LECTURES

ON THE

DIAGNOSIS AND SURGICAL TREATMENT
OF ABDOMINAL TUMOURS.*Delivered at the Royal College of Surgeons of England.*

BY

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LECTURE III—June 14th, 1878.

Surgical Treatment of Ovarian Cysts and Tumours; Tapping, by Abdominal Wall, Vagina, or Rectum; Tapping, with Drainage; Injection of Iodine, or Antiseptics; Incision and Drainage; Ovariectomy—Selection of Cases—Preparation of Patient—Instruments—Anæsthetics; Duties of Assistants and Nurse.

I AM about to commence to-day by considering the question of the surgical treatment of ovarian cysts and tumours. I will begin with the treatment by tapping. There is still a great deal of difference of opinion amongst surgeons as to the amount of danger that attends tapping, and the amount of good that may be gained by it. I think the opinion of the profession is almost as unsettled now as it was when Stilling wrote, some years ago, in his paper upon the extraperitoneal method in ovariectomy, that "no surgeon should ever puncture an ovarian cyst". Tapping, he said, was a "crime"—"never tap". And the belief is general, that ovariectomy is rendered more dangerous when a patient has been tapped. There are still surgeons who entertain that belief; they object to tapping on two grounds: first, that it is dangerous in itself; and next, that it can only be of temporary use; and then, again, they fear that it is likely to be followed by adhesions or some other conditions, which very greatly add to the danger of ovariectomy when it is afterwards performed. With regard to the amount of danger in tapping, it seems to me many of the opponents of this simple proceeding fall into a considerable error in attributing to tapping what ought to be considered as due to the disease. If a patient die after tapping, she does not die because she is tapped; she dies because the tapping does not save her life. She would die if left alone, and tapping gives her relief for a time; the cyst fills up again, again requires tapping, and after one or more tapplings she dies. It is not the tapping that kills her; she dies because the tapping does not save her. I fancy if we make a clear distinction between operations that fail to save life and operations that kill patients, we shall make a distinction between tapping as a mode of relieving for a time a patient suffering from an ovarian cyst and ovariectomy, which if it do not succeed in saving life, kills the patient.

It is very seldom indeed that tapping is in itself dangerous. Occasionally, a blood-vessel in the abdominal wall, or in the cyst-wall, or in the omentum, may be wounded, and the patient may die of bleeding; but that is the rare exception to the general rule, that tapping is attended with very little danger. A greater danger than bleeding is when air enters the cyst, and with the air some elements of putrefaction; putrefactive changes are set up in the fluid still contained in the cyst, or which re-forms after the tapping, and then the patient dies from some form of pyæmic fever or septicæmia. That may be now looked upon as the chief danger after tapping; and it may hereafter probably be lessened or averted altogether by the adoption of antiseptic measures.

With regard to the mode of tapping, it may be done either through the abdominal wall, the vagina, or the rectum; and in either case, we may trust to tapping alone, or to tapping followed by pressure; the punctured opening may be allowed to heal, or the opening may be kept patent by some form of drainage-tube, in the hope that a cure may be obtained by a more or less permanent drainage of the cavity; and with this drainage there may be associated the injection of iodine or some antiseptic fluid. There was a proposal at one time made which has not been very frequently followed, that of purposely leaving the opening in the cyst-wall patent, so that the fluid as it formed

might gradually escape into the peritoneal cavity and be absorbed, producing pretty much the effect of a ruptured cyst.

When tapping through the abdominal wall was performed in the early days, it was done with the patient seated on a chair, an assistant on each side of the patient, a long towel fastened round her, possibly an opening in front of the towel, a pail was placed between the patient's legs, and then the surgeon, taking one of these old-fashioned trocars, with considerable force plunged it into the abdomen. Sometimes a small incision was first made in the skin with a scalpel or lancet, in order to lessen the force necessary to pass the trocar inwards. But it was very soon apparent that the danger which followed tapping in this way was due a good deal, in the first place, to the position of the patient, and, in the next, to the instrument used. The fainting of the patient, even notwithstanding firm compression by bandages or towels, almost necessarily due to the upright position, could be avoided altogether by having the patient in a recumbent position, not taking her out of bed, simply bringing her to the edge of the bed lying on her side, and tapping in that position. In that way, no bandages were necessary, and a very large cyst might be emptied without any faintness being felt by the patient. In some cases, the surgeon would tap a patient with a trocar, and it would be what Sir Astley Cooper called "dry tapping"—no fluid followed. That arose from shortness of the cannula in patients having a thick abdominal wall. I suppose this trocar would hardly go through the abdominal wall of a patient having an inch or an inch and a half of fat; by the time it reached the cyst it would barely enter it; and then, when the trocar was withdrawn, the fluid, instead of passing through the cannula, escaped into the peritoneal cavity. Again, supposing one did with a trocar of this kind enter the cyst, and removed the trocar, leaving the cannula in the cyst, after a certain amount of fluid had escaped, the cyst contracted and fell off and sank into the peritoneum, so that no more fluid escaped, or it came away only gradually. I have seen all these things occur myself; and the first thing I did in altering the old instrument was to increase the length of the cannula; and by simply lengthening the cannula I avoided both the danger of not opening the cyst, and that of the cyst falling off the cannula. Then Mr. Thompson of Westerham made the great improvement, of which there is an exaggerated specimen here. He arranged the trocar in such a manner that, when it entered the cyst, the trocar was withdrawn beyond the point at which the fluid escaped down the long flexible tube; he thus effectually prevented any danger of air entering from the outside into the interior. He took a great deal of trouble to do this by putting the tube into a vessel of water, sucking at one end until the water rushed up through the tube. By advancing the trocar, he kept the tube full of water, and as the lower end was under water in the pail beside the bed, of course no air could come up and get into the cavity of the cyst when the piston was withdrawn. I soon found that filling the tube with water was quite unnecessary, because it was only a question of the level at which one passed the trocar into the cyst. But there were one or two objections to this instrument. In the first place, there is a little interval of time—a moment—between the entrance of the point into the cyst and the withdrawal of it, in which instant there may very possibly be some escape of fluid between the sides of the cannula and the punctured cyst. I have seen that occur in ovariectomy, and I have no doubt it occurs also in ordinary tapping; so that I was anxious to avoid that moment which is lost between the entrance of the trocar and the removal of the piston leaving the cannula free. It occurred to me that a common steel-pointed pen would do as well as anything; and I thought if that were passed into the cyst, the fluid would run freely away, and it would be easy to make a syphon trocar. After a little trouble, my suggestion was carried out, and the instrument I now show was the result of that trial, and it is the one which I have used ever since. The point is exactly like the point of a steel pen, and is so made that it does not cut a piece out of the abdominal wall, but simply enlarges the opening made by the scalpel. A small opening is made first by a lancet or scalpel, and then this instrument is easily passed into the cyst. It is evident that, if this were left in the cyst, it would be dangerous when the cyst was empty; a sharp point like this in the interior of a contracting cyst would be pretty certain to wound it; so I added a blunt cannula. I first put the cutting point inside, but afterwards found it better to slip up the blunt cannula inside the sharp tube, and that is the form of instrument now used, passing with the point directed downwards, so as to avoid any rush upwards of air which might occur if the point were at a higher level than the end of the tube. With the tube, the instrument at once becomes a syphon, and this calibre is large enough to allow the escape of viscid fluid. There are several small openings in the cannula; because, if one opening be too large, there is the possibility of the entrance of little bits of omentum or small shreds or clots, which may be in the interior

of the cyst. These would block the tube; therefore it does not do to make one opening too large. By fixing a long elastic tube on to the end of this instrument, the fluid is carried silently away into a vessel under the bed; the patient does not hear any splashing, and there is no possibility of any air entering into the cyst. Supposing the fluid—whether peritoneal or cystic—is in the peritoneal cavity, or there is a doubt as to where it is, it is desirable to remove such fluid without the possibility of wounding any uterine tumour, or any mass of cancer, or injuring the intestines or omentum. For this operation I contrived this form of blunt conical cannula, which is used after a simple lancet-puncture. On passing a lancet or small scalpel through the abdominal wall until fluid appears, then removing the knife and pushing this hollow tube into the cavity, the fluid at once rushes away. The tube may be moved about as a probe to feel whether any tumour is free or adhering, and we can do that without the slightest fear of doing any harm. With these several small openings, there is no fear of portions of omentum becoming entangled by the pretty strong suction that goes on through the long syphon.

There have been one or two modifications made in this instrument. Here is one by Dr. Fitch of New York, and he believes the form of protector is of some little consequence. He calls his the "dome-shaped" trocar. It is precisely the same as mine, except that the guard is made in a dome shape. It is quite easy, supposing one wishes to wash out a cyst, to fix an ordinary enema-syringe to the end of the elastic tube, and either to exert suction on the fluid contained in the cyst, or to inject any antiseptic liquid, and draw it out again by reversing the action of the syringe.

Tapping through the abdominal wall in some cases becomes not only a means of temporary relief, but if the cyst be really a single cyst it may be followed by the complete cure or recovery of the patient. I have known, now, a great many cases where, when the cyst proved to be really single or unilocular, it never refilled after the first tapping; the patient was by this very simple means completely cured. So I think we may lay down almost a positive rule, that, when we can be sure that the cyst is a single cyst, and we cannot discover any secondary growths in the cyst-wall, by examination by either the abdomen or the vagina, we must consider it a duty to see what tapping will do for a patient before adopting more serious measures. I think I have seen quite enough now to warrant me to endeavour to impress upon surgeons that, if the cyst be a single cyst, before they do anything else they should see what can be gained by one tapping. If the tapping be done with precaution, the risk is extremely small; the patient loses nothing, and may be cured. There are a great many cases recorded in my book to prove that fact, and also to show that the mortality of ovariectomy, supposing it afterwards becomes necessary, is very little affected indeed by previous tapplings. I gave a table showing what the effect of one, two, and many more tapplings, up to eighteen, had been upon the mortality, and the difference seemed to be very trifling.

In tapping through the vagina or rectum, a somewhat different instrument is used; either such a long instrument as that, or a similar trocar fixed upon an elastic catheter, which may be tied in and left, if necessary; or, if it be desirable to introduce a drainage-tube, then the instrument is much more curved. The point is carefully guarded by the finger, and, when one is quite sure where the point is, it is pushed into the cyst, and it is occasionally quite possible to introduce it near the uterus and bring it out nearer the rectum; to then attach a piece of drainage-tube to the slit in the point of the trocar, and draw it through, leaving it in the cyst after removing the cannula. That is not very easy to do; but I have done it, and in the days when more was thought of drainage than is the case now, it occasionally proved useful. It was used rather after ovariectomy, when a collection of fluid formed in the pelvis, than in treating ovarian cysts, because it would only be when the cyst was low down in the pelvis that it would be advisable. Sometimes, when there was a solid portion of the tumour high up in the abdomen and the more fluid portion in the pelvis, one could empty it in this way by the vagina or rectum. There was a discussion some years ago as to whether it was better to do it by the vagina or by the rectum, and at one time the argument was used that it was much safer to do it by the rectum, because there was a greater probability of air entering the cyst through the vagina; and the answer to this was manifestly that one would rather have an entrance of atmospheric air than of faecal gases.

Pressure following tapping was at one time very much the fashion; but I think it has entirely fallen into disuse. No surgeon now thinks very much of the use of long-continued pressure after tapping; it is very likely to inconvenience the patient, and may more probably occasion adhesions than if the patient be simply left alone with an ordinary amount of support. The formation of an intraperitoneal opening in a cyst-wall, I think, also is entirely abandoned. It was a proposition

made by Sir James Simpson of Edinburgh to cut a small piece out of the cyst-wall and then to let the cyst retract and empty. It is only in the single cyst that this could be of use, and in a single cyst the object would be much more simply and equally well effected by simple tapping.

With regard to the formation of a permanent opening through the abdominal wall or through the vagina, so as to cure a cyst by drainage, that may occasionally be useful, but I think only in very exceptional cases. It is a very tedious process; the patient remains for weeks, possibly months, in a state of great discomfort; she is exposed to the danger of suppurative action going on in the cyst, and to the fever which accompanies it, and it is only in exceptional cases that a cure is the result. I have seen patients cured in this way, but the cases have been few and far between.

Then, with regard to incision and drainage, making an incision into a cyst, and draining it when it cannot be removed, is not an intentional practice, but one to which a surgeon is driven who begins to do an ovariectomy and finds that he cannot complete it. The cyst is incised and emptied, and then it is found impossible to remove it. In that case, any portion of the cyst which has been separated may be fixed to the abdominal wall and the wound closed as far as is necessary, still leaving a sufficient opening for a tube to be passed low down to the bottom of the cyst, which may serve for drainage and for antiseptic injections. There are instances on record, apparently very hopeless, which have got well in this way. I have now a young woman acting as assistant to a nurse of mine, to whom last year this very thing occurred. The cyst was opened and was adherent everywhere; it was quite useless to attempt to separate it, so I closed the opening around a drainage-tube, and, after some months of drainage and syringing with carbolic acid, iodine, and other antiseptics, and at last with sulphurous acid, which seemed to act better than anything else in that case, it completely healed, and she is now in perfect health, and has made a recovery from what otherwise would have been a very hopeless condition indeed.

We will suppose now that we have a case to deal with in which tapping could be of very little use; or we will suppose that tapping has been tried; that fluid has re-formed after repeated tapplings; that all ordinary treatment has proved of no avail, then arises the question, "Is this a case in which ovariectomy should be recommended to a patient?" and the sort of common-sense rule that I have been in the habit of following has been to say to a patient, or to the medical man with whom I am in consultation: "So long as this patient is moderately comfortable, so long as she can walk a mile, or for half an hour, without much inconvenience, so long as she can get up and down stairs, so long as there is no great pressure upon any of the organs of the abdomen or pelvis, and she can breathe pretty well, and her heart is not interfered with, such a patient as that may be left to ordinary palliative treatment, with the usual attention to the general health." But I should also say that, if the operation be delayed for a time, she should not be subjected to any useless treatment; that it is quite useless to attempt, by iodine, or bromine, or lime, or by gold, or by any other remedy, to attempt to diminish the size of the tumour, or to check its growth. All that is quite useless, and might be very injurious to the patient. Then there comes a time when the patient is so far inconvenienced by the tumour, is so much distressed by its size, that she cannot move about without great discomfort; her general health is suffering; she is losing her rest, becoming thin, and some serious damage is being done by the pressure of the cyst; that is the time when the surgeon must interfere. The question then arises, With what prospect of success can the operation be done in any given case? Is this a case in which the patient will probably recover? or is it a case in which she will very likely die? Of course, that is the question which every patient presses upon the surgeon. She does not care to know that the mortality is 20 or 25 per cent.; she wants to know what the probability of her own recovery is, and that is the point one has to consider. Some patients will urge the operation upon the surgeon when they themselves are in very desperate circumstances. They may be almost at the point of death, and then wish the surgeon to step in and relieve them, they having previously resisted all advice from him. Quite lately, I saw a lady whom, a year ago, I strongly advised to have ovariectomy performed. She steadfastly resisted; she said she was old; she could get relief by tapping; she would get on as well as she could; and then, after some five or six tapplings, she gradually fell into such a state of suffering and exhaustion that, when the heart was almost stopping, she regretted that the operation had not been done earlier. It is necessary to explain to the patient that, if the operation have to be done, as it probably will have to be done, it must not be put off until there is no reasonable hope of its being performed successfully. In some cases, the surgeon, on the other hand, is pressed

to operate long before he thinks it is justifiable. A young woman wants to marry, or a wife wants to join her husband in India, or she does not like her appearance; unpleasant remarks are made about it, and then, in a case where the surgeon knows tapping will do but little good, the tumour being either multilocular or solid, he may occasionally, under such circumstances, operate quite legitimately and properly much earlier than he would if there were no such domestic reason.

With regard to the mode of estimating the risk of the operation in a given case, I should like to repeat the rule I laid down many years ago, that the probable result of ovariectomy can be estimated with far greater accuracy by a knowledge of the general condition of the patient than by the size and condition of the tumour; that from a patient with a good sound constitution one can remove a very large tumour having very extensive adhesions, and she will probably recover; whereas, among people who have been drunkards, or in whom the constitution has otherwise been impaired, or who have a feeble heart, unhealthy kidneys, or diseased liver, the operation is much more hazardous than in a healthy person. The size of an ovarian tumour alone has not appeared to me to affect the result very much; the removal of some very large tumours has been followed by recovery, whereas death has followed the removal of much smaller ones. And a patient who is accustomed to the life of a sick-room bears an operation much better than a person taken from the ordinary pursuits of active life and at once subjected to an operation. In consenting to operate upon patients who wished to go to the opera one night and to be operated upon the next day, I have learned by one or two rather painful lessons that it is far better to put off the operation till the patient is somewhat weakened or accustomed to the life of an invalid.

The size of an ovarian tumour alone, I say, does not very much affect the result; but, if it be a very large solid tumour, requiring a very large incision for its removal, the incision extending very nearly to the sternum, then the risk is very much greater. I have found, if a tumour could be removed by an incision not exceeding five or six inches in length, the mortality is considerably less than when it necessarily extends to nine, ten, or eleven inches. Adhesions, as I mentioned the other day, if only to the abdominal wall, do not much affect the result; if they be low down in the pelvis, the mortality is considerably increased by them.

Almost the only positive contra-indication to an operation, I think, would be the fact that the patient has some other disease which, if it pursued its natural course, would certainly kill her. I do not think it would be right to perform ovariectomy on a patient dying with phthisis, although I have had to do it in the Samaritan Hospital with a patient in a very advanced state of phthisis; but she was suffering so much from the presence of the ovarian tumour, and was so urgent for relief, that I removed it, knowing very well the condition of her lungs. She lived for a month, very much relieved by the removal of the tumour, and I do not think her life was shortened by the operation; still her death a month after operation does somewhat affect the statistics. I think it is very rarely that one would be justified in doing an operation of that kind supposing one knows a patient has serious kidney- or liver-disease, or disease of any kind which, independently of the ovarian tumour, would, sooner or later, certainly kill her.

With regard to the suspicion of cancer, and how far that should decide the surgeon not to remove an ovarian tumour, I think, if one were certain it was cancerous, one ought to be content with tapping, removing any peritoneal fluid that might be formed around it, and not attempting to remove it. The disease would almost certainly return. But still again I have seen some very extraordinary cases in which I have removed ovarian tumours which appeared at first sight to be ordinary multilocular tumours, and where a careful examination showed evident proofs of malignant growth, yet the patients for a long time remained in good health. In one case, it was ten or eleven years before there was any return. So I think even the knowledge that a tumour was in all probability cancerous would not allow one to put operation aside altogether; but it necessarily obliges the surgeon to be very much on his guard.

I was going on to some other points as to the influence of age, social condition, and so on, of a patient upon the probable results; but the time is so short that I will now suppose we are about to do ovariectomy; and I will refer for a minute to the conditions under which it ought to be done and the preparation of the patient, the place in which she should be operated on, and so on. The place, I need hardly say, should be as healthy a place as we can find. The patient should be lodged in the best house, in the best sanitary condition, and in the best room, that can be secured for her. Then I do not know that I need say anything about her medical treatment before the operation, except simply that her bowels should be relieved, and any evident concentration of urine corrected by citrate of potash or some

other simple saline. Then, having procured a room for her either in a hospital or a private house, or in one of the nursing institutions which are now becoming common in London, the room must be so arranged that, after the operation, she can be kept perfectly quiet. The room must be well ventilated, though she must be protected from any current of cold air, and at the same time not overheated.

The table on which the operation is performed (it is useless to try to perform it on the bed) should be arranged near a window, so that the light falls on the table diagonally; then the surgeon does not stand in his own light, and the assistants do not interfere with him. The patient is brought in and lies down on the table. Her feet and legs are carefully wrapped up; and she is covered by a blanket, and a strap is fastened over her knees, so that she cannot throw her limbs about. It is well also to tie the hands; and nothing is better for this purpose than an ordinary bandage, making a loop, passing it over the sleeve of the dressing-gown, and tying the hands down to the legs of the table. Each hand should be tied down, and then she cannot interfere with the surgeon; and one or two assistants are thus dispensed with. In the next place, one wants to protect the clothing. If she have simply a night-dress on, with a flannel about her shoulders, she and the bedding are completely protected by the use of a sheet of waterproof cloth with a hole in the centre, around which on the inside adhesive plaster is spread to the extent of an inch or an inch and a half. That is thrown over the patient, and adheres to the skin of the abdomen, which, I should say, ought to have been previously well cleaned. The upper part of the sheet comes up nearly to the chin of the patient. Lately I have had it made larger; and we have a simple contrivance by which the sheet can be held up in order to protect the patient's face from the carbolic spray, supposing it to be used. The patient lying thus, with the gentleman giving chloroform at her head, she is completely protected by the India-rubber cloth from the spray, which is directed from the spray-producer and plays upon the abdomen.

We now suppose the patient is lying upon the table, and fastened there; the next thing to be done is of course to put her under the influence of some anæsthetic. I have no doubt whatever myself, from long trial of it, that the bichloride of methylene, as it is called, is a far safer anæsthetic than chloroform. Since I have used it, I believe in more than six hundred cases of ovariectomy and more than three hundred operations of other kinds, I have never once been in the smallest anxiety about a patient. Now, every surgeon here must know how very frequently, when chloroform is given, he is looking at the patient to see whether he is, I will not say likely to die, but whether he is not injuriously affected by the depressing influence of the chloroform. I can say for myself that several times, when chloroform was given in my earlier cases, I was extremely anxious about them. In two cases, I had to stop the operation and commence artificial respiration. I have seen several other cases in which, either at the time of the operation, or from protracted chloroform vomiting afterwards, the patient, if not killed, certainly had her chances of recovery considerably diminished, simply by the action of chloroform at the time of the operation or some short time afterwards. I have never seen anything of the kind which I think could be fairly attributed to the action of bichloride of methylene. Provided it is carefully given in a proper apparatus, I have never seen the smallest cause for anxiety. This apparatus was contrived by Dr. Junker a good many years ago. The bottle is graduated to contain an ounce of methylene. The administrator fastens the bottle to his coat, and the mask is placed over the mouth of the patient. Then, by simply acting on the bellows, the air passes through the methylene, becomes charged with the methylene vapour, and the patient inspires it in the quantity of methylene vapour which the air will take up. I am told by chemists this cannot exceed 4 per cent., but, as a rule, at ordinary temperatures, it takes up scarcely more than 2 per cent.; at any rate, you cannot get it to take up more than 4 per cent.; and diluted vapour, 4 per cent. of methylene and 96 per cent. of air, is positively safe. I have heard of two deaths from methylene, but it was not given with this apparatus; it was given in a sugar-loaf cone made of leather, with a piece of sponge or lint put into the cone and saturated with the methylene. This was placed over the mouth of the patient, who breathed the vapour of methylene without any mixture of air. That is rather death from suffocation, or death from too strong vapour of methylene, than death from methylene properly administered. I believe there has been one other death from methylene, in which it was administered by this very apparatus, but the circumstances were peculiar. I am informed the patient had been drinking the night before. Full particulars of this case have been sent to the Committee at Glasgow investigating this subject, for report at the next meeting of the British Medical Association at Bath. The bichloride of methylene, of which this is a specimen, I am told by Dr. Oscar Liebreich, is not really bichloride of methylene. Chemists have found that, if they obtained true bichloride of methy-

lene, they could not keep it—it very soon changes; therefore, it has a certain amount of impurity, a certain admixture of alcohol with it, by which alone it can be kept. If true pure bichloride of methylene could be made, it would cost about a guinea an ounce, and would not keep half an hour, so that this is a mixture of pure bichloride and spirit. I have seen it made. The chloroform and alcohol are placed in a retort with sheets of zinc and boiled; as distillation goes on, one atom of chlorine leaves the chloroform, and the zinc is converted into a chloride. Some people say it is only a mixture of chloroform and spirit; but that certainly is not true, because the vapour of it burns, while, as you very well know, the vapour of chloroform does not.

The nurses have sponges and water all ready—sponges of a certain size, thoroughly well cleansed and in sufficient number, neither too large nor too small. If they be too small they may be lost, and if they be too large they cannot be introduced. The assistants are ready. There are only two required: one stands opposite the operator to be prepared to assist him in tying any vessel, and more particularly in preventing the coming out of intestines after the escape of the cyst from the abdominal cavity. If the assistant be not careful as the cyst is drawn out, the intestines follow, and give a good deal of trouble; but, if he carefully hold up the abdominal wall, keeping the edges of the wound together, it is impossible that any intestine can follow the cyst as it escapes. He passes the middle finger inwards under the umbilicus, and the forefinger to the right and the thumb to the left of the wound, and holding the edges closely together as the tumour comes out of the abdomen. When I first saw ovariectomy done, and when I first did it myself, we were told always to have wet flannels and warm water to wrap up the intestines if they came out. I have seen all the intestines of a patient on the table wrapped up in warm wet flannels; the result was a quantity of wool from the flannels adhering to the intestines, which had to be cleaned off before they were returned.

Then, as to the instruments one uses. First, an ordinary scalpel—working rather with the point of the instrument than with the shoulder. Next we have a number of what are called my torsion-forceps, to hold any vessel in the abdominal wall. Supposing a vessel is bleeding, it is caught in a moment, and the forceps hang down holding the vessel, so that, when the peritoneal cavity is opened, no blood drops into it. I have them plated with nickel, so that they never rust. The bleeding vessels having been stopped, the next step is to divide the peritoneum, catching hold of it previously with forceps or by one of these little hooks. The advantage of the hook is that one is less likely to catch a bit of cyst with it. If the cyst be lying close to the abdominal wall when you are catching up the peritoneum with the intention of dividing it, you may catch the cyst also, and sometimes divide it as well as the peritoneum. That is avoided by using this hook. One or two flat touches of the scalpel on the peritoneum are sufficient to divide it. Then a broad director is passed into the opening, and, with a blunt-pointed knife, the peritoneum is very safely divided. I rather insist upon this blunt point, because, with a sharp-pointed instrument, supposing there is a bit of intestine adhering to the abdominal wall, it may be injured, or a sharp-pointed knife might enter the bladder if it were high up. Having laid bare the cyst by the incision of the peritoneum to the extent of three or four or five inches, it then becomes necessary to empty the cyst, and this is done by the form of trocar I have here, which is just one of the trocars I showed you for tapping, but of a larger size, and furnished with outer spring-hooks to fasten the cyst. It is passed into the cyst, then the point is withdrawn, and the fluid rushes through the cannula into the pail below the table. As that is done, the outer hooks are opened, the cyst is caught hold of and easily fastened to the cannula, and pulled out through the opening in the abdominal wall; the fluid passes out, the cyst is held by these grasping claws, and, if the cyst be free, it of course readily and easily follows the instrument. If any adhesion be noticed as the cyst comes out, it may be separated; but I must reserve any further description of that till the next lecture.

BASFORD RURAL DISTRICT.—Mr. Whitgreave commences his report by congratulating his sanitary authority because they will soon have what they have patiently waited for for years—viz., a plentiful supply of pure water. The birth-rate is calculated to have been 42.64, and the death-rate 19.58, or 19.36 if 518 colliers who came into the district in 1877 be included in the population. There were 1,986 births and 912 deaths, so that the births were more than double the deaths. Inflammatory diseases of the lungs caused a large mortality, especially in the Greaseley registration district, which Mr. Whitgreave cannot account for. The mortality amongst infants was high, as 35 per cent. of the total deaths occurred amongst children under one year old; and 16.4 deaths under one year were registered to each 100 births, which is much above the average of rural districts in 1877. There is a full account given as to the removal of nuisances by the inspector.

CONTRACTION OF THE FINGERS (DUPUYTREN'S CONTRACTION),

AND ITS SUCCESSFUL TREATMENT BY SUBCUTANEOUS DIVISIONS OF THE PALMAR FASCIA, AND IMMEDIATE EXTENSION.*

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CONTRACTION of the fingers takes place from a variety of causes; and the pathological conditions will be found to vary according to the nature of the producing cause, such, for example, as local injuries, with laceration of tendons, deep abscesses in the palm of the hand, burn-cicatrices, etc. But in the present paper I propose to direct attention to one form only of finger-contraction, commonly met with in men about the middle or beyond the middle period of life—very rarely at younger ages. I have never seen it in women.

The contraction may affect one finger alone; in which case, according to my observation, the ring-finger is most frequently drawn down towards the palm of the hand, but some authors state that the contraction most frequently commences in the little finger. The contraction having commenced in one finger, however, the adjacent fingers are in most cases gradually drawn down, though to a less extent. I have frequently seen the ring-finger severely contracted, so that its tip would nearly touch the palm of the hand, and the middle and little fingers contracted to about half this extent. I have seen the contraction sometimes limited to the little finger. The index-finger and the thumb usually escape. I have never seen them more than slightly contracted. In these contracted fingers, the articulations are generally in a healthy condition; the joints can be flexed freely, but any attempt at extension is painful, from the resistance offered in severe cases by a tense contracted cord passing from the finger into the palm of the hand, to which the skin of the palm is closely adherent. The skin in the palm of the hand near to the base of the contracted fingers is commonly drawn into thick knotty folds.

The pathology and treatment of this form of finger-contraction always has been and still is the subject of much difference of opinion; and Dupuytren appears to have been the first surgeon to investigate the anatomical conditions by dissection. In the report of his clinical lectures,† it is stated that when Dupuytren heard of the death of a man who was the subject of this affection, he “was determined that this remarkable disease should not remain unknown. The arm was given to him, and he made a careful dissection. The skin having been removed from the whole extent of the palm of the hand and the palmar face of the fingers, the fold or the puckering of this structure entirely disappeared; it was, therefore, very evident that the arrangement which presented during the disease did not depend on this cause, but was communicated to it; but how, and by what? The dissection being continued, the Professor discovered the palmar aponeurosis extended, retracted, and diminished in length, its inferior part being divided into cords, which passed on to the sides of the affected finger. In extending the finger, he observed that the aponeurosis underwent a kind of tension of crispation—this was a ray of light; so he considered the aponeurosis was something in the effects [to be the cause, W. A.] of the disease. He cut the prolongations on the sides of the fingers, and immediately the contraction ceased, the fingers returned to a state of semiflexion, and by slight force to complete extension. The tendons were natural; the sheaths were not open; the articulations, ligaments, synovial membranes, and bones, were in their normal or natural state.” Since Dupuytren made this important contribution to our knowledge of this affection, it has been sometimes spoken of “Dupuytren's finger-contraction”: a title as useful as it is also a just compliment to the great surgeon, distinguishing it from all other forms of finger-contraction.

M. G. Goyrand‡ of Aix also records the dissection of the hand of a man, seventy-two years of age, affected with this form of finger-contraction; and the description agrees very closely with that of Dupuytren, although he regards the lateral bands extending along the phalanges not as digital prolongations of the palmar fascia, but abnormal fibrous fasciculi, which extend from the fascia to the sheaths of the flexor tendons, into which they are inserted opposite the second phalanx.

* Read before the Royal Medical and Chirurgical Society, May 22nd, 1877.

† Selections from the clinical lectures delivered at the Hôtel Dieu, Paris; delivered in the session 1831 and 1832, by Baron Dupuytren. *London Medical and Surgical Journal*, vol. i, p. 267. London: 1832. Renshaw and Rust.—The observations of Dupuytren on this subject are fully recorded in his *Leçons Orales de Clinique Chirurgicale*, tome premier, p. 1. Bruxelles: 1832.

‡ *Gazette Médicale de Paris*, 1835, p. 481.