined upon. It has only been the enlargement of the abdomen we have been considering, and now the important point of diagnosing the nature of the disease has to be made, as there are other diseases for which it might be mistaken.

For the practical purpose of deciding the question for or against an operation, I will, regardless of their nature, divide all abdominal tumors into these two classes, the solid or fleshy tumor, and the encysted dropsical tumor.

Fluctuation is our great means of diagnosing between these two forms of disease, and in most cases it will be readily done. But when the tumor is small we may have difficulty in deciding this question. The cystic tumor, when small, is frequently very tense, and feels hard and firm, and, from the difficulty of properly percussing it, no certain fluctuation can be obtained. But, as previously stated, size may safely be depended on for a decision for the present. But in some cases, where the tumors are large, the cysts are filled with fluid almost gelatinous, and fluctuation is very indistinct. In such a case, when, after examination per vaginam, the tumor is found to be neither a tumor of the walls of the uterus, nor the result of pregnancy, and when, by the history of the case and a close physical examination externally, it is decided to be neither an enlarged kidney nor spleen, a small exploring trochar or needle may be introduced deeply into the tumor, and if fluid escapes it at once decides the case. But the fluid may be so gelatinous that none will pass. The free motion of the end of the instrument in the tumor, when moved, even in the most gelatinous substance can readily be distinguished from that confined motion, when the point is fixed in a fleshy or fibrous mass, and this will be the means of deciding the character of the tumor. In making the diagnosis, however, between such a tumor and an enlarged spleen or kidney some difficulty may occur. Enlargement of the spleen is much more common than that

of the kidney, yet in two cases which I have met end examined, I found the kidney enlarged to an enormous extent, the one after death weighing fifty pounds and malignant, the other fatty and weighing eighty-seven pounds. However difficult it may be to diagnose between enlarged spleen and enlarged kidney, they may either of them usually be readily detected from ovarian disease, by the position of the intestines.

In enlargement of the kidney or spleen you will always find the intestines pushed down into the iliac or pelvic region, and confined there, while in ovarian enlargement they are confined in the posterior lumbar region and push up under the ribs. In enlarged kidney you will find the colon in front of the tumor, and can readily trace it over the tumor under the thin walls of the abdomen.

It will always be in its fixed position from the tumor coming up behind the peritoneum and pushing the colon in front of it. In the case of the spleen you may further confirm your diagnosis by being able to slightly remove it from the pelvic and iliac region by placing your hands under it and moving it upward under the ribs, as you will always find the spleen firmly fixed and held up high in the left hypochondriac region. In diagnosing between it and pregnancy at full term, I think, there should be little difficulty, after a vaginal examination and auscultation. And if there should remain any doubt as to the diagnosis, it may readily and safely be settled by giving a little time to the case. In the case of a tumor of the walls of the uterus, it may be more difficult. The uterine sound will be found of great service in clearing up this point. Where introduced into the uterus, the mobility of the organ is easily determined and its attachments to the tumor ascertained. Also the distance the sound passes will show whether the organ has been drawn out of shape by adhesions to the tumor. If, however, we fail to clearly make out the diagnosis between the ovarian and uterine character of the tumor, we need not dread the result of introducing the exploring needle to ascertain its cystic or solid character, as no serious conse-

quences need be apprehended from puncturing a uterine tumor with such an instrument. Having, then, determined the character of the tumor, whether it is encysted dropsy or solid, I would reject all solid tumors as unsafe for an operation, on account of the uncertainty as to the size of the pedicle. Many of these tumors have small pedicles and would be favorable for an operation, and may yet, by perfecting our diagnosis, be brought safely within its scope. But for the present, as a class, I would reject them on account of the uncertainty of diagnosticating this point. This, however, may be done in these cases, without abandoning our patients to a speedy death without hope; for many of those fibrous tumors (and in my own experience a large majority, if not of a malignant character), at some period of their growth become stationary, and the patient may for years enjoy a comfortable degree of health.

Having, then, disposed of all tumors under sixteen to twenty pounds, and of all solid tumors we have remaining the encysted dropsical tumor above that size to deal with. There are but two sources from which these bodies will be found to spring and grow to that size—the ovary and the broad ligament of the uterus. And upon these, if uncomplicated, I would recommend the operation.

There is one other disease from which these encysted tumors are to be diagnosed, and that is abdominal dropsy. And here I will first point out the visible marks which distinguish the two diseases:

In abdominal dropsy the lips, skin, and mucus membrane of the patient present that exsanguineous appearance which always accompanies general dropsy.

In encysted dropsy there is none of this. In ascites the feet and limbs most frequently are swollen, which is seldom the case in encysted dropsy. The history of the case will tell you that in ascites the general health first began to fail before the enlargement, while in encysted dropsy the enlargement preceded the failing of health and strength. On placing the patient upon her back, in bed, and exposing the abdomen, in ascites you discover the walls of the abdo-

men flattened down and spread out at the sides, in encysted dropsy they are rounded up and prominent in front. In percussing the abdomen in ascites while the patient is upon her back, the resonant sound is found in front, around the umbilicus, in encysted dropsy it is found in the lumbar region, and up under the ribs in front. If however, you fail to get the resonant sound in either place, and the preceding symptoms had still left the mind in doubt, I would tap and seek for further light before operating. But this condition of things will be found to be exceedingly rare.

As extra-uterine fœtation, the only remaining disease that I know of, which might be mistaken for encysted dropsy, never attains the size at which I would propose to operate, we may suppose that we have now clearly diagnosed a case of encysted dropsy. What complication, then, should prevent us from deciding upon an operation? 1st. If there be any considerable amount of fluid found in the peritoneal cavity around the tumor, I would hesitate to operate before having that removed by absorption, as we may reasonably expect, in that condition, to find such a degree of disease in the peritoneum, that it would seriously interfere with the success of the operation. If there be fluid outside of the sack in the peritoneum, it may easily be detected by suddenly indenting the walls of the abdomen, over the tumor at different points with the ends of the fingers, by which proceeding the water in the peritoneum is displaced, and the finger is felt to come in contact with the tumor. 2d. If there is reason to suppose that there are close adhesions between the intestines and the walls of the tumor. This may reasonably be feared if, after tapping a simple cyst, a high grade of peritonitis has followed; for the patient is necessarily compelled to remain quiet in bed, and the emptied sack will fall down among the convolutions of the intestines, and most likely become adherent. The patient should also be closely questioned as to any inflammatory attacks of the bowels from which she may have suffered, since the appearance of the disease. If, finding she has suffered from frequent or severe attacks of peritonitis, and,

upon examination, we are unable to make the bowels glide from side to side, behind the tumor, by changing the position of the patient while lying down, and if, on repeated examinations, we find the position of the intestines fixed and the same, we may suppose they are held there by adhesions, and should decline to operate. Close adhesions to the walls of the sack by the intestines to any extent under other circumstances than these, need not, I think, be feared. 3d. If the walls of the sack be cancerous.

This condition of things will, I think, be clearly manifested by the cancerous cachexia of the patient, by the time the tumor has arrived at the size at which I have indicated an operation should be performed, and by the history of the case.

If, then, an encysted dropsy has attained such a size (we will say sixteen to twenty pounds) that it is interfering with the nutrition of the patient, by mere pressure upon the abdominal organs, and is free from the above complications, I would operate. In many cases, however, the tumor will attain a much larger size than above indicated before the patient will be inconvenienced by the growth, and they may safely wait until their failing powers admonish them of the danger of longer delay. In making this decision, it must be understood that I have spoken only of those causes originating in the tumor itself that would debar the operation.

Organic diseases of other parts or other causes operating upon the system must be considered and decided upon the general principles of surgery, and may render our decision adverse to an operation. Upon this subject, however, I will not dwell.

It will be noticed that I have not included in the complications debarring the operation adhesions, except extensive and close adhesions to the bowels, and this form of adhesion will be found very rare, on account of the mobility of the organs, and we have a very fair means of diagnosing these cases. But other adhesions to the walls of the abdomen and omentum are common, and we have no certain

means of detecting them or of learning their extent, but they give the patient so little trouble after the operation has been properly performed, that I do not hesitate to recommend it, even where I have every reason to think they really exist, and are extensive and firm. This is a point which I know will be controverted by many, and many of those who have written upon the subject, and are high in authority, condemn this view, but with me it is an opinion formed from experience in the operating room and at the bedside of the patient, and not from the theory I have advanced of the preparation of the peritoneum by the growth of the tumor to bear the operation.

These are the physical conditions which should guide us in recommending the operation. But the mental condition is scarcely less important. Great fear or hesitation on the part of the patient should be overcome before the operation is performed. The mere passive consent of the patient, through the urgent solicitation of friends, or the persuasions of physicians will not do, nor should it be allowed. A plain and honest statement of facts as to the nature of the disease and the probable results of an operation, together with the patiently answering of any questions which the patient may ask, and which may have been giving her mental trouble, will, in all probability, quiet her fears, and decide her to have the operation performed, and she will frequently endure it with a confidence and courage which is astonishing even to the operator himself. If, however, a certain degree of mental confidence and quietude is not obtained, I would desist from the operation for the present, for there is no operation in surgery in which the nervous condition of the patient has so much to do with the result as in ovariotomy. The tying and cutting of the broad ligament and Fallopian tube, in such close proximity to the uterus will, of necessity, produce more or less congestion of that organ, and all practitioners fully understand the controlling influence which the uterus, in a congestive state, has upon the female system.

Having now pointed out the conditions under which I

would operate, I would, by diet and care for ten days, have the patient's secretions brought into as healthy and vigorous a condition as possible, giving, at the same time, the muriated tincture of iron to promote union by first intention after the operation. The patient being thus prepared, I would place her in a half-reclining position, give chloroform, and make an incision from four to six inches long in the median line, below the umbilicus, down to the tumor. If there are no adhesions the tumor may now be tapped by plunging the scalpel with which you have been operating into the sack, and making an incision from one-half to three-fourths of an inch in length, through which the fluid will freely spout. As the sack and walls of the abdomen relax from the escape of the fluid, an assistant should carefully compress the abdomen, keeping the cut edges of the walls in close contact with the sack, thereby preventing any of the fluid that might trickle down the walls of the sack from entering the peritoneal cavity, and, at the same time, keeping up a steady flow of the fluid into the vessel held to catch and retain it. When compression begins to fail in this way to throw the fluid clear of the sack, the finger of the operator may be introduced into the opening of the sack, which may then be partly raised and withdrawn from its bed in the abdomen, and by lowering the portion withdrawn, and by making compression, the remainder of the fluid may be speedily expelled. The sack is then withdrawn and given to an assistant, the pedicle pierced and tied by double silken ligature, one end cut short and the other brought out at the lower end of the incision, and the pedicle cut close to the ligature. The peritoneal cavity is carefully sponged out, and the wound closed by suture and isinglass plaster, compresses put on, the patient dried bandaged and placed in bed. Unfortunately for the surgeon, this simple and easy operation is, in the majority of cases, changed to one much more formidable in its character and execution. If there be adhesions found, after making the incision as before stated, the incision is to be lengthened, the hand introduced, and the adhesions separated as far as

possible without endangering the bursting of the sack. The sack is then to be tapped as before described, and the same proceeding observed, except in cases where the operator has not succeeded in breaking all the adhesions before tapping, then the assistant is to introduce his finger into the opening of the sack and support it, while the operator proceeds to sever the remaining adhesions, after the sack has been, in a great measure, emptied.

The long, worm-like adhesions which he may find running from portions of the intestines to the sack, must be carefully examined as they are broken, to see if they contain vessels which might give trouble. If so, they must be tied before letting them drop in among the intestines, as they may not so readily be found afterward. These ligatures should be secured so that they may not be lost, and finally brought out at the nearest point in the incision.

The tumor is now removed, and the pedicle secured as before described. The lacerated peritoneum and hemorrhage are then to be looked after. If there be shreds of the torn membrane hanging to the walls clip them off. If the opening in the walls is not sufficiently large to enable you readily to reach the bleeding parts, extend the incision upward so that the walls may easily be everted and the hemorrhage properly attended to, by the application of cold water, tortion, or the ligature. In the application of cold by means of water, the sponges should be carefully squeezed, so that the water may not drip down among the intestines. Keep the parts exposed until they begin to glaze, or until the hemorrhage has ceased, then carefully remove any clots from among the bowels, using sponges dipped in lukewarm water.

The wound may now be closed and remain so until the parts have regained, in a measure, their natural warmth; then again reopened, and if no hemorrhage be found, may be closed and dressed as before stated, But if hemorrhage is again present, further search must be made for the open vessels, and they must be secured before finally closing and dressing. In these cases, I apprehend the great danger of

peritonitis is from clots remaining as a source of irritation from decomposition rather than from the laceration of the membrane. On this account this part of the operation must not be hurried, neither should there be any fear of applying cold water to the walls of the abdomen until hemorrhage is thoroughly checked, so that it is not poured in among the bowels.

I am now writing by the bedside of a patient, the fifth day after the operation, in which a tumor weighing seventy pounds was removed, to which the whole front walls of the abdomen were so firmly adherent, that, in breaking them up, large patches of the membrane were torn from the walls of the abdomen, and it required twenty minutes of the application of cold water, just from the well, to safely stop the oozing of blood, yet, with two half-grain doses of morphine, administered one hour and a half apart, immediately after the patient was placed in bed, she has rested from within a half hour after the second portion without one particle of pain up to the present time. So free, indeed, has she been from pain and soreness, that she says she would not know from her sensations that anything had been done to her bowels. She moves around over the bed, and has all the time eaten and slept well. If this had been the only case in which I had witnessed such results, under similar circumstances, I might not be justifiable in recommending this rule of proceeding in the operation. But I have witnessed a number of such results, and I am warranted in saying that in my experience this result is the rule and not the exception. I have dwelt thus fully upon this point, from the fact that so much dread still exists in the mind of the profession, of adhesions in the operation, and that writers upon the subject so uniformly set down firm adhesions as a bar to the operation, coupled with the other fact that adhesions are so difficult and uncertain of diagnosis. So firmly am I convinced of the correctness of these views, that I have not hesitated to operate on a case that had been abandoned after an incision, whose cicatrix was eight inches in length, had been made into the abdomen,

and the further operation abandoned on account of the firmness and extension of the adhesion. In this case I succeeded in removing the tumor, weighing thirty-two pounds, without trouble, but had to apply eight ligatures to the walls of the abdomen before I could safely close the wound on account of hemorrhage. The patient recovered safely and speedily, and is now, twelve years after the operation, enjoying excellent health.

The only precaution I would take in regard to the temperature of the room is. that it should not be so cold as to chill the patient while her body is so exposed as it must necessarily be during the operation. The hands, sponges, and instruments which are introduced into the cavity of the abdomen should be scrupulously clean. The sutures in dressing the wound, should be passed deep in the walls, but not inclosing the peritoneum. The objection I have to inclosing the peritoneum by the sutures is, that in passing the needle you frequently puncture small vessels, and a considerable amount of blood is poured out along the ligature. If, then, the needle entered the cavity of the abdomen, which it must do to inclose the peritoneum, this blood would be as likely to flow internally as externally, and might, by its presence there, be a source of grave disturbance. But, on the other hand, if nature will take care of those large patches, sametimes three and four inches wide, on the walls of the abdomen, that have been denuded of the peritoneum, by reforming it or covering it with a new material which will answer all her purposes, why not leave the narrow strip along the cut to her care?

I prefer the silk ligature. and I remove the sutures the third or fourth day.

The management of the pedicle is another point on which there is much difference of opinion. Some of the pedicles are long, and might with ease be drawn up and fixed in the lower end of the wound by a clamp. But the majority of those upon which I have operated would have had to be put upon the stretch in order to reach that point. And some few were so short that they could not have been brought to

that point unless the lower end of the wound had been carried over into the iliac region, and depressed to meet the pedicle. The putting of the pedicle upon the stretch I look upon with disfavor, as endangering peritonitis or pelvic cellulitis, which is much more likely to occur after the operation than peritonitis. But, even if the patient escape this result, she is likely to be cured with a displaced uterus, which, in case of pregnancy, might give her trouble.

I prefer the double silken ligature, one arm cut short, and the other brought out at the lower end of the wound, drawn closely up, and leaving the end of the pedicle as near the wound as it will reach, without stretching it or displacing the uterus. In this position it is held by the walls of the abdomen falling on it when the wound is closed, and in a post mortem examination, seventy-two hours after the operation, I have found it neatly incased with lymph, forming a canal through which all the discharge from the stump would have to pass; none entering the abdominal cavity. This is the same process which nature adopts in inclosing the ligature when cut short and returned, and it appears to me to be much safer to be able to withdraw the ligature when once it loosens, than to have it remain encysted. And if nature should fail in either case to perfect her process, the one in which the pedicle was cut short and returned, if not encysted, when loosened would drop in among the intestines, producing disastrous results without remedy, while the other could be withdrawn with hopes of a favorable result.

The after-treatment of the patient you will find of the greatest importance to the success of the operation. On placing the patient in bed, quiet should be restored in the room before she comes fully from under the influence of chloroform, and all excluded except her physician and nurses. As she becomes conscious she will complain of severe distress in the abdomen, particularly in the region where the pedicle is tied. A half-grain dose of morphine should now be given, and repeated in an hour and a half if there is no relief; one or two doses will generally be found

to be sufficient. A little brandy may be given if there is much prostration. In two hours after the operation the catheter should be introduced and the bladder emptied. This should be repeated every four or five hours, unless it is found that the amount of urine secreted does not require it. Not more than six or eight ounces of urine should be allowed to accumulate at one time in the bladder for the first thirty-six or forty-eight hours; after that it may be left to the calls of nature, and be voided without assistance. In many cases there is a very copious secretion of urine for the first thirty-six hours, and this may be looked upon as a very favorable indication. The constant attention of the physician or the attention of an experienced and judicious nurse, and the frequent and repeated visits of the physician are of the highest importance for the first four or five days. The necessary congestion of the uterus, from the tying and severing of the broad ligament and Fallopian tube, will create a nervous disturbance, which, super-added to an almost exhausted nervous system from anxiety of mind before the operation, will require the presence of the physician, or large and repeated doses of opiates to quiet. Of the two the presence of the physician is much to be preferred, to give calmness and assurance to the mind, with opium alone to relieve pain when it occurs. By these means the pulse is kept down, inflammation prevented, and the time soon passes in which it may reasonably be expected to occur.

The bowels may safely be left quiet for six or eight days, and then be moved by enema.

Twenty-five years ago, with little to guide me and much to learn, I commenced the operation and study of ovariotomy; and from thirty-eight operations, and the examination of nearly four hundred cases of abdominal tumors, I have drawn the foregoing conclusions. They will not be found to differ materially from the opinions of other operators and writers upon the subject, except in the recommendation of the operation in cases where there are firm adhesions to the walls of the abdomen, and in the applica-

tion of cold to the bleeding surface. But having repeatedly torn up these adhesions, and sometimes in doing so denuded large patches of the abdominal walls of the peritoneum, and after treating them with cold, as before stated, I have witnessed no bad results, but a speedy and safe recovery, I have felt assurance in giving it as a rule in deciding upon cases on which to operate. I feel, too, that we are forced to take this step if the operation is to be continued. For, in a large majority of these cases which have attained the size of twenty pounds or more, adhesions to a greater or less extent will be found to exist, and the great difficulty of diagnosing them will render the finishing of the operation so uncertain that no careful operator would commence it, unless he had first decided that they could be broken up and attended to properly and with safety to the patient. Circumstances may be developed in the progress of any operation which would cause the judicious operator to desist from further efforts to finish it. But where the probabilities are that this state of things will be developed in a majority of cases, no careful operator would be found willing to begin the operation.

I will now give a synoptical view of my operations and their results, together with the points of interest in each case.

As before stated, from 1843 to the present time, I have performed ovariotomy on ~~thirty-eight~~ 90 patients. Of these thirteen were unmarried. The operations were all by the long incision, and only two of them were without anæsthetics. In a large majority of cases there were firm adhesions, and in two of them the operation was not completed, owing, in the one instance, to a discovery, after making the incision, of the cancerous structure of the walls of the tumor, and in the other to a circumstance which I shall now mention. The patient had been tapped. There was a single cyst, and the sack, when emptied, had fallen down among the convolutions of the bowels. Peritonitis followed, and close adhesions were formed between the sack and the bowels. The small intestines appeared to be embedded in

the posterior wall of the sack. I emptied the sack and closed the wound, at the same time fastening the opening in the sack to the lower end of the wound by ligature, and thus the wound healed, after withdrawing the ligature on the fourth day. The bowels kept regular, and no peritonitis ensued. In about ten days the cyst began to fill rapidly, and in two weeks the walls of the sack gave way at the point where the ligature came out, and there was quite a discharge of gas and feculent matter. The appetite continued good. The discharges from the bowels were natural in color and consistency, but diminished in quantity. I found that the sack began to contract under the management which was instituted in the case, until, in a few months, as I afterward learned, it was reduced to a narrow canal, which entirely closed within twelve months from the operation. The patient is now enjoying good health—two years after the operation—and no appearance of the disease.

In one of my cases there was ovarian disease on both sides. The right ovarian tumor was much the larger, and weighing, after its removal, twenty pounds. The left, containing, as I supposed, about two pints of fluid, was flattened down over the sigmoid flexure of the colon, to which it was firmly and closely adhered, passing down into the pelvis. There were no adhesions between the two sacks. No attempts were made to remove the left ovary, as, judging from the adhesions, I thought it would be unsafe. This case progressed very favorably until about the third week, when a free discharge commenced from the lower point of the wound. It soon became evident, from the swelling and discharge, that there was considerable sloughing going on in the left side. This condition was soon afterward followed by discharges of gas and fecal matter from the wound. The patient's appetite, however, continued good, and although at first reduced, she soon began to grow stronger and fleshier. The discharge grew less and less, until in five months the wound healed. The patient is now quite healthy, and there has been no appearance of ovarian tumor since.

I will here state, that of all my cases only ~~nine~~ 18 died, and of these I will give a synoptical view. One died from peritonitis, two from hemorrhage, one from chloroform, one from accidental overdose of morphine, one was the uncompleted cancerous case, one from exhaustion, one from congestion of the brain, and the ninth case proved fatal from excessive vomiting.

But permit me now to particularize more fully upon these fatal or unsuccessful cases. In one of the fatal hemorrhage cases the tumor was a large fibrous one, with a very thick pedicle. The ligatures slipped when the pedicle was cut, and the effect may easily be imagined. In the other there were adhesions deep into the pelvis. These adhesions commenced bleeding after the wound was closed, and the hemorrhage was so concealed that I did not discover it until about six hours afterward, when I promptly opened the wound, and found two small vessels from which the blood was issuing. I tied the vessels and again closed the wound, but the patient continued to sink until she died, without pain, in about twelve hours after the operation. I am fully satisfied that there was no further hemorrhage after the second dressing. It was previous hemorrhage and the shock of the second dressing which overcame the patient. In this case there was no secretion of urine after the operation.

In the case of death from narcotism, the patient had been doing well for thirty-six hours, when, from some misapprehension, half-grain doses of morphine were given every two hours, until three grains had been administered, by which time the patient became so narcotized that she could take no more. I saw her shortly after this occurred, but nothing could be done to arouse her. She lingered twenty-four hours longer, and died about seventy-five hours after the operation.

The unfinished, cancerous case died in two days after the attempted operation.

The one from simple exhaustion died in eleven days.

The one from congestion of the brain in seven days.

The tumor in this case weighed one hunded and thirty-six pounds.

In the fatal case from vomiting, the lower thoracic region had become much distended by the cyst, and I found it impossible to bring the ribs down so as to give any support to the stomach, and consequently there was a considerable amount of air inclosed in the abdomen. The patient did well for two days, when she commenced vomiting, which proved uncontrollable, and she died on the third day.

Three of my patients have died since their recovery from the operation of other diseases. The remainder are all living at this time, and enjoying good health.

Two of the unmarried have since married and borne children.

In one of the patients classed among the married the disease had shown itself before marriage. The operation was performed six months after marriage. She has since borne three children, one male and two females—the females were twins. Two of the other patients have borne children.

Of the tumors two were solid, one of them fibrous and bony, weighing one hundred and six pounds, with only the broad ligament for a pedicle. The patient died on the eleventh day. The other weighed thirty-two pounds, and appeared to spring from the Fallopian tubes. It was attached to the uterus, a portion of which was included in ligating the pedicle. The patient died from hemorrhage. The tumor should, perhaps, be regarded as uterine. In one case the walls of the cyst were cancerous; did not remove it; patient died.

Of the other thirty-five cases a large majority were multilocular, and weighed from fourteen to one hundred and thirty-six pounds. The pedicles, in all the cases, were secured by double ligatures, one arm cut short and the other brought out at the lower end of the wound. The ligatures were drawn up straight, but the pedicle was not put upon the stretch.

In one of the fatal cases I had an opportunity of making a post mortem examination. The patient had died seventy-

two hours after the operation. There seemed to have been but slight peritonitis. The ligature from the pedicle was found lying along the walls of the abdomen, neatly incased in lymph, which formed a tube around it through which the discharge from the stump had passed out at the lower end of the wound. This relieved my mind as to the management of the pedicle.

I have had four cases in which the sack was ruptured—three into the cavity of the abdomen, one into the bowel and afterward into the bladder, and, finally, it formed a fistula from the bowel into the bladder. The patient lived for four years in a most miserable condition, discharging gas and fecal matter from the urethra. Of the other three cases one died in an hour after the accident, one in six hours, and the other in one week. She, however, never rallied from the shock. A fifth case is reported to me by Dr. R. Rodgers, of Springfield, Ohio, in which a large sack was ruptured while the patient was nursing a sick daughter. She felt no inconvenience, and in three or four months the tumor disappeared, after having afflicted her for nearly four years. She has for the last ten years enjoyed good health.