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CONTRIBUTIONS

TO THE

SURGICAL TREATMENT

OF

TUMOURS OF THE ABDOMEN.

PART I.—*Hysterectomy for fibrous Tumours of the Uterus.*

BY

THOMAS KEITH, M.D., LL.D. Edin.,

HONORARY FELLOW OF THE AMERICAN GYNÆCOLOGICAL SOCIETY, ETC.

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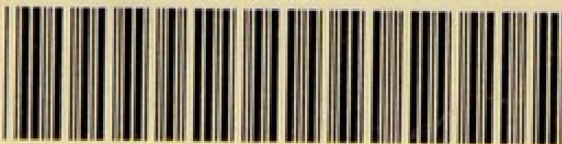
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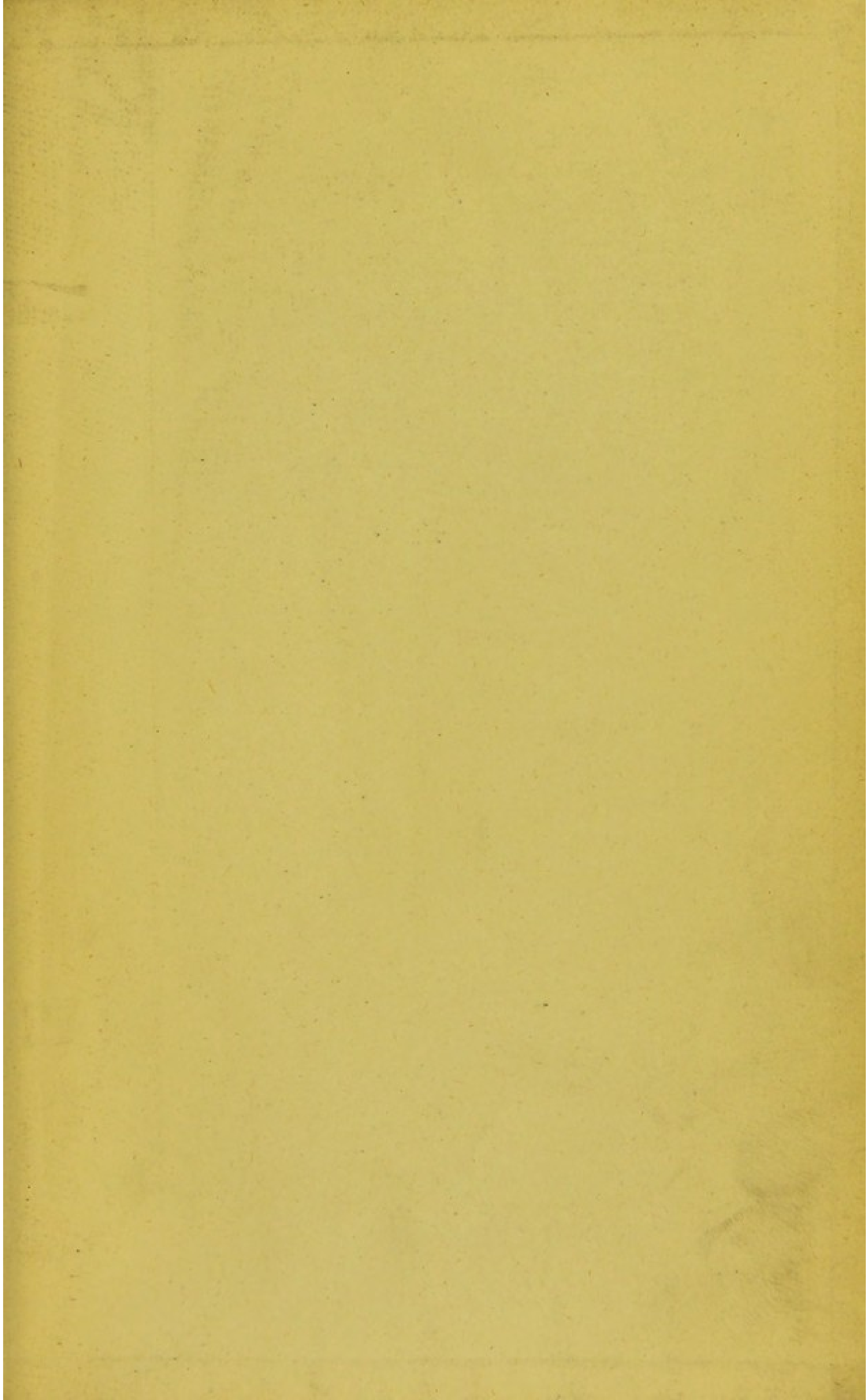

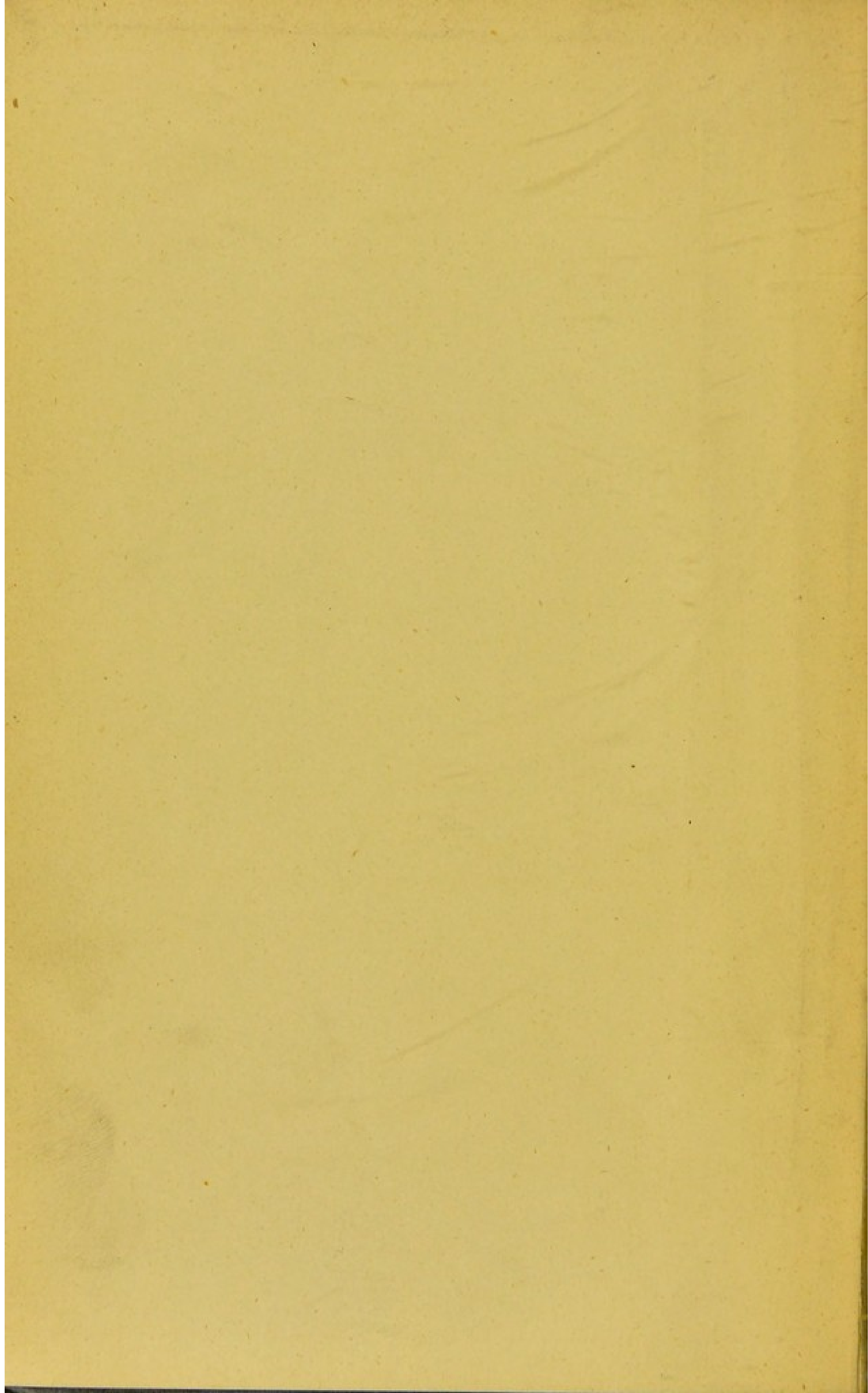

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To

ALEXANDER J. C. SKENE, Esq., M.D.,

Professor of the Medical and Surgical Diseases of Women,
Long Island College, Brooklyn, New York.

Dear Dr Skene,—

Many years ago, you came and sat with me for a time and then went away,—just as too many American friends, whom I am unwilling to let go, so often do. Since then, though we have not again met, you have laid me under many obligations. Knowing well, how far behind you our hospital teaching is, in some departments of woman's surgery, I sent my son some years ago to America to study your ways, and to be for a time under the influence of such minds as those of Marion Sims, Emmet, Thomas, and your own. Of your goodness to him, as well as to other members of my family, I do not trust myself to speak; in our household you are spoken of every day, and your happy and hospitable home is known amongst us by the name of the Skene House. For all that you have done for me, I am content to remain your debtor.

Now, I am going to ask you to take the so-called Scotch present—a something that does not cost the giver much. I write little, for I know little. I am every day changing the ways of my work, and the dread of giving an uncertain sound is heavy on

my mind. The following pages contain simply the notes of every case of uterine tumour—forty in number—that I have ever in any way interfered with by abdominal section ; you are left very much to draw your own conclusions. And, after all, I offer you something that is not mine, but is of American origin ; for though hysterectomy may have been performed by others by misadventure, if I greatly mistake not, the first case of uterine fibroid, diagnosed before operation, was removed by my old friend Dr Kimball, of Lowell. This increases the pleasure with which I now venture to offer you—as a friend and an American—these notes. It is a little thing to give you, but it is given in the fulness of a grateful heart ; and with all good and kind wishes, I remain,

Your sincere friend,

THOMAS KEITH.

EDINBURGH, 1*st January* 1885.

HYSTERECTOMY FOR FIBROUS TUMOURS OF THE UTERUS.

THE natural history of the ordinary uterine fibroid is different from that of other tumours. As a rule, it has only a limited life. Other growths go on, and vex or kill according to their nature or place in the body. A stone in the bladder, if it be not taken away, is there for ever, and as it grows, it torments the more ; but, to the woman with a fibroid uterus, who has passed the best of her years in weariness and pain, middle age brings relief, and old age may be spent in peace. Hence the difficulty in knowing how far we are justified in advising interference for a disease that troubles for a time, though it rarely kills. It is often said that the operation for the removal of uterine fibroids is in much the same position now that ovariotomy was five and twenty years ago. It is not so. It never will be so. The history of these two diseases is entirely different. As a rule, ovarian disease is a merciless one : it goes on and kills. As a rule, the active existence of an uterine fibroid is limited : it rarely interferes directly with life. When menstruation ceases, the troubles of the patient soon begin to pass away, while the tumour itself, after a time, becomes smaller, and in a few years little or no trace of it may be found. The patient gets along, lives more or less comfortably, generally not even aware of its existence, and dies of something else. Indeed, a large proportion of fibrous tumours interfere little with a woman's

comfort during the whole menstrual life. Patients often become anxious about large growths, of the presence of which they were unaware, till their attention was called to them by their friends. But in a certain proportion—not necessarily in cases of large tumours, and if I were to make a guess I would put the number of such at about five per cent.—life is a long weary burden ; a little respite is got only during a short interval between the periods, and often there is not even that. These unfortunates live on somehow, a burden to themselves and to their friends, but they rarely die from their tumour. In an advanced case of ovarian disease, be the local difficulties what they may, one can honestly encourage a woman to run any amount of risk. She has not much to lose—a few months only, it may be, of ever-increasing suffering—and she may gain much by an operation, having much to gain. It is quite different in the case of nineteen-twentieths of those who have a simple uterine fibrous tumour. They may have years of fair health before them ; and even in the worst of them, the chances are, that they will live on—not in comfort, certainly, some perhaps in misery—but still they will live and not die. These have not much to gain by chancing a dangerous operation, and they may lose much, having much to lose.

Till of late years, uterine tumours were let lie undisturbed unless when they were mistaken for ovarian cysts ; but the restless surgery of to-day will let nothing alone ; it has no patience for the menopause, and would attack all and sundry in some way or other, till one almost begins to think that individual responsibility has become old fashioned and gone out of date. So far as operations for the cure of this disease have yet gone, the mortality is out of all proportion to the benefits received by the few. In the last edition of his book, Sir Spencer Wells gives his results after hysterectomy as follows:—Twenty deaths in thirty-nine completed operations, or one in every two operated on. In thirty-one explora-

tory incisions for fibroid, partial operations or attempts at removal, one out of every six died; while of those who survived the abdominal section, brief notes are given of other eleven cases, fatal, mostly within two years, some within one. The most successful of all the London operators by far is Dr Bantock, and his numbers are the largest. Abroad, the best results have been got by Professor Schrœder of Berlin and Dr Hegar, whose mortality is not above ten per cent. Dr Bigelow of Washington has lately collected all the cases placed on record up to March 1884. At best, this must be an imperfect list, and can only show the least bad side of the operation. Of 359 operations there were only 227 recoveries and 132 deaths, or a greater mortality than one out of every three operated on.

Had this frightful mortality been the result of operations done for the extreme cases of uterine tumours, where the sufferings were great and life had become a useless burden, then there might be some excuse for it, but many of these operations were done in cases of small tumours that were giving little trouble, or of peritoneal outgrowths that were giving still less; and then the disease for which these operations were performed is, of itself, only very rarely a fatal one. The sum of misery in these 359 operations to the subjects of them, and to their friends, is something simply incalculable. So far as hysterectomy has thus gone, it has done more harm than good, and it would have been better that it had never been. If these be the best results that surgery can give, then the sooner this operation is laid aside the better.

Fortunately for those afflicted with uterine fibroids, the prospect of relief that has lately opened out to them, by the safer operation of removing the ovaries, is one welcomed by all. This will diminish the number of cases for hysterectomy, though it will not supersede it altogether. For the success of the operation of removal of the ovaries and tubes,

it seems to be almost essential that it should be performed when the tumours are small; the ovaries will then be almost easily reached; whereas, if the tumour be allowed to grow large, there is a probability that one, or perhaps both, ovaries may not be removable even when got at. I have failed, in nine of the thirty-eight hysterectomies that I have performed, to remove the ovaries, simply, I believe, because the operation was generally attempted in cases where the tumours were too large, and in every one of these, I had to go on and remove the uterus—sometimes under very unfavourable conditions. Sometimes the ovary is so low down in the pelvis and adherent, that it cannot even be reached; sometimes in very large tumours, it is elongated and embedded in the capsule of the tumour in such a way that—knowing how vascular the capsule is—it would be a most unwise proceeding to attempt interference with it in any way. Those who were present will not soon forget a scene that happened one afternoon in the hospital here. The operation was one for the removal of the ovaries for great pain, and to check the growth of a small bleeding fibroid. It was late in the day when the operation was begun. Both ovaries were felt enlarged and fixed on the tumour, each being about three inches from the middle line, about the level of the iliac crests; a short and simple operation was expected. The right ovary, with the Fallopian tube enormously enlarged, was closely adherent on the tumour. This, with the end of the tube, was tied, with barely room to hold the ligatures, a small fragment of ovarian tissue being left included in the ligatures; of the left ovary, only a small part the size of a walnut could be brought into view. A long fine trocar was pushed into it, and some thick tarry-like fluid escaped; but on putting on the aspirator, several ounces came away. The left ovary was evidently much larger than was expected. The opening was enlarged, and the hand got in. To do this, some adhesion

had to be separated, and there was some surface bleeding. An elongated cyst, closely fixed on the tumour, was now felt, extending beyond the reach of the hand, and dipping down into the pelvis. At last, by separating more adhesion, and causing more bleeding, I was able to feel the distal end of the ovarian cyst, but it was all firmly incorporated with the capsule of the tumour. With some force the whole was stripped off. It was seven or eight inches long, and with it a dilated tube. At once the wound filled with blood in the most alarming way. Sponges were packed in, and after waiting for a time, these were withdrawn, when the hæmorrhage went on as much as ever. This process was repeated over and over again. I would now fain have removed the uterus, but this was not practicable from the way the tumour was fixed in the pelvis, and, indeed, everywhere. The wound was more enlarged, and part of the bleeding surface was with difficulty brought into view. Some points were stopped by the thermo-cautery, but on removing the sponges, blood came as fast as before. A pair of long forceps could be pushed quite low into the left side of the pelvic cavity, which was full of blood-clot. It was now getting dark, and the patient was like to die on the table. A sponge soaked in perchloride of iron solution was pushed down, left for ten minutes, and then slowly withdrawn. A large tube was put in, a few stitches above and below were introduced, and nearly half the wound was left open in the centre. As the patient was placed in bed, blood was again filling the opening. Pressure with pads of cotton-wool and a bandage was then trusted to, for by this time she was pulseless and more dead than alive. Some hours after, on removing the dressing, there was a flat coagulum under the cotton-wool, extending up to the neck, but bleeding had ceased. It did not recur, and she ultimately recovered. I shall think twice ere I again strip off an ovarian cyst from the capsule of a soft fibroid unless I am

sure of being able to bring the whole separated surface into view.

For myself, I was slow to begin this operation. Many uterine tumours of all kinds have passed through my hands. The greater number of these gave little or no trouble at any time. In some there were times of pain, and attacks of hæmorrhage, and then long intervals of repose ; a few even entirely disappeared of themselves, and many, I may say hundreds, got over the menopause with little disturbance, though, as a rule, menstruation was prolonged. But there were some who suffered almost without ceasing year after year, and at the time death would often have been welcome. Now, I sometimes see some of these old bad cases of whom I was wearied,—and who, I am sure, were equally tired of me,—enjoying a fair amount of health, and able to live like other people. Wishing to have their view of the situation, I tell them that nowadays their tumour would be removed, and that, had they lived a little later, much of their former sufferings would have been spared them. The reply has invariably been, "I am now so thankful that I had no operation." I meet with old fibroids in patients of all ages. I saw one the other day in a healthy old lady of eighty-four. I see almost daily in the street one whom I attended for years. She led a dreadful life with her tumour for upwards of twenty years, till it had reached an enormous size. Now it gives no trouble. She is nearly seventy years of age, and year by year her size is becoming less and less perceptible: that some have dropped by the way, unheard of, is likely enough.

One would expect, that the greatest immediate risk from uterine fibroids would arise from hæmorrhage, yet a death from this cause appears to be rare. I have never once met with it in my own practice, though many a patient seemed to be almost on the point of dying from severe floodings during the menstrual period. Once, long ago, I was present

at a post-mortem examination of a young woman who had rapidly bled to death. Suspicions had arisen. The cavity of the uterus was large, and there was a sub-mucous fibrous tumour with some varicose veins on its surface, and from a small crack in one of these veins the fatal hæmorrhage had come.

Indirectly, however, simple fibrous tumours, especially those of large size and those that bleed, may be the cause of death oftener than we think. In some, the excessive anæmia that they produce seems to be the cause of paralysis. I have seen several deaths from embolism, the result of inflamed uterine veins. Several times I have seen chronic peritonitis occasion great trouble, and not unfrequently the peritoneum becomes the seat of malignant or papillomatous deposit, especially if the tumour be large. They are often the source of danger in all cases of abdominal inflammations, and they add much to the sufferings of those who are the subjects of diseased heart or lungs. When they become active again after menstruation has ceased, the cause of the activity is generally to be found in some sarcomatous degeneration — of this I have seen some instances. I have only met with a single case where there could be little doubt that the fibroid had begun to grow after menstruation had entirely ceased. Even in the soft œdematous fibroid, the tendency is for growth to cease — though this form is very unwilling to stop like the harder tumours.

The cases in which, with our present knowledge, hysterectomy may be reasonably advised are then—

1. In very large rapidly growing tumours of all kinds in young women. By a large tumour I mean a tumour upwards of 20 lb.

2. In all cases of real fibrous cystic tumours, if they can be removed. Also in all cases of suppurating tumours.

3. In most of the cases of the soft œdematous fibrous

tumour. These often grow to an enormous size, far larger often than any ovarian tumour. I have seen one that would not be less than two hundred pounds weight. Sometimes large quantities of red serum can be removed with much relief, and I have several times been able by this means to carry patients over the menopause, when the necessity for further puncturing ceases. These tumours seem to open up the broad ligaments more than the ordinary hard tumour, and some that I have removed have had very extensive pelvic attachments. These tumours are much reduced by free purgation.

4. In cases of large bleeding fibroids of any age, provided that the patients are not approaching fifty years of age, and provided that the lives are practically useless, and that further experience in the operation shall show that the mortality of hysterectomy is likely to diminish.

5. In certain cases of tumours surrounded by free fluid, the result of peritonitis, provided that the fluid shows a tendency to re-accumulate after two or three punctures. My own experience in such cases is, that after one, two, or three punctures, the fluid does not collect, and it often disappears of itself without any interference. It must not be forgotten, however, that the long continued irritation of the peritoneum by very large tumours is apt to be followed by degeneration of the surfaces of a sarcomatous and cancerous character. On this point the microscopic examination of the fluid gives positive evidence which will settle the question of interference in any way.

These embrace every form of case in which I have yet ventured to interfere by operation. In every case once begun, the operation was completed, sometimes with great difficulty. Indeed, there is no operation that tries one so much as the removal of a large, badly adherent uterine fibroid. All but one, were cases of supra-vaginal hysterectomy. Nearly all were under observation for some years—some for many

years. A gradual deterioration of health had been watched, till the stage of uselessness and wretchedness was reached, when death seemed often to be preferable to life. I have never seen such pronounced anæmia as existed in some of these patients, and anæmia of itself does not certainly forbid operation. Indeed, some of the most anæmic patients did better than the others. The average weight of the tumours—fourteen pounds—shows at least that there was no hurry in interference. All but six of the thirty-eight were, from their condition in life, hospital patients. Their position was laid before them, and they were allowed to decide the question of operation very much for themselves. Some preferred to let bad alone, and these are still working on in more or less discomfort and misery, waiting for the menopause. The argument that life was threatened was never used. Were I anxious for operations, I might ere now have done two or three hundred during the last ten years; and from what I know and hear, a great number of uterine fibroids are removed, or attempted to be removed, without the slightest necessity.

The operation of hysterectomy differs from that of ordinary ovariotomy in several important particulars. In the first place, a very much larger incision is necessary, for the tumours are solid. A huge semi-solid ovarian tumour, if not much adherent, may generally be removed, by breaking down the cysts, through an incision little larger than sufficient to admit the hand. The uterine tumour must be turned out whole; and if there are adhesions, these are much more vascular than in cases of ovarian tumour. I do not think that the length of the incision influences much, if it influence at all, the result of hysterectomy. The closing of the large wound prolongs the operation, but the after comfort of the patient is in no way affected by the length of the incision, if proper care be taken at the time to close the wound very accurately by a sufficient number of deep

sutures. Of these I put in about four to the inch. Where the wall is thin, as it generally is about the umbilicus, a larger number may be required. The incision is always carried right through the umbilicus. Why the umbilicus should be regarded as a sacred spot, and a sweeping incision made to the left side of it, I have never been able to understand. When the incision has to be extended to near the sternum, as has often to be done, there is generally a good deal of bleeding from that part of the wall, unless one hits exactly the middle line. I have seen no after trouble from the long cicatrix, provided that the patient is not allowed to go about too soon. In the early days of ovariotomy, when the wound was closed by harelip pins put in at intervals of an inch, a hernial protrusion was the rule; but since I have put in a great number of sutures, and I think I put in twice as many as anyone else, and take in the whole deep tissues of the wall, I have seldom had to see a patient on account of any discomfort arising from the wound. There is no greater mistake than to include only the skin and peritoneum. This is Sir Spencer Wells's method. It saves trouble at the time perhaps, but in a month or two the patient suffers. It is said that the cicatrix comes to this in the end in all cases. It does not: with a properly united wound, with a sufficient number of deep sutures taking in all the tissues, no hernia ought to happen. I am not sure but that the wound is firmer when the middle line is avoided, and the sheath of one of the recti muscles is opened throughout.

But it is, in the attachment of the tumour, that this operation differs so much from ovariotomy, and it is in this, that the difficulty of hysterectomy lies, for the amount of structure to be divided and taken care of is very great, whether it be treated intra- or extra-peritoneally, or half one way, and half the other. So far as I have yet gone, most of these operations have been so treated. The round and

broad ligaments have been left inside. The cervix, or lower part of the tumour, or top of the vagina, has been secured in the wound. If it was not easy to secure an ovarian pedicle sometimes to one's satisfaction, it is much less easy to fix a mass of tissue ten times the size often of an ovarian stump, in the lower end of the incision. The principle of the extra-peritoneal method is a good and sound principle, but it is not easy to carry it out properly. If the stump be fixed too tightly, there is apt to be sloughing round about; if fixed too loosely, there is a risk of fluids trickling down into the abdomen, and setting up a septic peritonitis within four and twenty hours. Even now, with all our antiseptics, this is the danger of any extra-peritoneal method, and in hysterectomy, this is increased by the presence of a septic canal running through the stump. The firm constriction of a wire, and it must be firmly constricted, often causes such pressure by the puckering together of a mass of tissue, that sloughing quickly takes place below the wire and round the septic canal outside of it. To such an extent does this sometimes happen that it is marvellous how the patient escapes. At first I used Koeberle's instrument, which is still the best for this purpose; but for long I have given it up in favour of a very large thin clamp, and I think that this is a safer way. I have not found sloughing take place to the extent that it does when a single wire merely embraces the pedicle; the parts are more spread out in the clamp, and there is not nearly the amount of puckering of the soft parts that there is when a wire is used. A mass, as thick as the wrist, can be squeezed into a loop an inch or three-quarters of an inch in diameter, whereas with a large clamp there is no great pressure on any one part below. The pressure of the wire does not act simply on the constricted portion, but exerts its influence to some distance below the constriction. Whether this be the explanation or not, all I know is, that there has been less trouble since the wire was given up.

Before applying the clamp, it is better to draw all the parts gently together by a thick silk ligature or by a soft wire. This prevents a too great spreading out of the parts between the blades, which would render the closing of the wound around the clamp somewhat troublesome. Sometimes, even with making the best of it, after tightly closing the wound, there may be a little prolapsus of soft parts under the clamp at either end; this is of no consequence provided that a proper dry dressing be applied. What I use is a saturated solution of perchloride of iron in glycerine, applying this freely to the stump, and then drying it off; after that, plenty of iodoform and salicylic wool. It is hardly necessary to add that as soon as the tumour is cut away the cervical canal must be scooped out and disinfected at once, either with iron or corrosive sublimate, and every instrument that has been used for this purpose must not again be touched during the rest of the operation. Some time ago, I was informed by one of the bystanders, who saw this happen at an operation of hysterectomy. The assistant, after the tumour was cut away, put his forefinger into the cavity of the removed uterus—apparently to satisfy his curiosity as to its length, and then went on with his work, sponging and tying ligatures, without thinking that his finger almost certainly carried a poison on it. The operation was a simple one; the patient was a healthy woman; she died a few days after of acute septicæmia, and there were found four or five ounces of putrid serum confined between the stump and the pubes.

It is the presence of this septic canal that is also one of the sources of danger in the intra-peritoneal method, and, in addition, there is the great risk of hæmorrhage taking place some hours after operation, when ligatures are used. It will not always do here, as in ovariotomy, to transfix and tie, and drop in, even though the cervical canal has first been cut out and rendered harmless. The tissue we

have to do with is a treacherous one, and independently of that, the uterine arteries are sometimes enormous. I have seen them nearly as large as the femoral artery. Any one who has had the misfortune, as I have had, to injure these during an operation, gets very quickly disabused of the nonsensical theory that it is by the tying of the vessels in the broad ligaments, and thus cutting off the blood supply, that uterine fibroids cease to grow after removal of the ovaries and tubes.

The difficulty of applying ligatures safely to the tissue of uterine fibroids is great ; you tie as tightly as you can draw the threads, and in an hour or two, the muscular tissue has contracted, and internal hæmorrhage goes on. I have not myself yet met with this. Indeed, I have not had the misfortune to lose any patient from hæmorrhage. Twice I have had hæmorrhage happen in ovariotomy, and in both occasions catgut ligatures were used. In one, I opened the peritoneum behind the uterus some days after operation, and gave exit to masses of putrid blood ; in the other, I opened the abdomen in front by breaking up the wound, and let out two or three pints of stinking blood-clot. Some thick catgut ligatures had been used to a very thick omentum. Several of the knots came away through the wound, and after weeks of horrible suffering from cystitis, a thick knot of catgut, with the loop but little absorbed, was passed by the urethra. In one other case, there was a suspicion of death from hæmorrhage, but no post-mortem examination was allowed. Here catgut ligatures were also used. Since then, I have never used these to large masses of tissue, and under any circumstances I need not say that catgut ligatures ought not to be applied to uterine tissue, at least till we have something more reliable than we yet have.

The only safe intra-peritoneal way, so far as is yet known, is to follow Schrœder's plan, and make several layers of sutures after cutting the stump obliquely, and then stitch

the peritoneum all over. Even this, though probably the safest way against hæmorrhage, is far from perfect ; too many silk ligatures are left, and a better way has yet to be discovered. I am in hopes that in some cases, the cautery will be found to be the best. The worst of this method is that the tissue of the fibroid is apt to break and crack under the pressure of the cautery clamp. A few weeks ago, I tried the following experiment, for we can now only perform anything new on the *corpus vile* of some hospital patient. The ovaries and tubes were being removed in the case of a bleeding fibroid. One end of a tube was adherent and incorporated with a part of the tumour which projected somewhat from the surface. It was too tempting not to try how the cautery would behave on this projecting fibroid. A cautery clamp was adjusted to embrace the whole ; it crushed up easily, too easily ; the cauteries were applied to the projecting portion which was burned off ; it was then found, that, what with the tension and the pressure of the clamp, the fibrous structure had completely given way below the instrument, and some ligatures were necessary to bleeding points. In cases where the top of the vagina could be pulled into the clamp, I think the cautery will be successful, also when the cervix can be cauterized, or normal uterine tissue, which bears the cautery well,—as I have several times proved in cases where I have been obliged to remove part of the uterus closely incorporated with the base of an ovarian cyst ; but the tissue of the fibrous tumour itself is quite different, and difficult to deal with either by ligature or cautery.

And yet I feel quite sure that just as we have all come to an intra-peritoneal method in ovariotomy, so will we come to an intra-peritoneal method in the removal of uterine tumours. Compare the clamp results in the removal of ovarian tumours with those got by the cautery, and the best of them are utterly bad. The principle of the clamp is

good, but it is a coarse, unsurgical instrument, and the more unworkmanlike it seems to me every time it is used.

I have once or twice used Koeberle's serre-nœud, allowing the stump to settle down into the pelvis, much in the same way that the long ovarian ligatures were left, in Dr Clay's method. The mortality of this method in ovariotomy was one death in every three operated on, and this will probably be the ratio of mortality in cases of hysterectomy so treated. It seems to be simply impossible to kill some women, be the putrid mass left in the pelvis what it may. There is often a difficulty in dealing with the bladder, which rarely troubles in ovariotomy. The bladder is frequently drawn upwards on uterine fibroids. I have met it nearly as high as the umbilicus ; it has often to be dissected downwards, more especially when the tumour comes much into the pelvis, and where the broad ligaments are highly opened up. Its size is sometimes remarkable, and it is not an easy matter sometimes to make out its edges, if the ordinary stupid direction be followed, that the bladder be emptied immediately before the operation is begun. Leave it full, and the bladder difficulties are wonderfully modified. Its separation downwards on the tumour is a simple matter. On one occasion there was troublesome hæmorrhage from the separated portion, owing to numerous enlarged veins. The ureters also run some risk sometimes when there is much deep enucleation in the broad ligaments. Thrombi are also apt to form when there has been much separation of cellular tissue, and time is often lost in turning out the clots and finding the bleeding points. It is essential, in this operation, to be provided with many pairs of long locking forceps, seven or eight inches in length, and of comparative strength. These I have used since my first operation, and I am sure, that without them, some of the patients would have been lost from hæmorrhage during the operation.

I have, as yet, no one way of dealing with the attach-

ments of these uterine tumours. Each case has been a law unto itself. A few of the simpler cases were treated entirely extra-peritoneally. Generally the round and broad ligaments were secured, stripped off the tumour, and left inside. In two cases, the treatment was entirely intra-peritoneal by ligatures; in one, entirely intra-peritoneal, by Koeberle's serre-nœud. Once or twice, a half intra- and half extra-peritoneal method was followed. Both of these last ways must be dangerous methods, and much care in the after-dressing is necessary, though the convalescence is much shorter than when the whole attachments are secured in the wound.

Drainage was made use of, by a long straight glass tube passing to the lowest point in the pelvis, in the same sort of bad cases that I employ it in ovariotomy. Drainage is not necessary in ordinary operations, or even in moderately difficult ones, even though the amount of adhesion be great; and it is not required in ordinary cases of free fluid round solid tumours, or in cases of burst ovarian cysts. It is to be used only in the very bad operations, where adhesions have been extensive, or where there has been much bleeding, and where there is a doubt that this has not all been arrested at the time of the closing of the wound. Above all, if the powers of life be feeble, and the operation has to be finished quickly before all oozing can be satisfactorily checked, drainage is often the saving of the patient. Of course, if an operator does not do the severe cases, but only cases that are non-adherent, and that have never been tapped, drainage is quite unnecessary, and in unskilful hands might be injurious. I think the second fatal case might have been saved had a drainage tube been used. There was an enormous amount of posterior adhesion, the adherent surface on the tumour representing a space of 30 × 31 inches, but the most of the adherent parts were long enough to allow of

catgut ligatures being applied. There were at least seventy of these left inside, and the patient showed signs of feebleness before being put to bed. I regretted much that I did not drain at the beginning, for I removed from the pelvis, four days after operation, about six ounces of thin dark blood. Nothing has surprised me so much as the amount of almost pure blood that was removed from the pelvis in several of the cases of hysterectomy that were drained. Where it came from in some of them remains a mystery to me.

The wounds healed easily, and always without suppuration. Latterly, I have rarely had occasion to disturb the dressing, even round the clamp, for ten or twelve days after operation. The sutures are often allowed to remain much longer. Indeed, the fine silk now used may almost be left in for an indefinite time. Much discomfort has been saved the patient by her being allowed to empty her bladder herself, and not having this done for her. Why the catheter should be passed two or three times a day I have never been able to understand, when the patient can almost always accomplish this for herself. It was the rule, I suppose, just as it was the rule to have the bladder emptied before operation.

As in ovariotomy, the use of carbolic acid spray has been long given up during these operations. In only six of these thirty-eight cases was it employed. One of these died. There was blood in her urine next day, the day after albumen, and then came an attack of acute mania, from which she died. Possibly it may all have been a septicæmia. Of thirty-two done without spray, there were two fatal cases in very feeble women, and after operations of great local difficulty. In truth, there is nothing in all my work that has so thoroughly broken down with me as the carrying out of the so-called "perfect Listerism" in the surgery of the abdomen, by means of the carbolic spray.

I expected much and have got nothing, after years of vexation and disappointment, and the results got now are very much what they were before carbolic acid spray was heard of. In ovariotomy the mortality was one in twenty-six before the spray was used. It is almost the same now, since it was given up. It is true that there was a long series of successes, and, at the time, I thought this was due to the protection that was given by spray, and not to the steady use of the cautery and drainage in the very bad cases, as I now think that it was. There were eighty consecutive cases of recovery—that means two deaths in eighty-two, or one in forty-one. But of the whole number of one hundred and twenty spray cases there were seven deaths, or one in seventeen. In the Infirmary the results were disastrous: one out of every seven died. Fortunately only twenty-one operations were done under the spray, and my impression is—I may be wrong—that these would have lived had the spray not been used. Since the spray was abandoned, there have been done, in my small ward in the Infirmary, eighty-eight ovariotomies up to this date, Dec. 8, 1884. These include cases done by the assistant as well as by myself. The number of deaths is two, or one in every forty-four operated on, and neither of these died of septicæmia. In one, a very difficult case of large, solid tumour, opening up the broad ligament, the patient died a week after of uræmic poisoning, the kidneys having secreted nothing for two days. The right ureter was included in one of the many ligatures. This is the only disaster that has happened to me during the operation, in fully 550 times that I have opened the abdomen for the removal of ovarian or uterine tumours. The other fatal case was that of a feeble woman coming out of a severe operation with a pulse at 170, and it never fell.

The fact is, that we must look for greater success in hysterectomy in the developing of the technical methods of

operating, just as Mr Baker Brown did twenty years ago, when by a simple change in his way of treating the pedicle of an ovarian tumour, he at once lowered the mortality of ovariotomy by two-thirds ; only in this case, the London ovariotomists would have none of it. Their hatred of the man extended even to his methods ; they kept working away on the old lines, losing one patient out of every three or four, while this great improvement seemed to be wilfully neglected ; and now, when the real discoverer of a perfect intra-peritoneal method is long lying in his grave, they begin to wonder, what Mr Baker Brown really had to do with the advancement of abdominal surgery.

Those who still teach that there is no safety for a patient, unless the carbolic acid spray be used, can make of these results what they may. For my own part, I believe it to be a useless ceremony, and sometimes it is a dangerous one. One thing is, however, certain, both ways cannot be the right way. If "a single germ" getting into the abdomen during an operation play the mischief it is said to do, then few or no cases done in the old way ought to recover at all, for no amount of experience could keep these germs out, whereas in the heart of the very surgical hospital, and almost next door to where Mr Chiene tells us that the atmosphere is laden with death-carrying germs, less than one of every forty has died after ovariotomy. What is one to make of all these things? If these London surgeons, who still use the carbolic spray, get a fatal result in every third case where they remove a uterine fibroid, am I to go back to these ways when far better results are got without them? By no means. The antiseptic principle, which I believe in as much as any one, can be carried out by simpler means than these, and for myself I have almost gone back to the boiled water and soda of more than twenty years ago. It is, unfortunately, a melancholy story that ever since surgery began, the most of the mischief was

done by the surgeon himself. It was the willing and tender, though unclean hand, that carried the poison into the wounds. It is to this that Lister has put a stop. With a proper antiseptic, an operator is now made to be clean in spite of himself, is compelled to have safe sponges, safe ligatures, clean instruments, and, above all, clean fingers. If one be careful enough—and few are careful enough—one may do all this, as Mr Tait does, with boiled water alone. Some such precautions are essential; beyond these, with ordinary care, we need not disturb ourselves much as to what is in the air. Yet it was pleasant to put a bad result, that ought not to have been a bad result, upon something that was beyond us, and that could not have been helped. I fear we all blame time, place, and circumstance rather than ourselves.

So far as I am aware, the results of these supra-vaginal hysterectomies are the best that have yet been obtained, and as they are my first cases of this operation, it is only reasonable to suppose that the mortality will become lower by a longer experience. Without the experience, however, that ovariotomy had given me, I shrink from thinking what the mortality might have been. It seems to me that the reason of this comparative success lies in the fact that no operation was done, unless there appeared to be some strong necessity for the doing of it. No one was operated on in good health or in good condition. No case of pediculated tumour was ever meddled with, simply because I do not consider that any interference is justifiable in such cases. Almost all were done on account of repeated hæmorrhages, and ruined health. The time chosen for operation in the feeble ones—and most of them were feeble—was a day or two before menstruation was expected. The tumour might perhaps be then at its largest, but the patient had regained more or less force from the losses of the previous period. In two, and both were amongst the

early cases done many years ago, there was a mistake of diagnosis. The tumours were supposed to be ovarian, and were not recognised to be uterine till the abdomen was opened. Both recovered: in all the rest, a careful and correct diagnosis was made.

I often ask myself the question, Does a mortality of eight per cent. justify an operation for a disease that, as a rule, has only a limited active life, that torments simply, and that only for a time, though of itself it rarely kills? The mortality of an ordinary uterine fibroid, if left alone, is nothing approaching a death-rate of eight per cent. I doubt even if the mortality of the extreme cases exceed this. And after all, the great difficulty is, not in doing even the worst of these operations, but in knowing what are the cases in which it is right to advise those who trust themselves to us, to run the risk of a dangerous operation, with all its attendant miseries. Could we get the mortality down to five per cent. in the bad cases, and these only are the fit subjects, then one might advise interference with a more easy mind. I do not think that we can so advise, if the mortality cannot be kept under ten per cent.

The following narratives give the details of every case of uterine tumour that I have ever in any way interfered with by abdominal section.

CASE I.—*Case of fibrous cystic tumour of the Uterus, mistaken for an ovarian Tumour. Recovery.*

In December 1873, an unmarried woman, aged 52, consulted Dr Perry of Glasgow, on account of a tumour which she had just discovered in her abdomen. Dr Perry pronounced it to be a small fibrous tumour of the uterus, and told her that it would probably follow the usual history of such growths at her time of life, and give rise to little or

no inconvenience. Two months after this, she came to me, and I expressed a similar hope. Menstruation had not ceased—but there was nothing unusual in the amount. The tumour grew rapidly, and in June, six months after it was noticed, reached above the umbilicus, and was distinctly cystic. Her general health was then wretched, but after two months in the country she improved in strength, and became anxious to have something done before winter, for she had long suffered from bronchitis, and was generally confined to the house during cold weather. Having then objections to remove small tumours, I put her off from month to month. She made her appearance in the end of October, suffering from cough and bronchial catarrh.

She was fair complexioned, anæmic, extremely emaciated and fragile-looking. She was the youngest of a family of twelve, all of whom were dead. She had never been strong. At sixteen she had a severe pleurisy, and since then the right side of the chest remained contracted. It was much flattened, and the edges of the ribs were depressed towards the spine, thus interfering to a great degree with the capacity of the abdomen. The tumour now touched the edges of the ribs on the right side, and there was some free fluid in the abdominal cavity. The abdominal wall was very thin ; fluctuation was distinct on the right side of the tumour, where there was a cyst the size of the head. Part of the tumour came down into Douglas's space : it was there cystic and non-adherent. The cervix was shortened and flattened, not enlarged, central and rather low in the pelvis. Movements of the tumour affected it slightly, just as they affect the cervix in most ovarian tumours surrounded by free fluid. The pelvic portion moved very freely in the fluid. No very careful examination was made, for now I never doubted that the tumour was other than ovarian. It was looked upon as one of those common cases where there had been an escape of fluid from some of the cysts—a kind

of tumour that I had long looked upon as one requiring earlier operation than the ordinary case of ovarian cyst.

On the 2nd of November sulphuric ether was given, the tumour exposed, the free fluid allowed to escape, and a large trocar put into the most prominent cyst. There was nothing unusual in the appearance of the tumour—it was pale, for the patient was very bloodless—but it became of a very dark colour as soon as it was interfered with. There was a difficulty in getting in the trocar. The cyst was quite thin, but it required a very strong effect to push in the instrument. Then the fluid came away, not in a full stream, but in dribbles, and it was noticed that it was a bloody serum. Four or five pints thus slowly escaped; then by pressure more fluid was got away, the opening was enlarged to admit the hand, and then I felt that the tumour was something I had not met with before. The red serum all around was by this time in a jelly, and it was evident that the tumour was uterine. The trocar was again introduced, and some cysts in the pelvic portion reduced by puncture. The wound was enlarged, and the tumour turned out along with the left ovary, which was the size of a hen's egg. The uterus spread out rapidly into the cystic mass, the neck being the thickness of the arm, and there was no clamp large enough to go round it. After freeing the bladder downwards, a steel wire was secured round the lowest part of the cervix by Koeberle's serre-nœud, and the tumour was cut away, the cavity of the uterus being opened. This contained a small polypus, and did not appear to be larger than normal. There now came into view what had hitherto seemed to be a piece of distended intestine. It was the left Fallopian tube, enormously enlarged and full of pus. This was dissected out. The wound was now closed as tightly as possible round the stump, a strong soft needle securing the whole outside. There was great tension and depression of the stump towards the sacrum, and though

this was somewhat relieved by bending the soft needle, the operation was finished in a way most unsatisfactory to myself. The cyst walls weighed 11 lb., and none of the bystanders knew what had been done.

This was my first mistake in diagnosis of 194 operations. Hitherto I had the good fortune to avoid cases of soft fibroids or fibrous cysts of the uterus, but this error had happened to all who have done many ovariotomies, and I knew well that I could not always escape, so that, for a long time, I had never gone to perform ovariotomy without being at the same time prepared to remove the uterus if necessary. Koeberle's excellent instrument was well known to me, for I had used it in some ovarian cases where the pedicle was very thick and the attachment to the uterus close.

The operation lasted one hour and a quarter. By midnight there was vomiting from flatulence, and the pulse had risen to 120, temp. 99°·8.

First day after Operation.—Had some sleep towards morning. The pedicle, which was a mass nearly the breadth of the palm, was freely touched with perchloride of iron solution in glycerine. It was much depressed. Flatulence was troublesome all day, and towards evening there was vomiting and fulness of epigastrium.

Second day.—Night very restless; general fulness of abdomen; flatulence and vomiting troublesome all day. She had to be set up every now and then, and the flatus pressed up. After this, she had a little rest till the flatus had again accumulated, when the same process was gone through. By evening pulse was scarcely perceptible, about 140. She was very feeble. No flatus had passed. Five grains of quinine were injected into rectum, every few hours.

Third day.—Great distention; attacks of flatulence severe, always relieved by pressure from time to time; pulse 128. Tension on stump so great that upper edge has disappeared

into the abdomen. Free perspiration towards evening; breathing easier. Urine copious.

Fourth day.—Abdomen very full; large coils of intestine visible through the thin wall everywhere, passive and motionless; pulse 114, temp. 100°. Flatus still pressed up from stomach. Abdomen generally tender, could not possibly be more distended; a great feeling of want of air.

Fifth day.—Night very restless; towards morning flatus passed through tube. Abdomen softer, still enormous; pulse 112, temp. 101°. One-half of slough has now passed into abdomen, the lower sutures having given way.

Sixth day.—Flatus passing, less coming up; some movement of intestine, little diminution of size of abdomen. Much black discharge round stump, which has now nearly all disappeared out of sight.

Eighth day.—Fair night; pulse 108, temp. 101°·4. Abdomen much less full for the first time. Is very feeble, irritable, and most difficult to nurse, and sometimes very abusive. A great quantity of black putrilage coming round stump; end of serre-nœud now half out of sight; dry lint stuffed all round it into the cavity for fear of intestine coming out during one of the attacks of flatulence.

Fourteenth day.—Removed serre-nœud along with mass of slough. There remains a deep cavity, into which the fist could be placed. Two days after this the stitches were removed.

On the *thirty-ninth day* the wound was quite cicatrized, and she returned to Glasgow. I was only too thankful to see the last of my first hysterectomy, for a more thankless case I never had to do with. Yet she returned several times to renew complaints about the food she had got and various miserable trifles, and on the last occasion I had to turn her out of the house. It is only charitable to suppose that she was insane. Six years after operation she was in perfect health, and had become a strong church

woman. After that she changed her residence, and I have been unable to trace her since.

CASE II. — *Fibrous Tumour of Uterus, containing an inflamed suppurating cavity. Operation. Recovery.*

An unmarried woman, aged 44, was admitted into the Royal Infirmary in Feb. 1874, under Dr Matthews Duncan. She was a pale, thin, unhealthy-looking woman. She had granular everted eyelids, and was half blind from old inflammation of the cornea. Up till the previous June her health was fairly good. She was then obliged to give up her situation as cook in London, where she had lived for more than twenty years. Menstruation was regular and normal. Five weeks before admission a tumour was detected. It was hard, elastic, quite fixed, and reached to the umbilicus. The cervix was drawn to the left side of pelvis; it was almost beyond reach of the finger, and felt as if lost in the tumour. This was supposed to be ovarian. I never had any doubt that the case was one of uterine fibroid, and declined to operate on it. After two months' residence in the hospital she was dismissed, and went to her friends in the North.

In the course of the summer she began to write letters to say that she suffered severely, and that the tumour had increased. She was importunate, and wanted something tried. At last, wearied by her importunity, she was allowed to come back. The tumour had certainly got much larger; its appearance was changed. It was very tender now, and had become prominent on the right side, pushing the loin outwards. There was some free fluid. The feeling of elasticity was less marked, while that of a deep obscure fluctuation was pretty distinct. The relations in the pelvis were the same, the tumour filling the whole upper pelvis. It was everywhere fixed and immovable.

On the 5th Sept. a needle was put in at the umbilicus, and sixty ounces of a dark brown fluid were removed. This was pronounced to be ovarian. There was little apparent diminution of the tumour. Much irritation followed the puncture, and in ten days the tension was greater than ever. The aspirator was again used; the same quantity of fluid, which was again said to be ovarian, was removed. This time much relief followed. She was again sent away, for I had not changed my mind, and still thought the tumour was uterine. She was encouraged to hope that as menstruation seemed about to cease, the tumour would quiet down.

In a few weeks she was back again, urgent for operation at any risk; her life was miserable from pain, her health had given way, and she had to work that she might live. The case was now quite a clear one for interference, and I willingly agreed to try and remove the tumour, the patient clearly understanding that this might not be accomplished.

On Dec. 12th an incision, twelve or thirteen inches, was made at once. The tumour was of a dusky brown colour, covered by enormous veins. It was firmly attached to the right iliac fossa, right lumbar region, and to the wall from a little below the umbilicus. This extent of adhesion quite accounted for the fixed state which the tumour had always presented. Upwards of four pints of a dirty, black, purulent looking fluid were removed, the incision was enlarged, and with one strong pull of the arm, pushed in from behind, the adhesions were broken up and the tumour dragged out. So rapidly was blood lost from some huge torn veins in the capsule, that she became faint. The neck of the uterus was treated as in the former case. The left ovary only could be included in the wire ligature. From the previous elevation of the cervix, the stump was secured in the lower angle of the wound with less tension than in the first case. This part of the operation occupied only

a few minutes, but it was upwards of two hours ere the wound was closed. Much trouble arose from stopping bleeding in the torn adhesions, more especially those high up on the insides of the ribs, near the posterior margin of the liver. A glass drainage tube was left in, passing to the bottom of the pelvis. The patient was pulseless when placed in bed. This was an anxious operation on account of the unusual loss of blood.

It is unnecessary to give details of the slow convalescence. The tube was removed on the fourth day, and the whole amount of red serum that came away did not exceed three ounces. This could easily have been absorbed. The pulse had fallen to below 100 by the fifth day, and there was scarcely any disturbance of the temperature. There was, however, much flatulence during the second and third weeks, also much trouble with the bowels, and at one time there was a fear of obstructed intestine. It was thought, though there was no evidence of this, that there might have been some adhesions at angles of the bowel caused by the presence of the drainage tube. As in the former case, the slough extended far beyond the wire, and a large cavity was left on its separation. Six weeks after, she went home. I saw her quite recently. She was in perfect health, and had been so ever since her operation, now nearly ten years ago.

CASE III.—*Case of soft, rapidly growing, Uterine Tumour. Removal of Uterus and Ovaries. Secondary Hæmorrhage. Recovery.*

Emily C., aged 40, for more than five-and-twenty years a faithful nurse in an Irish family, came to me in February 1875 from Dr Millar of Londonderry, on account of a soft uterine fibroid of rapid growth. Though the patient had been aware for more than a year that there was something

wrong, Dr Millar's attention was called to the existence of a tumour scarcely two months before. Since then it had increased much. There were profuse discharges of blood at the periods, and frequent attacks of pain. She had lost flesh, and was unable to discharge her duties.

The tumour extended three inches and a half above the umbilicus. Between it and the edges of the ribs on the left side one finger could be placed; on the right side two fingers. It was prominent, movable to some extent, one day elastic and hard, the next day soft and flaccid, so much so, that when seen in its state of relaxation, it might easily have been taken for an ovarian cystic growth. There was no bruit over it anywhere. The cervix uteri was not much enlarged. It lay far back, and unusually low in the pelvis. Movements of the tumour in any direction at once affected it.

There was, however, no doubt as to the diagnosis in this case; and Dr Miller had written that the patient, those interested in her, as well as himself, would agree to anything that gave her a chance of being restored to her former usefulness.

Till recently, I had looked upon the removal of fibrous tumours of the uterus by abdominal section as an unjustifiable operation under any circumstances. Had this patient come six months before, I would simply have sent her back again, lamenting my inability to give her any relief, leaving her to take the chance that, after eight or ten years of chronic invalidism—should she live so long—the tumour, on the cessation of the menses, would quiet down and give no farther trouble, unless what arose from its bulk. Of such a favourable termination there was here little hope; for the tumour was one of those soft cystic growths that often destroy life as quickly as ovarian tumours. Within the last few months I had operated in two cases of fibro-cystic disease of the uterus, in one case supposing the tumour to

be ovarian ; in the other, almost driven into operating by the dogged determination of the patient to have her tumour taken away. Both of these were miserably constitutioned women, worn out and emaciated, bad subjects for the simplest operation ; yet both recovered, and are now well. Dr Millar's patient could not therefore be summarily disposed of in the old way and sent home. After anxious thought, the removal of the uterus with the ovaries was advised and agreed to.

This was done on the 15th of February 1876, with the assistance of Dr Sidey and Dr M'Gibbon. An opening was made ten inches in length, and the tumour was slowly pressed out of the abdomen. Both ovaries came with it, well up on the tumour. The broad ligaments were very large, covered with great veins, and full of cysts between the layers on either side. Each broad ligament was secured separately below the cysts ; then a strong steel wire was passed round the thick neck of the tumour, immediately above the vagina, and firmly secured by Koeberle's instrument. The uterus, ovaries, tubes, and masses of cysts in the broad ligaments were then cut away. As, at this stage, it seemed doubtful whether the cut cervix could be secured external to the peritoneum without too much tension on the vagina, a piece of thin indiarubber cloth was wrapped round the neck, and fastened by another serre-nœud (Cintrat's). A sort of tube was thus formed, separating the strangulated tissues from contact with the living. The intention was to let the whole thus protected drop back into the pelvis, leaving the indiarubber funnel to give exit to any discharges. It was found, however, just possible to secure the stump in the lower angle of the wound, though with no small amount of tension on the posterior wall of the vagina, by passing two soft needles through it, and bending them at a considerable angle. Several bleeding points were secured, and care was taken to prevent blood from getting into the peritoneal

cavity. The omentum was drawn downwards, and spread over the intestines as far as possible into the pelvis. The wound was closed by silk and horse-hair sutures.

The weight of the tumour some hours after its removal was 8 lb. 4 oz., but a large amount of serum had already oozed from it. This did not coagulate on exposure to the air. The uterine cavity was three inches in length, in addition to about an inch and a half included in the part secured in the wound. In neither of my former cases was the cavity enlarged.

The operation lasted an hour. The anæsthesia with sulphuric ether was quiet and perfect. There was no vomiting during the operation or after it. In the afternoon, two opiate enemas (20 and 15 minims of laudanum) were given to quiet pain. By evening there was moderate perspiration, also some refreshing sleep. A few turns of the screw were necessary to check some oozing from the stump, the surface of which was the size of a five-shillings piece.

Second day.—Good night with opiate, flatus coming up freely, much perspiration ; urine only six ounces, loaded with lithates ; pulse 80, temp. 100°·7.

Third day.—Troubled with pain and flatulence till afternoon, when flatus passed downwards, fifty-two hours after operation. Removed Cintrat's serre-nœud, leaving the wires ; pulse 70, temp. 100°·7.

Fourth day.—Restless night from dreams ; pulse 66, temp. 100°.

Fifth day.—Good deal of pain round umbilicus ; fœtid discharge round pedicle.

Sixth day.—Abdominal pain severe ; general tympanism ; pulse 84, temp. 100°·6.

Seventh day.—Abdomen full and tender ; flatus does not pass well ; pain sometimes severe ; pulse 90, temp. 100°.

Ninth day.—Bowels acted freely with oil. She looked and felt well—all anxiety seemed to be over. An hour and

a half after action of the bowels, sudden hæmorrhage came on from the wound. It was detected at once, and I was at her bedside a few minutes after the alarm was given. On removing the bandage, the large pad of cotton-wool was soaked in blood up to the sternum, and blood was flowing in a stream over the pubes, forming a pile of clot between the thighs. It was most alarming. Fortunately the patient was calm, the apparent coolness of the nurse preventing her from taking fright. The blood came from below and appeared at the surface, at the upper edge of the now hardened slough. Pressure and perchloride of iron were trusted to. For half an hour the bleeding broke out again and again in a most determined way, but by stuffing all round the slough with lint soaked in perchloride of iron, and making pressure with the fingers, it was at last checked, though the hand was not removed for a couple of hours, when a compress secured by plaster took the place of the fingers. The patient looked exhausted, for the pulse had become rapid and feeble. A large opiate was given, and repeated at night.

Tenth day.—Slept most of the night, and remained fairly quiet till the afternoon, when she became restless from pain in the back. As the hard crust made by the iron confined the discharge, it was partly cut away, giving outlet to some very putrid fluid. This relieved the back pain, and she had a good night with an opiate; pulse 115, temperature 101°·5.

For the next five days she looked ill, and lost flesh rapidly. On the fifteenth day the slough came away in a mass with the wires, needles, and indiarubber protective. A deep cavity was left, into which the finger passed three inches. Upwards of an ounce of intensely putrid pus had collected behind the slough, which was found to have extended nearly an inch beyond the ligatures.

A rapid convalescence followed, and she returned to

Londonderry, quite alone, thirty-two days after operation. She at once resumed her duties as nurse, taking charge of a heavy child; and she wrote some months afterwards that she was stronger than she had been for years.—(From *Edinburgh Medical Journal*, March 1876.)

CASE IV.—*Solid, rapidly growing Fibroid. Operation. Death nine days after.*

In the summer of 1877, Dr Dobie of Ayr sent me a young woman in her twenty-second year with a very rapidly-growing uterine fibroid. It completely filled the abdomen, pushing under the ribs and sternum on either side. In the epigastrium, close to the margin of the ribs, there was something like an ovary or tube to be felt. It could be felt as a long ridge to near the margin of the ilium. There was a little movement in the tumour. Internally the uterus was felt low down towards the left side. The cervix was quite small and movable. She was pale, and not very healthy looking; but as her general health was fairly good, delay was advised, and she returned home. She soon came back, however, feeling the tumour larger and a greater burden than before. She was a domestic servant, and now was unable for her work. The tumour had enlarged considerably since menstruation had ceased. Some friends interested themselves in her, and were perhaps too good to her in the way of food, for the next time she presented herself she was quite in a state of plethora, and had taken on much fat. Towards the end of the year she suffered from pain and tension of the tumour, and was now very anxious to have it removed.

This was done on the 19th January 1878. Carbolic spray was used, and every antiseptic precaution was taken. It was the first time that I used a very large spray apparatus. It had three jets, was driven by gas, and placed 14 or

15 feet away from the wound. It gave a very large spray, and embraced patient as well as the operator and assistants. Not a hand, or sponge, or instrument passed beyond this cloud during the whole operation, which lasted one hour and forty minutes. The incision had to be extended to within two inches of the ensiform cartilage before the tumour could be pushed out. There were only one or two omental bands. The right ovary was quite low down, and on that side the tumour was free. On the left side the half of the tumour before and behind was covered by the expansion of the left broad ligament over it. The ovary was embedded in the tumour, and formed a long flattened cord, entirely inseparable from it. A number of long locking forceps, which I had got specially made for this case, were then secured before and behind on this immense expansion of the broad ligament, and the left half of the tumour was enucleated out down to the top of the vagina, leaving a huge gap in the cellular tissue. A wire ligature was secured as low as possible round the neck, and the tumour then cut away. Much time was lost in tying vessels in the loose cellular tissue of the broad ligament, and this, together with the closing of such a large wound, made the operation prolonged. The part embraced in the wire was much smaller than in any of the other cases, and when the wound was closed the appearances were quite satisfactory. The whole weighed 27½ lbs., after much serum had drained away. The surface denuded of peritoneum was very large.

Towards the end of the operation she became cold and pale, with an almost imperceptible pulse. Scarcely any blood was lost, the strong locking forceps completely controlling all bleeding. Four hours after operation the temp. was only 96, but she was warm. Her aspect was bad, all life being seemingly quite knocked out of her. By evening the pulse was 140; temp. only 98°. There were several attacks of vomiting of bitter, sour fluid.

Second day after Operation.—The night was very bad from excessive vomiting, great quantities of green bilious fluid coming up with severe straining. Pulse 140, temp. 100°·4. Flatulence was troublesome, and much relief was got by setting her up and making pressure on the epigastrium. After this she had some sleep. Scarcely any more bile was vomited, but what came was accompanied by such severe straining that the attacks quite wore her out. In the afternoon, flatus passed downwards, and the vomiting ceased after that; but by evening the pulse was a little quicker—145. Little urine was passed. It was quite bloody.

Third day.—Quiet night for the first half, then restless from flatulence, which did not pass down. Pulse 144, temp. 102°. During the day flatus passed freely, and the abdomen was quite flat and hollow. The wound was perfectly dry. Urine scanty; no blood; but loaded with albumen. No more vomiting, and taking simple food. Looks much exhausted.

Fourth day.—A quiet night, with one-sixth of a grain morphia suppository. Pulse 132, temp. 102°. Still pale and strangely exhausted looking.

Fifth day.—Again a quiet night. Urine still scanty, loaded with albumen. Pulse 132, temp. 102°·8. The day was quiet, and in the evening the nurse thought her much better. She had been quite natural all day, and the look of exhaustion was less marked.

Sixth day.—Woke up early in the night restless and confused. Towards morning I found her sitting up in bed quite maniacal. Temp. 103°·5, pulse 138. She had to be restrained in bed. She raved for some days without ceasing about her glorified body, and died, quite worn out, nine days after. During the last days her temp. did not exceed 100°. The pulse continued rapid all the time.

The wound was quite healed except at the upper part, where it had given way in her restlessness to the extent of

an inch and a half. A little pus lay on the surface of the stomach, which was slightly adherent under the upper part of the wound. The pus was quite encysted by adhesion. There was not a trace of peritonitis in any part of the abdomen, nor was there any serum in the pelvis. The wound was firmly united round the stump, and there was nothing to be seen there, except nature's repair of a great injury. The kidneys were much congested. Every other organ was healthy. The brain was not examined. After all, the cause of death in this case was probably some form of septicæmia.

CASE V.—*Fibrous cystic Tumour, mistaken for an ovarian Tumour. Recovery.*

A married woman, 33 years of age, was brought to me by Dr Hunter of Linlithgow in April 1878. She was a thin, healthy-looking woman. The tumour was distinctly cystic. Part of it came into the pelvis behind the uterus. Movement of the tumour influenced the pelvic portion very easily; but the cervix, which was rather pushed against the pubes, was unaffected. A single, almost momentary, examination was made, and the opinion given was that there was no doubt that the tumour was ovarian. Its removal was recommended. Operation was on the 17th of April. On exposing the tumour under carbolic spray, the colour was noticed to be very dark; and on introducing the trocar, which required much force to pierce the tumour, nothing but a little blood escaped. The wound was enlarged to ten inches, and the tumour pushed out entire. Both ovaries were diseased; the left was elongated, enlarged, and flattened on the tumour, and could not have been removed; the right was also enlarged, and full of cysts. Double wire ligatures were applied as low as possible, and all but the vaginal portion of the cervix was removed.

There were no unfavourable symptoms. A good deal of

morphia was required to relieve pain, and the bladder was irritable for some days after operation. The highest temperature was thirty hours after, when the thermometer reached 103°. It did not fall below 102° till the end of the third day. The highest pulse reached was 110—also about the time of the highest temperature. In this case I used double wires and a clamp to steady the stump in the wound. The result was more satisfactory than with a single wire: there was no sloughing downwards. The slough did not separate till twenty-four days after operation. She went home in six weeks, and has had good health ever since.

The tumour weighed eleven pounds. A little more care in the examination would have led to the discovery of its real nature, for one ovary was easily felt in the epigastrium, a little to the left of the umbilicus. The largest cyst contained 30 ounces of pure serum. It coagulated almost instantaneously on being exposed to the air, care having been taken to puncture the cyst so that there could be no admixture of blood. The section of division was 9 by 13 inches, and it was possible to include both broad ligaments in the wire without detaching the ovaries from the tumour.

CASE VI.—*Soft bleeding Fibroid. Intra-peritoneal Treatment. Recovery.*

In 1876, Dr Kidd, of Alyth, sent me an unmarried woman —a domestic servant—with a fibrous tumour, low in the pelvis and extending to the umbilicus. She was no longer able for her situation, partly from pain and partly from the excess at the menstrual periods. She was 29 years of age, and of a fairly healthy appearance. I advised her to delay interference, unless such became absolutely necessary. After three years she came again, very anxious for relief.

She was much changed; the tumour now filled the abdomen; she was extremely anæmic and quite unfit to make her living in any way. The tumour varied much in size: very large and tense before menstruation, much smaller and softer after this was over. The loss of blood was sometimes very great.

Operation was on the 16th July 1879. Carbolic spray was used. An incision not exceeding ten inches was made: by taking time, the tumour moulded and could be pushed through the opening. Both broad ligaments extended up to the fundus of the tumour on a level with the ribs. The portion containing the ovarian vessels was first transfixed and ligatured, locking forceps being put on close to the tumour, before the ligament was divided. The same process was repeated on the other side. The tumour was then separated downwards all round from its cellular attachments, and a soft iron wire secured quite low down—in this case almost round the top of the vagina—by Koeberle's instrument. There was thus left a large cavity, from which the pelvic portion of the tumour had been shelled out. Koeberle's instrument, 5½ inches in length, was left dipping into the pelvis, as it could not be secured outside. There was little bleeding from the separated surfaces, and the wound was kept as open as possible round the instrument to allow of the escape of serum.

The operation lasted one hour and a quarter. There was a good deal of pain, and several opiates were required during the afternoon. There was very free perspiration for some days. The highest pulse reached was 124, about thirty hours after operation; the highest temperature was 100°·5. Recovery was uninterrupted. The serre-nœud came away with the slough in ten days; she returned home thirty-two days after operation, the wound being quite cicatrized for some days.

The tumour was a soft œdematous fibroid, and weighed nineteen pounds. This patient has enjoyed perfect health since the operation.

CASE VII.—*Large solid Fibroid*, 42 *lb. Supra-vaginal Hysterectomy. Recovery.*

Mary C., aged 28, was sent into the Royal Infirmary by Dr Robertson of Ardrossan. She had sought relief in many quarters in vain. The tumour was very large, and was first noticed five or six years before. She was wasted about the chest and arms, like a case of old ovarian disease. The abdomen measured 49 inches at the umbilicus; the tumour was firm and solid throughout. The ensiform cartilage was turned upwards, and the growth extended under the sternum and ribs; close to the sternum there was a large projection the size of a child's head. No trace of the ovaries could be detected. The greater part of the pelvis was occupied by the tumour. There was no distinct cervix, only a small triangular projection drawn away to the left side, almost beyond reach of the finger. For several years no great inconvenience had resulted; menstruation was never in excess, and for the last fifteen months it had entirely ceased; since then, the increase in the tumour had been rapid, and she could do little or nothing owing to its weight. She sat all day knitting; at twenty-eight, her life prospects were anything but bright.

For obvious reasons, this patient was not taken down to the large theatre, but was operated on in the ward, on 18th April 1881. Sulphuric ether was given, and the operation was performed under carbolic acid spray. The sponges, thirty in number, had been lying for long in a five per cent. solution of carbolic acid, they were washed in hot water, and then put into a two per cent. solution, and wrung almost dry. These were used over and over again, and were not washed

in any fresh solution during the operation. Dr Wilson was present from Glasgow, and there were about twenty visitors and students. The first incision measured 12 inches ; it terminated 4 inches above the pubes, so as to avoid the bladder, which was known to be elevated on the tumour. On the right side, the broad ligament rose as high as the crest of the ilium. The left broad ligament was largely spread over the half of the tumour as high up as the ribs. The opening was then enlarged to 22 inches, and, by dint of hard pushing and patience, the huge mass was slowly moved forwards as far as its connexions on the left side would permit. The right ovary was easily seen. On searching for the left, it was found to be transformed into a long, tense, umbilical-like cord, 7 or 8 inches in length. Here and there along this tense band were several small cysts. It was so embedded in the tumour that it could never have been removed. The right broad ligament was transfixed by soft iron wires, secured, and divided ; all bleeding from the tumour side was prevented by a series of strong locking forceps. The fibroid was now more easily dealt with. It was drawn forwards, so as to put on the stretch its enormous connexion on the left side. About a dozen powerful locking forceps, 10 inches in length, were now applied to the broad ligament before and behind. The whole was then cut downwards, and the mass enucleated as low as possible. A strong soft iron ligature embraced the base, which was of great thickness. The tumour was then cut away, the stump showing a section of the cervix in the centre. The forceps were removed one by one, and all bleeding vessels separately tied. Some of these were large, and one threw blood over the assistant's head. There was much trouble in finding some bleeding points amongst the loose cellular tissue of the huge gap now left. The hæmorrhage was mostly venous. All present could see that this condition was full of danger

and that secondary hæmorrhage into this loose tissue was not one of the smallest risks of this operation. When all oozing seemed to have ceased, the stump (the thickness of the leg) and the end of the right broad ligament were secured, with much tension, outside; a glass drainage-tube was fixed in above the stump, and the wound closed by forty silk sutures. The operation lasted one hour and three-quarters. After much blood and serum had escaped from the tumour, its weight was 42 lbs.

Ten hours after operation, five ounces and a half of syrupy blood were removed from the pelvis through the tube. The pulse was 94; the temperature 102°·2, rising two hours later to 103°·4 Fahr. During the night, back pain was relieved by injections of morphia.

The *first day* was passed fairly well. In the evening the pulse was 126, and the temperature 102°·2; flatulence was troublesome. She felt weak, and had whisky-and-water to drink. There were only four ounces of bloody serum from the tube.

On the third morning, the pulse was 120, and the temperature 104°.

On the fourth day, the pulse was 114 to 125; the temperature ranged from 101° to 103°·5.

On the fifth day, after a restless night, the temperature had risen to 106°; it fell to 104°, and again in the afternoon it rose to 105°·5. There was œdema of the labia, and much cellular infiltration in the pelvis. She looked very ill during these days, not caring for food, though taking stimulants freely; on the sixth day the pulse dropped to 92, and the temperature also fell to 101°·6. The tube was removed, there being only a tablespoonful of reddish serum in the pelvis.

On the ninth day, the wound was found healed throughout. The stump was dry and sweet. The pulse and temperature almost normal.

In the third week, there was again a rise of pulse and

temperature from 101° to 103°. This continued for ten days, and caused some anxiety.

On the eighteenth day, the wires were loose and were removed. The loop was two inches and three-quarters in diameter. Seven weeks after the operation she left the hospital. She is now a strong woman, in perfect health, and can do anything.

CASE VIII.—*Large solid Fibroid. Prolapsus of Bladder and Rectum. Supra-vaginal Hysterectomy. Recovery.*

Mrs B., aged 39, was transferred from Professor Fraser's wards in the medical house. Since the birth of her last child, three years before, the tumour had rapidly increased. It now reached the ensiform cartilage, completely filling the abdomen. Menstruation was frequent and profuse. Projecting from the vagina were four distinct swellings; prolapsus of the vaginal wall and bladder; prolapsus of the rectum and posterior vaginal wall. Between these were two large ulcerated swellings, like two fists, exuding a fœtid discharge. These are found to be the lips of the cervix, enormously enlarged; behind and pushing outwards, was the tumour completely filling the pelvis. These local wrongs had thoroughly broken down her health. Her life was utterly useless, and her condition in every way was most miserable. She was a nervous, excitable person, bedridden, feeble, and emaciated. She was willing to run any risk to obtain relief. The case was far from a promising one, and, at first, the condition of the kidneys seemed to forbid any interference. The urine was of low specific gravity, 1012. The daily quantity passed during the week before operation varied from 80 to 100 ounces. There was a little albumen, but nothing else.

The operation was performed on 13th November, and lasted one hour and twenty minutes. The incision was

18 inches long. This opening was scarcely large enough, and much force was needed to push the tumour forwards, and especially to dislodge and bring up the pelvic portion, which was tied down by bands of adhesion everywhere in the pelvis. The steps of the operation were the same as in the previous case. The broad ligaments were stripped off and secured separately, and everything fixed in the lower angle of the wound. On proceeding now to remove the clots from the abdomen, a cystic tumour of the right kidney, as big as a child's head, was brought into view. It was pushed under the ribs by the tumour, and as the operation went on it came lower and lower into the abdomen. It was covered by adherent mesentery, and was of a very dark colour. It was not examined too curiously. The weight of the tumour removed was 21 lb. The patient looked very ill on being placed in bed. Indeed, at this stage she presented a very hopeless appearance. The interest of the case now centered in the state of the kidneys, and in what would be the probable effect of the carbolic acid spray on such a damaged organ. Soon after operation she was seized with severe pain, which was relieved by drawing off a pint and a half of limpid urine, slightly albuminous ; in eight hours 53 ounces were passed. The first night was fairly good, with an opiate. In the morning the pulse was 104, and the temperature 101°·8. Fifty-seven ounces of urine were passed during the day, making 110 ounces in twenty-four hours. It was clear, with more albumen. The second night was bad. In the morning she was flushed and intensely cyanotic ; the pulse was 134, and the temperature 101°·2. The urine was smoky, and towards evening it became bloody, and was loaded with albumen. The quantity was 57 ounces during the day. She complained of intense headache, and was flushed and restless all day ; the pulse was 130, and the temperature 101°. The third night was also bad ; in the morning the pulse was 128, and the tem-

perature 101°·4; the urine was very bloody. The fourth and fifth nights were also restless. The urine still contained much blood, and some clots caused much distress in passing from the urethra. On the sixth day the urine was free of blood, but loaded with albumen. On the next day there was a return of the hæmorrhage, with much pain. On the tenth day blood was observed for the last time; then came a week of great exhaustion from diarrhœa; on the twenty-third day all trace of albumen had disappeared. There was free suppuration round the stump, though the wound healed well. She went home seven weeks after the operation, looking clear and healthy. She was freed from all her troubles. The vaginal and rectal prolapsus had disappeared. The cervix was tucked up under the pubes. Strange to say, the kidney-tumour has as yet—now nearly four years after the operation—caused no inconvenience, though it has slightly increased in size.

CASE IX.—*Solid Fibroid. Supra-vaginal Hysterectomy. Recovery.*

M. V., aged 29, a field-worker from Inverness-shire, was admitted, in April 1881, with a uterine fibroid reaching to half-way between the umbilicus and ensiform cartilage; it filled the pelvis, and pressed so much on the rectum and bladder that much of the patient's time was spent in passing urine. There was a short small cervix. The sound entered six inches. Both broad ligaments were involved. Menstruation was profuse. At one time she was a strong, powerful woman. Of late she had lost flesh, and had become much depressed, finding that she could no longer make her living, and having no friends to fall back upon.

The operation was performed on 3rd May. No carbolic spray was used. A free opening was made, and the tumour

pushed out. When the pelvic portion was got up, it seemed as if it would be impossible to secure this tumour by any extra-peritoneal method—the base being of great thickness, and extending across an enormous pelvis. The broad ligaments were very voluminous, and the ovaries (the size of hen's eggs) were drawn high up and to the back of the tumour. The bladder required separation downwards. Then the broad ligaments were secured by wire ligatures, twisted tightly, and detached from the tumour, a strong wire being first passed under the pelvic portion. The tumour was then cut away, and, with great tension, the stump was brought into the wound, though it could not be secured there till a large clamp was adjusted over the wire. This made the drag excessive ; and but for the large broad pelvis allowing the stump to be depressed very deeply, the stump could never have been secured outside. The broad ligaments were also fixed to the clamp, and the wound was closed. The operation lasted an hour. The weight of the tumour was 15 lbs.

There was vomiting for the first thirty hours, and large opiates were required. The highest temperature was 100°·6, and that only on one occasion. The highest pulse was 82. Recovery was uninterrupted. The tension was so great that the clamp, four inches in length, gradually forced itself through the tissues, till it became buried out of sight, except a small portion in the centre, which was the only part visible at the end of the second week. Yet there was never the slightest constitutional disturbance. A very large cavity was thus left when the clamp was removed, and cicatrization was not complete for eight weeks. She left the hospital on 24th June. She had quite recovered her health, and weighed 13 st. 12 lb. when she went away.

Case X.—*Soft bleeding Fibroid. The entire Uterus removed. Recovery.*

M. D., aged 37, had been under observation for four or five years, with a large bleeding fibroid. The cavity was nine inches in length, and everything in the way of remedies had been tried in vain. The conditions in the pelvis were so unfavourable that no interference was recommended. She got gradually more and more anæmic and feeble, till she could no longer find employment as a cook. She was friendless, and her means were exhausted. She was admitted into the hospital in August—more to give her rest and good food than with the view of trying anything to effect a radical cure. She got worse instead of better, and was even more blanched than before. The effect of the good living seemed only to cause more blood to flow from the uterus. There was a constant drip going on, varied every now and then by a real hæmorrhage. As she had still ten years or more of invalidism to look forward to, at the best, her position was explained to her, and she agreed to anything being done that might be deemed feasible. The tumour reached two inches above the umbilicus. It was softer than any of the other cases—more so now than at any previous time, for it was well drained by long-continued bleeding. There was no cervix, and the mass filled up Douglas's space nearly to the anus. The operation was done on 26th October, after a residence of nearly three months in the hospital. She had long suffered from a chronic laryngitis, and the ether inhalation was difficult. It was agreed to remove the ovaries, should they be removable, for great doubts were entertained as to the possibility of removing the pelvic portion of the tumour. A free incision was made; the ovaries could not be got at, and the tumour was turned out. The ovaries were found

high up and behind. They were much enlarged, adherent, and embedded in the midst of enormous varicose veins. They might have been ligatured close to the tumour ; but then the pelvic part of the tumour, which had been got up by much pulling, could never have been replaced again. The case looked pretty hopeless at this stage, and it was evident that great enucleation would be necessary before the wires could be placed under the pelvic portion of the tumour. The bladder came half-way up upon it, and the base was as thick as the thigh, more than filling the opening of the pelvis all round. The bladder was first detached ; the peritoneal covering of the tumour was divided by scissors, right across, a little below a point corresponding to the situation of the umbilicus before the tumour had been disturbed. Then each broad ligament was ligatured by soft iron wires, and detached from the tumour, strong locking forceps controlling all bleeding. The separation was continued by the scissors all round till the top of the vagina was reached, when a serre-nœud was applied as low as possible. The tumour was then cut away, all bleeding in the pelvis was stopped, and the stump secured in the wound. The tension was not greater than in the previous cases, while the tissue embraced was smaller. There seemed to be nothing held by the wires but the top of the vagina. The operation lasted one hour and thirty-five minutes. The weight of the tumour was 12 lbs. No spray was used during this operation, and the sponges were simply wrung out of hot water.

For the first week there was laryngeal irritation, followed by slight bronchitis. Still, considering her feeble condition, convalescence was unusually rapid. The opening left after the wires dropped off was not larger than that in an ordinary clamp ovarian operation ; not a trace of cervix could be felt by the finger. The vagina ended in a simple *cul-de-sac* close to the cicatrix in the abdominal wall. The whole organ had been removed.

CASE XI.—*Soft bleeding Fibroid. The entire Uterus removed. Recovery.*

A widow lady, 31 years of age, was sent to me in 1879 by Dr Greig of Dundee. She had a small uterine fibroid, and at that time the monthly periods were beginning to be excessive. I saw her once or twice after that. Every time there was marked loss of health, and great anæmia. At last she found that she was on the point of being a confirmed invalid. Every menstrual period left her less able to bear the loss of the next, and the hæmorrhages were getting more and more profuse. She had three children to attend to, and now she was almost unable to look after them in any way. I had never advised operation, hoping that it would not be necessary, as she was able to take good care of herself. It was now evident that she would be unable to struggle on till menstruation ceased, and I felt justified in placing before her the risks and advantages of operation.

The tumour had steadily increased and now filled the abdomen. The ovaries were felt high up above the level of the umbilicus; there was almost no cervix, but it could be dragged up almost beyond reach of the finger by pushing above the pubes. The patient was extremely anæmic, with a feeble pulse.

She had her operation on the 25th March 1882. The incision was fourteen inches. The tumour was pushed out. Both ovaries were enlarged and were high up on the tumour. The broad and round ligaments were thus raised; both were divided on either side. The tumour was then separated from its cellular attachments all the way round down to the top of the vagina. A soft iron wire ligature was applied low down and twisted. Then by a long, flat, narrow clamp the whole was fixed outside, and the tumour

was cut away along with the ovaries. The cavity of the tumour was very large, extending quite to the fundus. The membrane lining the interior was granular and very red, and here and there were polypoid masses.

Save for the feebleness and irritability of the heart, recovery was almost uninterrupted. The quickest pulse noted was 112, and that only once. The highest temperature 100°. The wound healed without discharging a drop of matter. The wires and clamp were not disturbed till the twenty-fourth day, when they fell off. The slough was like a piece of dry tangle. The opening left was very small, less than in an ordinary clamp ovarian case. She went home thirty-eight days after operation, and has been strong and well ever since.

CASE XII.—*Soft bleeding Fibroid. Supra-vaginal Hysterectomy. Recovery.*

A young woman, only 19 years of age, was transferred from Dr Angus Macdonald's ward and admitted for operation on 24th April, with a fibrous tumour extending midway between the umbilicus and ensiform cartilage. She was of a healthy family. The tumour was first noticed when she was 17. Menstruation had all along been painful and profuse, and there was a persistent pain in the left groin. She was anæmic and feeble from excessive hæmorrhages. She was allowed to go on till the day before menstruation was looked for, by which time she had somewhat regained strength, and had so far got over the loss of the previous period. This operation was remarkable only for its simplicity, and lasted little more than half an hour. It was possible to include both ovaries and cervix in an ordinary clamp. The ovaries were much enlarged and diseased. The tumour weighed 9½ lbs. The cavity of the

uterus was large, and full of fungosities. Recovery was uninterrupted.

Case XIII.—*Soft bleeding Fibroid. The entire Uterus removed. Recovery.*

Mrs E., aged 38, was recommended to me by the late Dr Baird of Perth. He had known her for long, and had such a poor opinion of her strength that he did not think she could bear any operation. When I first saw her, she was so blanched that her face could hardly be seen on the pillow. I think I never saw such extreme bloodlessness. The lips and tongue had literally no colour. The menstrual periods were excessive, lasting half the month, and the attacks of syncope during them were so alarming that several times her friends thought that she was dead. The pulse was about 140. The heart had suffered from old rheumatic attacks, and its action was extremely feeble. Any interference was then out of the question in such a state of emaciation and feebleness. To all these things were added the depressing influences of exhausted means.

After some weeks spent in the country, almost entirely in the open air, she was brought back to town, and willingly agreed to my proposal that the tumour should be removed. A more unfavourable looking case could hardly be imagined. The anæmia was excessive. The heart's action rapid, irregular, and feeble. She was sleepless and excitable. The tumour was large—scarcely movable, and the condition in the pelvis doubtful. There was little cervix, and immediately behind it was a hard fixed swelling the size of a large egg. In the left side of the pelvis was another similar swelling, but less defined. This was supposed to be one of the ovaries. There was a constant soaking, serous discharge from the uterus.

The time selected for the operation was the day before

menstruation was expected. By that time she had gained a little strength from the drenching hæmorrhage of the previous period. The incision was large and was extended above the umbilicus three or four inches. The tumour came out without any appearance of the ovaries. These were both adherent in the pelvis, and enlarged to the size of an orange. The one that was felt behind the cervix was fixed to the vaginal wall. They were ligatured along with the dilated tubes, and the stumps left inside. The tumour was so bloodless that, when it was first exposed, it looked like an ovarian tumour. The cavity was very large. Its lining membranes had a velvety appearance, and was easily scraped off. The tumour was divided at the vaginal junction. It weighed nineteen lbs. The stump was secured by a long thin clamp at the lower angle of the wound, after being thoroughly dried and rubbed with perchloride of iron and glycerine. The dressing was salicylic wool.

The convalescence was slow. The highest temperature was on the evening of the operation day, 100°·5. The pulse was rapid, uncertain, and irregular. The greatest complaint arose from breathlessness and a feeling of want of air, and there were often attacks of nervousness. The wound healed at once, and the dressings round the clamp were not disturbed for ten days. She left her lodgings forty days after operation for the sea-side. She got into excellent health, and in a short time it was impossible to recognise in the fresh, healthy, young looking woman the subject of all the anxious doubts and fears of some months before. About eight months after operation she went to stay with some friends in Africa, got rapidly into a state of plethora, and was quickly sent home quite insane. After six months she recovered perfectly, and is now quite well.

CASE XIV.—*Large soft Fibroid. Supra-vaginal Hysterectomy treated intra-peritoneally. Recovery.*

Mrs D., aged 46, a Frenchwoman, sent by Dr Thomson of St Heliers, was admitted into hospital, in August 1882, with a very large soft fibrous tumour. Dr Thomson had aspirated in various places without getting more than two or three drachms of fluid at any point. The serum always coagulated in the syringe. Since menstruation passed away, the growth of the tumour had been rapid, her size having doubled within the last twelve months. She had applied for relief at various London hospitals.

She was a little woman, thin and worn. The tumour uniformly distended the abdomen, elevating the ribs; no movement could anywhere be detected. The cervix uteri was very hard; it lay low in the pelvis to the right side, and was quite fixed. The upper pelvis was occupied by the tumour, and it felt very hard on pressing upwards; no movement of the abdominal portion in any way affected the part felt in the pelvis. Posteriorly, and better felt by the rectum, was a hard cystic body, the size of a small orange. This was supposed to be one of the ovaries. In prospect of an operation, the state of the parts in the pelvis was far from satisfactory, and repeated examinations threw no light on the local conditions.

Operation on 28th August.—The incision was gradually extended to 20 inches, and the tumour was slowly pushed towards the opening. By taking time it moulded considerably, but could not be brought out on account of its extensive connexions. It had grown from the left side of the uterus, had pushed aside the layers of the broad ligament, and forced everything before it as it grew, so that the descending colon was found on its right side; only about two-thirds of the tumour had a peritoneal covering; the rest required to be separated from its cellular attachments.

The separation was begun by dividing with the scissors the serous covering at the edge of the colon, which was pushed over to the right side of the abdomen. Large vessels were secured by locking forceps. When the tumour was turned out, the iliac vessels, the psoas muscles, and the loose cellular tissue nearly as high as the diaphragm, were lying quite bare; there was nothing like a neck or pedicle. A temporary ligature was screwed tight, as low down as possible, and the mass cut away. Nearly an hour was taken in stopping bleeding, and in hunting out vessels amongst the numerous thrombi that had formed everywhere in the cellular tissue. The base of the tumour could in no way be secured externally, and it was only by the use of special compressing clamps, which were expressly made for this case, and by which the elasticity of the thick uterine tissue was destroyed, that ligatures could be used with any hope of keeping a hold. The uterus was divided obliquely. Some vessels were secured singly, but the mass of the stump was tied in seven or eight portions with strong silk. The difficulty at this stage was to avoid injuring the bladder, which was very large, and drawn upwards to the left on the abdominal wall. It was only by keeping in a catheter and moving it about that the bladder escaped injury. It had already been separated from the tumour, and had got very rough handling. The gap left in the peritoneum was very large; the descending colon and sigmoid flexure were lying quite loose. A drainage-tube was left in, and the wound closed. The patient, when put in bed, was cold and collapsed, the operation having lasted one hour and three-quarters. Clover's small inhaler was employed; one ounce and three-quarters of ether only were used. After drainage, the weight of the tumour was 34 lbs.

Recovery was for long doubtful. The after progress contrasted greatly with that of those cases in which the extra-peritoneal method was carried out. The utmost vigilance

was taken to prevent the stagnation of fluids in the pelvis; this was the more necessary, as the cavity of the uterus was opened, and the quantity of strangulated tissue was great. No very unfavourable symptoms appeared till the end of the first week. Fortunately, at that time, a collection of putrid blood-clot was detected and opened by using the drainage-tube as a probe and pushing it about in the proper direction. In the second and third week the pulse and temperature were sometimes high. Little could be taken except stimulants; for a long time nourishment was given by the rectum, and the feebleness was great. Many silk ligatures were washed away; the discharge, though never great in amount, continued for three months. Long before this she was up and going about. After a residence of nearly four months in the hospital, she left for Jersey, the picture of health and contentment.

CASE XV.—*Large, very adherent Fibroid. Supra-vaginal Hysterectomy. Recovery.*

Mrs W., aged 40, sent by Dr Black, was admitted in the end of April 1882. She was married at 28, and had had six children; the youngest was under three years old. She was aware of the tumour some years before this, when there were frequent floodings. After her confinement these were profuse, and plugging had often to be resorted to. Two years before, she was a long time in the Infirmary under Dr Angus Macdonald. Treatment by ergot, both hypodermically and by suppositories, was tried with little or no benefit. She was first seen by me two months before her admission, when she was recovering from an attack of hæmorrhage which nearly proved fatal. As soon as she was able to be moved she was admitted. She was kept in bed, was well fed, and gained strength rapidly. She was so anæmic and feeble that operation seemed hardly pos-

sible. At this stage the tumour reached half-way between the umbilicus and ensiform cartilage. There was a double systolic murmur, the heart having suffered from an attack of acute rheumatism in her youth. By the advice of Professor Fraser, operation was delayed. She was put upon a liberal diet, and iron was given in large quantity. After a time she went to the country. Examination of the blood showed only 50 per cent. of hæmoglobin ; hæmocytes, 5,680,000 ; many of the red cells smaller than natural.

After three months and a half, she was again brought to the hospital. The hæmoglobin was now 85 per cent., hæmocytes, 5,010,000 ; the red cells were now of a very uniform size. There had been no sign of menstruation for four months, and while her general condition had improved, the tumour had enormously increased. It had now pushed under the ribs and sternum, and there was a large projection on the right side, forcing outwards the loin and raising the ribs. Pain was now severe on the right side, and tension was great. She was confined to bed, suffering greatly from facial neuralgia in addition to her other troubles. She had taken so much morphia at former periods of her illness, that opiates scarcely afforded any relief. The abdominal wall was œdematous all over. There was some swelling of the labia, also general œdema of the vagina and pelvis. After some weeks there was no improvement. The œdema and tumour seemed rather to grow every day ; and though the case was in every way an unpromising one, operation was advised, as holding out the chance of saving life.

This was done on 28th September. The incision was upwards of twenty inches, and was as near the ensiform cartilage as was of any use. No line of demarcation could be made out between the peritoneum of the tumour and the wall ; adhesion was everywhere most intimate. The tumour was cut into without any better result, and bleeding was free. The omentum also came in between the

tumour and wall, adherent to both ; and, as all the tissues were œdematous, this only increased the difficulty. The wall was rapidly cleared off the tumour by the free use of scissors. The transverse colon was firmly attached all along the upper margin ; and, in separating this, it was deprived of its omentum and partly of its mesentery. Much force was necessary to tear out the tumour, on account of the firmness of the adhesions everywhere. These were temporarily secured by every available pair of locking forceps, forty-nine in number. About seventy ligatures, partly of silk and partly of catgut, were left. The omentum was so lacerated that most of it was cut away. In some places the vascularity was great, especially where the bladder was separated downwards off the tumour. Finally, the stump was fixed in the lower angle of the wound along with both ovaries, and the incision was closed by thirty-five sutures. The peritoneum was so adherent to the tumour that it was nearly all stripped off the wall, and in places the intestines were in contact with the muscles when the wound was closed. The operation lasted nearly two hours. The weight of the tumour was 35 lbs., and on examining it after its removal from the body it was impossible to separate the adherent peritoneum, even by careful dissection. Nearly the whole of the parietal peritoneum, and in places cellular tissue, remained on the tumour. No spray was used during this operation.

Very profuse perspirations followed the operation, and stimulants were freely given. By evening she was quite warm. There was some hæmorrhage going on, and on removing the dressing a large clot was found over the pubes and between the thighs, and three or four ounces of pure blood were removed from the pelvis through the drainage-tube. The discharge from the tube for some days consisted of almost pure blood. The tube was retained for a week, an unusually long time. Convalescence was slow, on ac-

count of the extreme feebleness and the presence of some bed-sores which existed at the time of operation. The wound healed by first intention, and there was nothing unusual, except that there was more trouble from flatulence and distension, arising doubtless from the amount of intestinal adhesion to the wall. Her health continues excellent, though she is a hard drinker.

CASE XVI.—*Solid bleeding Fibroid. Hysterectomy. Recovery.*

This patient is 38 years of age, and has had a soft bleeding fibroid for upwards of five years. Menstruation occurs every three weeks, and lasts ten days. She is a fat anæmic woman, and has come from Australia to have the tumour removed.

The operation lasted nearly an hour. Both broad ligaments came high up on the tumour; both had to be separated downwards along with the bladder. There was much enucleation also behind, and the stump was fixed in the wound by wires and a clamp with unusual tension. The usual dressing was applied—perchloride of iron, iodoform, and salicylic wool. The tumour weighed 12½ lbs. The cavity was eleven inches in length, and contained a large pear-shaped polypus.

The recovery was interrupted by various drawbacks. To begin with, though anæmic, she was in too full a condition for an operation. She seemed to have always been kind to herself both in food and stimulants. There was much vomiting of bile for some days, and much opium was required to keep down pain. The wound, however, remained quite dry and healed well. The highest temperature reached was 102°·2, about thirty hours after operation; the highest pulse was 120. Towards the end of her convalescence she had an attack of phlegmasia dolens of the

left limb, from which she suffered a good deal. She returned to Australia in March ; I have not heard of her since.

CASE XVII.—*Large uterine Fibroid, complicated by ovarian Tumour. The entire Uterus and Ovaries removed. Recovery.*

An unmarried dressmaker, aged 50, from Glasgow, was sent by Dr Maddever of Rothesay. She had been aware of the existence of a large uterine fibroid for more than ten years, and had for long looked forward to the menopause, when she understood that all her troubles would cease. Instead of that, she began to get more uncomfortable ; for some months past increase of size has been steady, and of late great pain has been felt over the region of the liver, from pressure upwards of the tumour. She was admitted on the 19th of November 1882. On examination there was found to be a large uterine fibroid, and, in addition, a large ovarian tumour, occupying the upper part of the abdomen, pushing the ribs outwards. The ovarian tumour was most distinct on the right side, where the loin was bulged outwards, and the ribs on that side were more elevated than those on the other. 240 ounces of thick fluid were removed from this tumour ; and on puncturing another cyst, the contents were found to be thick jelly ; this cyst could not be emptied. Very great relief followed these punctures, and for a few weeks she felt quite well. The cyst rapidly filled, and there was a return of the old sufferings.

It was agreed to remove the ovarian tumour, and then to be guided by circumstances what to do with the fibroid. There was no cervix whatever, so that it was doubtful whether the fibrous tumour could be removed or not. On the 28th December the ovarian tumour was again tense. An incision ten inches in length was made from near the ensiform cartilage downwards to a little below the um-

bilicus. The ovarian tumour was tapped, broken up, and withdrawn. Its pedicle was long, and lay adherent to the fibrous tumour for about nine inches. As the tumour was withdrawn this was partly separated from the fibroid. On searching for the opposite ovary it could not be brought into view, and what felt to be the ovary was a tumour the size of the fist away deep down in the pelvis. The incision was then enlarged downwards, and the fibrous tumour turned out. Wires were placed round the top of the vagina, and the stump fixed outside along with both broad ligaments. Fortunately the distension of the wall was so great that this was able to be accomplished. There was great tension. The weight of the ovarian tumour was 15 lbs., that of the fibroid 20 lbs.

There were no unfavourable symptoms. The highest temperature reached was 101°, and that only once, on the third day; the highest pulse was 104, at the same time. The wound was not even looked at till the seventh day, when everything about the stump was quite dry and the wound all healed. The slough separated on the sixteenth day, and the vagina was opened into—the hole being the size of a sixpence. The entire uterus was removed. Its cavity measured nine inches.

CASE XVIII.—*Solid bleeding Fibroid. Supra-vaginal Hysterectomy. Recovery.*

An unmarried woman, aged 30, from Shetland, was sent in March by Dr Hanson of Lerwick. She had a bleeding fibroid, which had been noticed two years before. It reached to the umbilicus, and occupied the left side of the abdomen more than the right. It came pretty low into the pelvic cavity. There was a distinct cervix. The sound entered eight inches. From the small size of the tumour the case seemed to be one in which the removal of the ovaries alone

might answer the purpose of checking the hæmorrhages and reducing the size of the tumour, but at the operation this was found to be impracticable: the right ovary could have been removed, but it was impossible to reach the left, and the closeness of its connexion to the tumour would have made its removal impossible, even could it have been got at, without first turning out the tumour. The incision was enlarged and the tumour was withdrawn. The left broad ligament rose high on it. It was separated off and ligatured. The right was included in an enormous clamp along with the neck of the tumour. The mass included was large and the tension excessive. The operation lasted one hour and ten minutes.

There were no unfavourable symptoms. The temp. only once reached 100°, and that was on the night of the operation. The highest pulse was 84. The wound was not looked at till the eleventh day; it was dressed with salicylic wool. The cavity left, after separation of the clamp on the fourteenth day, was large and deep. The wound was almost cicatrized when she went to the convalescent house six weeks after operation.

CASE XIX.—*Solid bleeding Fibroid. Supra-vaginal Hysterectomy. Recovery.*

An unmarried woman, aged 38, from Sutherland, was sent by Dr Soutar, of Golspie, in May 1883. Tumour reached to the umbilicus. Menstruation was profuse, and the tumour was growing rapidly. The uterine cavity was 7½ inches. The tumour came low into the pelvis. It was intended, as in the previous case, to remove the ovaries. Only one of these could be got at. It was very much enlarged, and full of cysts. The other ovary could not be reached. There was much difficulty in getting the tumour outside, but by hard pulling and pushing upwards from the

vagina, it was at last accomplished. In doing this, there was some posterior laceration of the tumour, and the removal of it was now essential. The pelvis was very broad, and the patient was a large, very fat woman, so that, when the tumour was brought outside, the tension on the broad ligaments, which rose high up, was so great that there seemed to be risk of their giving way. These were separated off the tumour. This relieved the tension, and enabled the tumour to be completely brought up, and fixed in the wound with a large clamp. There was an unusual amount of pain complained of for several days after operation, and she required much morphia. The highest temp. noted was 100°·2, and that only once, on the evening of the second day, when the pulse was 94, the highest point that it reached during her convalescence. Examination of the tumour, after removal, showed that only one-third of it was covered by peritoneum, the broad ligaments having embraced nearly the whole.

CASE XX.—*Large solid Fibroid. Removal of the entire Uterus. Recovery.*

In 1874, I saw at Lasswade, with Dr Maclaren, an unmarried lady, 41 years of age, who had suffered for many years from profuse hæmorrhages at her menstrual periods. She had a fibrous tumour reaching to the umbilicus, and it came well down into the pelvis. At that time no interference was recommended. Nine years after, I saw her again with Dr Maclaren. She had got over these years somehow, but, from being of a fairly good habit of body, she had become extremely thin. The tumour had grown to a large size, pushing the ribs outwards and the heart upwards. Menstruation was still going on profusely and with regularity.

A few days before I saw her, she had received an injury on her side, and had remained in a state of insensibility for about an hour. There was pain and tenderness over the false ribs on the right side, and some crepitation. This was followed in a few days by some free fluid in the peritoneal cavity, which quite disappeared under treatment and rest in bed. Of late the tumour had much increased, and there was often a feeling of oppression about the heart, and sometimes irregular action. After having well considered the case, Dr Maclaren and I felt warranted in advising removal of the tumour. Nine years before we were unable to hold out any prospects of relief by operation.

The operation was done on 27th Feb. 1883, and lasted one hour. The incision was very large, almost extending to the ensiform cartilage. An unusually vascular tumour was exposed. There was one patch of adhesion corresponding to the seat of pain which followed the injury. The tumour extended far under the sternum, and must have pushed seriously upon the heart. A wire was secured round the top of the vagina, and was held in the wound by a thin clamp along with the broad ligaments. Four pints of blood escaped from the tumour as it was cut away. The wound was closed by forty deep silk sutures and by some superficial ones. The weight of the tumour was 27½ lbs.

Recovery was uninterrupted. The wound healed throughout without a drop of matter, and the opening left when the clamp was removed was the smallest I have seen. I met her in the street a few days ago walking at a pace to which I can never hope to attain. She was in perfect health, and looked twenty years younger.

CASE XXI.—*Large, very adherent Fibroid. Cystic disease of Mesentery. Supra-vaginal Hysterectomy. Death six days after operation.*

A widow, 38 years of age, from Scarborough, was admitted into the Infirmary on 19th June 1883. She had a very large uterine fibroid. There was œdema of the limbs and of the abdominal wall, which was hard and horny, and ulcerated in several places. The œdematous portion of the wall below the umbilicus formed of itself a tumour as large as the adult head—it reached to the knees. The tumour hung over the pubes, filled the abdomen up to the sternum, and, after some days, when the surface swelling had subsided, was seen to move freely with respiration. The cervix was high up and of moderate size.

The tumour had been noticed at least ten years ago. Its growth of late had been rapid. She was obliged to work hard, and she had worked on till she could now work no longer. She was a thin, not unhealthy-looking woman, but the pulse was extremely feeble. All these years menstruation had been abundant, though never amounting to severe hæmorrhage.

After ten days rest, the swelling of the limbs and abdominal wall having subsided, and the ulcerated patches having healed, operation was performed on the 30th of June. From the free mobility of the tumour a difficult operation was not anticipated. An incision of about 14 inches was made, and an attempt made to push the tumour through it. It was necessary to enlarge the opening. After a good deal of pushing the tumour only moved partly into the opening: perhaps one-third of it projected. More force being applied, a red fringe of adhesion began to appear all round the sides; the tumour then slowly came out, but its posterior surface was simply covered with adherent omentum, intestine, and

mesentery, and the connexion was of such firmness that all adhesion had to be cut. It was afterwards found that the raw surface on the tumour measured 30 × 31 inches. It was possible to put a clamp round the base, and the tumour was then cut away. Then, bit by bit, this large adherent surface was tied by catgut ligatures. An immense number of these were used, and some of the vessels in the mesentery were very large. There was a curious cystic condition of the mesentery, such as I have not seen before. There were hundreds of small serous cysts, and as many of these adhered to the tumour, it was no easy matter to get all the bleeding points stopped amongst them. After an hour and a half, the wound was closed by 35 stitches. The weight of the tumour was 30 lb. I regretted afterwards very much that I did not drain.

She was feeble from the beginning: four hours after operation the pulse was 140, and it was only then that I became aware how exceedingly thin she was. She had a fair night, but was more feeble next day, the pulse continuing rapid. The skin was moist, and the kidneys acted well. Flatus passed early and easily. She took food and stimulants well. There never was any pain nor sickness, and on the fourth day we were all hopeful. On the fifth day there was a sudden rise of temperature to 103°. A fine glass tube was pushed into the pelvis above the stump of the pedicle, and six ounces of thick, black, syrupy blood were removed. This fluid was quite sweet, and contained no organisms. Nearly other four ounces were got away in the evening. She became gradually weaker, and died on the seventh day. Though almost hopeless about her when put to bed after operation, her chances would have been better had drainage been carried out from the first.

CASE XXII.—*Solid Fibroid, filling the Pelvis, and projecting externally. Hysterectomy. Recovery.*

A lodging-house keeper, 40 years of age, was sent to me by Dr Joseph Bell. She had suffered for a very long time from pelvic troubles, caused by a solid tumour filling the pelvis. The cervix uteri, enlarged and ulcerated, generally projected externally. There was also cystocele and recto-cele. Her sufferings had lately been very much aggravated by the wearing of a large guttapercha pessary, like a three-legged stool, which a homœopathic practitioner had intro-duced to support the uterus. Relief was obtained by the removal of this apparatus, and with the help of hot water injections she was for some months able to work on in comparative comfort. The tumour could not be pushed up out of the pelvis, though it did not appear to be fixed. It reached half way to the umbilicus.

About eighteen months after this, it was necessary that something should be done. The tumour had increased; the pressure in the pelvis was greater, and now the large cervix was always outside, the tumour pressing downwards like a child's head on the stretched perineum. The distress from prolapsus of rectum and bladder was incessant. The tumour reached to above the umbilicus.

Operation was performed on the 18th of August 1883, and lasted upwards of an hour. The bladder was drawn up in front and to the left of the tumour. The tumour came easily out of the pelvis; the broad ligaments were, however, short and tight, enveloping nearly the whole of the tumour. These were separated, secured by silk ligatures, and fixed outside, as they were very voluminous, along with the stump. The tumour weighed six pounds, and the cavity extended nearly the whole length of it.

Second day after operation.—The night was passed fairly

till 5 A.M., when she was seized with severe abdominal pain. This continued, in spite of an opiate given by the nurse, till I saw her at 9 A.M. She was then restless from pain and was flushed. Pulse 114, temp. 102°. Several hypodermic injections were needed during the day, and by evening she was easier. Her breathing was, however, rapid. The pulse had risen to 124; temp. 104°.

Third day.—Some disturbed sleep with an opiate. She is very flushed. Temp. 103°, pulse 120. Some fulness at epigastrium. Much flatus coming up, with pain. In the afternoon temp. rose to 105°; the feet and legs had got cold, and towards evening there was severe bilious vomiting. By midnight she seemed better. Temp. 103°·5, pulse 122; skin hot, flushed; much flatus coming up, none down.

Fourth day.—Not looking well. Abdomen is fuller and harder, but no pain; no flatus has passed down. Temp. 102°·5, pulse 128. Severe vomiting all afternoon of dark brown fluid, which comes up with much straining. At 10 P.M. abdomen was a little softer. Face flushed; much thirst; mouth and tongue very dry. She was distressed and restless. No flatus has yet passed down; much comes up. She takes whisky and water freely.

Fifth day.—Very restless night. Temp. 102°·1, pulse 118. Skin very dry and yellow. Expression not good; restlessness, in spite of opiates, is constant. Vomiting of yellow bile in large quantity continued all day from time to time, with much straining. Urine copious. Wound quite dry. Removed dressing round clamp; everything quite dry. There is great depression of the clamp; as the ligature round left broad ligament, which is secured to the screw of clamp, seemed to be very tense, it was divided; it slowly receded into the abdomen. Temp. 103°, pulse 118.

Sixth day.—Much better night. Flatus has passed downwards freely since 2 A.M. Temp. 102°·1, pulse 110. By

evening temp. had risen to 103°, and flatus had ceased to pass down ; much coming up.

Seventh day.—Fair night. Abdomen much distended ; no flatus has now passed for thirty hours. Enemata given and returned without relief. All ordinary means had failed, and everything was vomited. By evening temp. was 105°, and pulse 140. Wound perfectly dry and healed, but much on the stretch.

Eighth day.—Bad night ; hot and flushed. Pulse 136, temp. 102°·5. Much more feeble. Under cover of a hypodermic injection of morphia, a large dose of castor oil was given and retained. Bowels were freely moved in afternoon. Abdomen less full, though not much.

Ninth day.—Night good with opiate. Free discharges from bowels. Temp. 102°·6 ; pulse 118.

Eleventh day.—Abdomen flat. Removed stitches. Wound quite dry and healed ; dressing round clamp still quite dry. Temp. 102°, pulse 104.

Sixteenth day.—Clamp came off ; opening left very small. Temperature is still 102°, though there seems to be no cause for it.

After this there was a rapid convalescence. Much mucus came away from the rectum, but no pus was ever visible, and there never were any indications of its presence in the pelvis. She now enjoys perfect health, and is entirely free from all her former troubles.

CASE XXIII.—*Soft bleeding Fibroid. Extensive enucleation. Hysterectomy. Recovery.*

M. S., aged 40, a lady's maid, had suffered from profuse menstruation, and about thirteen years ago was aware that she had a fibrous tumour. I had seen her at intervals for many years. She has slowly lost ground, and has become feeble and anæmic. The period comes on every fourteen

days, and continues for a week; and as soon as she has recovered from one illness, another comes on. For some time she has held her situation on sufferance; but now feels that she is at the end of her strength, and can go on no longer. The tumour extends to 2 inches above the umbilicus. It is jammed down into the pelvis. The cervix is small and flat, and far back. The tumour is not adherent; but it is fixed by the broad ligaments, both of which are extensively opened up.

Operation was on the 15th October 1883. It was intended to remove the ovaries; and though these could be felt, they could not be got at so as to ligature them. The incision was enlarged, and the tumour with some difficulty was turned out. The bladder came high up to near the umbilicus, and both broad ligaments almost completely enveloped the tumour. The bladder was separated to a large extent; scarcely any peritoneum was left on the tumour. Both ovaries were diseased and full of cysts, the right being the size of the fist. Both broad ligaments were left inside. There was much loose separated peritoneum. Some of this was brought up and included in the wire ligatures round the neck of the tumour; the rest of it was left lying loose, after all bleeding points had been carefully secured. This operation was troublesome, and lasted nearly an hour and a half. Much time was lost in securing bleeding vessels in the opened up broad ligaments.

Except that there was an unusual amount of pain the first afternoon, arising probably from the extreme tension necessary to secure the stump in the wound, recovery was uninterrupted. The highest temperature reached was 100°·8, and that only once; the highest rate of pulse was 86. She left the Infirmary forty days after operation, and is now quite well and fit for all her duties. This is another instance that shows how little extreme anæmia affects the result of an operation.

CASE XXIV.—*Solid bleeding Fibroid. Hysterectomy. Recovery.*

An unmarried woman, aged 44, from Auchterarder, was admitted on the 20th October 1883. She was a domestic servant, but on account of a large bleeding fibroid had been quite unable for work for the last four years. I had seen her five years before, and on two occasions used the curette freely to the inside of the uterine cavity. The relief obtained was always decided, but only temporary, for after a few months the menorrhagia became as bad as ever.

An attempt was first made to get at the ovaries, but they were lying so close on the tumour that they could not be removed. The tumour was then turned out. The attachments were all separated off and left inside, a wire and clamp securing the base in the usual way.

She recovered easily. The highest pulse and temperature were on the evening of the operation: temp. 100°·4, pulse 106. She left forty-one days after operation. She remains well.

CASE XXV.—*Soft bleeding Fibroid. Ovaries could not be removed. Recovery.*

A young woman, 27 years of age, was admitted on the 30th November 1883, with a soft bleeding fibroid, which has caused increasing trouble since it was noticed about five years ago. It was agreed to remove the ovaries if that were possible.

Both ovaries, however, were enlarged, and full of cysts, and the veins around them so dilated, and the parts so voluminous, that it was thought better to remove the whole tumour. There was no difficulty, and it was possible to

secure both ovaries in the wire without separating them off. There was some tension when the clamp was adjusted, and the closure of the wound round the mass was not accomplished very satisfactorily. The operation lasted scarcely forty minutes, and the tumour weighed 5 lbs. It was very œdematous and soft; its cavity large and full of fungosities.

The highest pulse was 108, on the evening of the operation; and the highest temperature was 101°·6, on the afternoon of the following day.

CASE XXVI.—*Soft bleeding Fibroid. Ovaries could not be removed. Recovery.*

An unmarried woman, aged 38, from Orkney, was sent by Dr Stewart of Kirkwall with a soft bleeding fibroid. She had to work in order to live, and she could now work no longer.

Operation was on 27th December 1883. The right ovary was easily got at, ligatured, and removed, but the left was quite low down, and closely adherent on the tumour. This was then turned out, and secured by a clamp, though with more tension than usual; the broad ligaments were also included.

She made a very good recovery, and was up in the third week; but having no friends, and nowhere to go to, she remained in the hospital till the middle of February, when she went to the Convalescent House.

CASE XXVII.—*Solid bleeding Fibroid. Supra-vaginal Hysterectomy. Recovery.*

An unmarried woman, aged 43, a leather stitcher, and obliged to work a very heavy machine, was sent by Dr Alexander, and admitted on 14th January 1884. She had

had trouble from a fibroid for the last seven years. About six months ago she happened to be in a railway accident at Perth, and got the tumour injured. Since then, hæmorrhages have been frequent and profuse. I had seen her before, and had always advised non-interference. The aspect of the case had quite changed since the railway injury. She has got quite thin—emaciated indeed—like a patient with old ovarian disease. She could no longer work, and had no one to fall back upon. The removal of the tumour was advised without delay. Operation was on 1st February 1884, and lasted three-quarters of an hour. Both ovaries were enlarged, cystic, and adherent. There was also adhesion about the pelvis and posteriorly. The ligaments were stripped off, and enucleated downwards all around, and a ligature placed round the top of the vagina. There was much blood lost, and for a time she looked as if she would die on the table. When fixed in the wound the stump was small, all attachments and separated peritoneum being left quite loose inside. The weight of the tumour was ten pounds and a half.

The temperature never once reached 100°, and convalescence was favourable, though from her feebleness extremely slow. In the third week there was troublesome diarrhœa and some cough. This brought to light some old consolidation of the top of the right lung. She left the hospital, looking very feeble, six weeks after operation, and went home. She was, however, quite unable to do anything, and after a time she was glad to return, when a few weeks rest and good food soon restored her.

Case XXVIII.—*Small bleeding Fibroid. Attempt to remove Ovaries failed. Supra-vaginal Hysterectomy. Recovery.*

Miss B., aged 39, had been an invalid for many years, and for the last year she was seldom out of doors on

account of a small fibroid in the pelvis, which prevented locomotion, and was the seat of constant pain. At first, when I saw her, operation was not recommended, but after a time it was agreed to, and was performed on the 16th February 1884. A small incision was made, but the ovaries could not be got at; the incision was enlarged, and the tumour was got out of the pelvis. Both ovaries were very close on the tumour. On applying a ligature to the right ovary the silk thread cut its way right through, bringing the ovary completely away, and leaving simply a large hole in the side of the tumour, from which the blood escaped in great quantity. This could only be arrested by the removal of the entire organ at the cervix. There was a strange soft friable condition of the soft parts in this patient, such as I never met with before. Everything required the most tender handling, for the least force caused laceration of the parts, so that, in fixing the cervix in the wound, I was afraid to screw up as tightly as usual. Some hours after operation I was sent for, and, on removing the dressings, found a large quantity of blood-clot all about. The oozing came freely from the whole surface of the stump, but was easily arrested.

There was no rise of pulse, though the temperature continued high for the first week. On the third day it was at the highest point reached, 103°. After that, convalescence was uninterrupted; since the operation her health is quite restored, and she is spending this winter abroad.

CASE XXIX. — *Sub-peritoneal bleeding Fibroid. Very extensive enucleation. Ovaries could not be removed. Half intra- and half extra-peritoneal treatment. Death three days after.*

An unmarried woman, aged 43, was admitted into the Infirmary in October 1883, with a small bleeding fibroid scarcely reaching to the umbilicus. She was sent by Dr

Skae of Lerwick. She had never been strong, and was always poorly fed. She suffered much during the voyage from Shetland, and arrived in a state of great exhaustion. She was covered with scars of old strumous sores in her neck, arms, legs, and hands, whence pieces of dead bone had come away in her childhood. For the last four years she had lost much blood at the periods, and latterly there were severe hæmorrhages at irregular times. These were so violent that sometimes it seemed as if she would die. There was little movement in the tumour, which came well down into the pelvis without any cervix.

After a month's residence in the hospital, she was sent to the country. She returned in two months, and was re-admitted in the end of January 1884. There was some improvement in her general health, though the pulse remained extremely feeble,—so feeble, that it was often difficult to feel it. She was advised not to run the risk of any operation, but she was unwilling to return home after having come so far, and I unwillingly agreed to remove the ovaries. She had seen many, during her stay in the hospital, come and go away well, that she was very hopeful. She was willing to run any risk, for her life was wretched as it was; and she begged, as she went under the ether, that all might be taken away at whatever danger to herself.

On opening the abdomen, no ovaries could be found; the wound was enlarged, the hand introduced, the left ovary felt low down, and so closely adherent to the tumour that no ligature could be applied to it. It is not an easy matter to stop an operation, and I was unfortunately tempted to go on, forgetting at the time the unhealthy, fragile creature I had to do with. The tumour was entirely sub-peritoneal, the ligaments enveloping it all around. It could only be partly pushed out of the wound by strong pressure from the vagina. After much trouble, it was enucleated out, and wires placed quite low down, by

Koeberle's instrument; but the stump could not be properly fixed outside. A number of strong locking forceps prevented almost any loss of blood. The operation was extremely troublesome. After freeing the bladder, there was a constant oozing from the separated portion. No time was lost; and just as I thought all difficulties were over, the wound filled with blood—a very large uterine artery immediately behind the wire had given way. It was quickly seized with a pair of locking forceps, but it was not possible to get a ligature securely around it, and the forceps were left on, projecting from the wound, along with the serre-nœud. An hour and a quarter were thus consumed—far too long for such a feeble patient; the pulse was rapid and almost imperceptible when she was placed in bed. By evening the pulse was 160; temp. 99°. She was warm, perspiring freely, and very hopeful. Next day the same. The pulse never fell. The temperature kept almost normal, but rose to 102° just half an hour before she died, on the third day after operation.

CASE XXX.—*Solid Fibroid. Growth since Menstruation ceased. Entire Uterus removed. Recovery.*

A domestic servant, aged 58, was sent to the Infirmary by Dr Dewar of Kirriemuir on account of an abdominal tumour of rapid growth. She was a tall, thin, hard, remarkably healthy-looking woman. She had worked well all her life, and never had an ache or pain till seven or eight months before her admission, when some uneasiness called her attention to a small swelling in the abdomen. The pain was not great enough to prevent her working as usual. The small tumour was carefully watched. It increased slowly but steadily. For the last two months its increase had been rapid, and for the last six weeks there was a red discharge from the vagina, like that of a menstrual period. This has

never been much, but it was constant. Menstruation ceased at fifty. It was always natural, never in excess, even when the periods were passing away.

Up to the level of the ribs, the abdomen is filled by a hard prominent tumour. There is no feeling of fluid, and little of elasticity. The abdominal wall is thin, and free over the tumour. The cervix is small, and the slightest movement of the tumour affects it.

The tumour was clearly uterine, but the history of such a hard tumour developing entirely since the cessation of the menses was so unusual, that the case was gone into with more than ordinary care. From all inquiries made, there was no doubt that the history given was correct. The patient was a remarkably intelligent woman, and very circumstantial in her narrative.

Thinking that the tumour might be a sarcoma, an aspirator needle was put into it at the only elastic spot there was. It brought away nothing, not even blood.

The tongue was red, with deep hacks all over it. It had always been so, she said. The heart's impulse was a little strong, perhaps, but the sounds were healthy. The radial felt a little enlarged and hard. The urine was healthy, in moderate quantity: specific gravity, 1020.

Operation on 23rd May.—She took ether remarkably well. A free incision was made, and the tumour was pushed out. Both ovaries were atrophied, and one consisted simply of a small sac. The broad attachment was drawn together by a silk ligature and a clamp applied quite round the top of the vagina. The entire uterus was completely removed. The wound was large, and was closed by thirty deep sutures. The operation lasted thirty-eight minutes. The weight of the tumour was fifteen pounds. The uterine cavity was large. Length between the cornua, twelve and a half inches; length of sides, ten and six and a half inches.

There were no unfavourable symptoms. Recovery was

uninterrupted. The wound healed without discharging a drop of matter, and the patient left the hospital thirty-four days after operation. She came back several times to show herself in the course of the next three weeks. Then she went to Dundee to see some friends before returning home.

Now comes the remarkable feature in this case. Soon after her arrival in Dundee she was seized with acute pain in the right haunch; this was followed by œdema of both limbs. She could not extend the thigh at the hip-joint, and pressure on the right iliac brim gave rise to screaming. The temperature was normal. Things continued in this state for a fortnight, the woman taking her food moderately well, and, with exception of the local pain, made no special complaint. On the 25th of August she suddenly became comatose, and remained so till death, forty-eight hours after.

She was attended by Dr M'Ewan and Dr Stalker of Dundee, who naturally concluded that the pain in the hip had something to do with the operation so recently performed. Knowing that I would be interested in the patient, Dr Stalker kindly communicated the above history of the case to me, and the following is an extract from his letter of what was found at the post-mortem examination:—"The pelvis was quite normal. A linear cicatrix at the top of the vagina alone represented the uterus. There were no adhesions of the intestine in the pelvis. The kidneys were congested and cirrhotic, with all the usual marks—adherent capsules, gritty sensation on cutting with the knife, and deposits of whitish salts in the glomeruli. The heart was slightly hypertrophied. The œdema of the lower extremities was slight, and extended up to the middle of the legs. We had no means of taking off the small quantity of urine which was in the bladder, and during life the urine was not examined."

That this condition of the kidney existed at the time of the operation there can be little doubt, though not a trace of

anything faulty was noticed in the examination of the urine, either then or at any time during the convalescence. In fact, I never saw a more perfect-looking subject for a severe operation. Her life had been that of a simple living country woman, always working, but never overworked. This is the only instance that I have met with where I was able to satisfy myself that the growth of the tumour commenced after menstruation had ceased, or, at least, where, if present at that time, it must have been of small size.

CASE XXXI.—*Large soft Fibroid; adhesions; much enucleation. Right broad ligament opened up. Supra-vaginal Hysterectomy. Recovery.*

A single lady, aged 29, was sent to me by Dr Parker of Halifax, Nova Scotia, on account of a large soft uterine fibroid, which touched the ribs on both sides. Menstruation was profuse, and the increase in the tumour was decided. Dr Parker had not examined her for a year, and at that time his impression was, that the tumour barely reached the umbilicus. This patient had a sister —older than herself—who had also suffered much from a fibrous tumour, and who was then in very feeble health. She was pale and soft, troubled with boils. The family history was good. Her friends were not very anxious for interference, but I felt warranted in advising operation, knowing well the sort of life that is before any woman of 29 with a soft fibroid already filling the abdomen.

Careful examination showed that the right broad ligament was opened up through its whole extent. The cervix was to the left, almost beyond reach of the finger. The tumour occupied the upper pelvis, especially a lump, the size of the fist, that came down behind the pubes. There was a little movement in this part when the tumour above

was much pulled upon ; but whether this portion was under the peritoneum or not, frequent examinations failed to make certain.

Operation was on the 10th July last. The incision was from 4 inches above the umbilicus, downwards to within 2 inches of the pubes. This was sufficient ; for the œdematous fibroids mould themselves, and with a little pushing and patience can often be got through a moderate sized wound. The right broad ligament was expanded over the whole of the right half of the tumour. There was much enucleation. The portion behind the pubes was also shelled out, and a ligature placed round the base to constrict the pedicle, before applying a large clamp to keep it in position.

She lay quite still, not wakening from the ether for five hours after operation. At 10 P.M. temperature was 101°·7, pulse 82.

First day after operation.—The temperature continued to rise, and at 3 A.M. was 103°·5. The night was not good. In the morning, temperature was 102°·2, pulse only 90. The day was restless, the temperature again rising to 103°·5.

Second day.—Night not good ; temp. 101°·6, pulse 96 ; a troublesome cough, with a look of suffering.

Third day.—Bad night, restless and wretched ; a copious eruption of herpes has appeared on upper lip ; temp. 101°·8, pulse 104.

Fourth day.—A good night ; flatus passing freely ; temp. 102°·8, pulse 96.

Fifth day.—Hot, flushed, restless ; temp. 103°, pulse 88.

Sixth day.—Not a very good night ; temp. 103°, pulse 120.

Seventh day.—Good night ; temp. 100°·8, pulse 90 ; looks and feels much better. At 4 P.M. had a very severe rigor ; temperature rose to 105° and pulse to 140. There seemed

to be no cause for this. It was followed by profuse sweating.

Eighth day.—Fair night; temp. 101°·6, pulse 98.

Ninth day.—Good night; temp. 100°, pulse 88. The dressing was removed round the clamp for the first time. It was quite dry, except the edge under the clamp, which was moist.

After this, recovery was uninterrupted. There was for some days a good deal of jelly-like discharge from the rectum; but, so far as one could see, there was nothing to account for the high temperature of the first week. Since her return to Halifax she has continued quite well.

CASE XXXII.—*Solid fibroid Tumour. Omental and intestinal adhesions. Broad ligament opened up. Much enucleation.*

A single lady, 30 years of age, was sent to me, in 1880, by Dr Somerville of Galashiels, with a uterine fibroid extending to a little above the umbilicus. Beyond the inconvenience that arose from its size, little or no discomfort had as yet arisen. The menstrual periods were regular and in excess, but not to such an extent as to weaken her.

She was seen about once a year, and four years after I first saw her, the tumour had much enlarged. It was broadened out and extended into the right loin. She was getting thin about the chest and arms, and the inconveniences arising from the growth were telling upon her general health. After due consideration she came into town to have the tumour removed.

This was done on the 14th July last. Owing to the solidity and breadth of the tumour, a very free incision was necessary in order to get it turned out. The right side of the tumour extended into the lumbar region, opening up the broad ligament very largely. The posterior adhesions

were extensive; and omentum, intestine, mesentery, and ascending colon were all detached—the most of the vessels in the attachments being tied by catgut as the separation went on. This was continued quite low down. The left ovary was embraced in the clamp; and after a long operation, the wound was closed in the usual way.

There was not a single bad symptom. Pulse and temperature were scarcely affected during the whole convalescence. The wound was not looked at till the eleventh day, when it was found healed throughout. The wool and iodoform dressing round the clamp were quite dry, and might very safely have been left on longer.

CASE XXXIII.—*Solid Fibroid. Entire Uterus removed. Recovery.*

An unmarried woman, aged 46, was admitted into the Infirmary in August 1884, with a large tumour which had slowly grown for the last ten years. The patient is a London cook, and had come to see me for several years past during the autumn, while the family, with whom she served, was on the way north. Hitherto I had advised her to let the tumour alone, but it had now attained such a size that it was a serious drawback to her in her work. She was unable to stoop or do what she formerly could, and felt that if she became the least larger she would be quite unable to work; even now, it is with the greatest difficulty often, that she can get on at all. She still menstruates every three weeks. She is extremely anxious for the removal of the tumour.

The tumour is very irregular and nodulated. A large irregular mass comes into the pelvis behind, and to the right of the cervix, which is of moderate size; another projecting portion occupies the left lumbar region—but this seems to

be non-adherent. Intestine is in front of the tumour below umbilicus.

Operation on the 19th of August—lasting one hour. The omentum was adherent over the tumour in front. There were no other adhesions. The part in the pelvis was not under the peritoneum. Both broad ligaments were secured separately, and were fixed in the wound along with the stump of the tumour. The whole uterus was removed.

There was not a single unfavourable symptom.

CASE XXXIV.—*Soft bleeding Fibroid. Supra-vaginal Hysterectomy. Recovery.*

In 1878 I saw an unmarried lady, aged 38, with a pretty large, soft bleeding fibroid, of rather rapid growth. She was then in comfortable circumstances, and able to take good care of herself, so no interference was recommended. The tumour slowly increased; the hæmorrhages got year by year more profuse; one misfortune came after another, she lost all her means, and having been born with nearly complete amputation of both hands and feet, she was unable to do anything for herself. When I was asked to see her, six years after my first visit to her, she was reduced to poverty, and having no friends, she gladly went into the Infirmary in May 1884. She was then too feeble for any operation. After a time she was sent to the country, and was readmitted in September last. The case seemed to be a favourable one for operation.

Operation on 2nd October.—The tumour was quite free, and both broad and round ligaments were drawn together with a silk ligature and all included in the clamp. Both ovaries were much enlarged and full of cysts. The wound was closed by twenty-one deep stitches, and before closing it, a good deal of blood was seen to come from the pelvis. This was found to come from part of one of the broad liga-

ments which had slipped through the clamp and was bleeding freely. The operation lasted nearly an hour. The weight of the tumour was over 9 pounds. She made an excellent recovery, and left the hospital six weeks after operation.

CASE XXXV.—*Solid bleeding Fibroid. Supra-vaginal Hysterectomy. Recovery.*

An unmarried woman, aged 29, was sent by Dr Rodger of Galston, with a fibrous tumour of rapid growth. Menstruation was profuse, and was getting more and more so, while the rapid increase of size rendered her now almost unfit for anything. She had got very thin about the chest and arms.

The tumour occupied the whole abdomen. It came down into the pelvis, and the cervix was short and thick. Operation was on the 16th of October last. The incision extended to five or six inches above the umbilicus. Both broad ligaments were high, and were separated off the tumour, which was enucleated close down to the top of the vagina. Both ovaries were enlarged and cystic. The stump was fixed in the wound with much tension. The wound was closed by upwards of thirty deep sutures, and the operation was finished within the hour. The tumour weighed 17 lbs.

The wound healed entirely by first intention. The first dressing was on the twelfth day after operation. The wool round the clamp was even then only a little damp at the edges.

There was scarcely any appreciable rise either of pulse or temperature.

CASE XXXVI.—*Fibrous cystic Tumour of Uterus, entirely sub-peritoneal. Recovery after operation.*

A married lady, aged 32, having got a diversity of opinions in Glasgow as to the nature of an abdominal tumour which was first noticed after her marriage, went to London to consult the authorities there. There, all seemed to have agreed that the tumour was ovarian. She might have an operation when she could not walk a mile, though at the time she could not walk a hundred yards without discomfort! She returned home much discouraged, for she felt that, whatever the nature of the tumour might be, no one there seemed to care to have anything to do with her. She then drifted here, as many a bad case has drifted before.

She was fat, and seemed to be in fair health. Two years ago she had several severe inflammatory attacks, with great pelvic pain, confining her to bed for weeks at a time. The abdomen was distended by a soft fluctuating tumour. Careful examination discovered the fundus of the uterus in the left loin above the crest of the ilium. The uterus was tender, slightly movable, and of normal size. Internally, the finger entered a narrow tubular vagina, directed to the left and pushed forwards by the abdominal tumour, which extended down close to the anus. The posterior wall of the vagina was much stretched and felt very hard. The uterus could not be reached ; indeed, the finger point must have been eight or ten inches from it. The local difficulties in the pelvis were evidently very great. At first, the impression was that the tumour must be one of those not uncommon ovarian cysts, where the right broad ligament was opened up and the uterus pushed to the opposite side ; but here the fundus of the uterus was felt so distinctly, and was so very differently placed in every way from anything that I had ever seen, and so apparently separated from the cystic

tumour, that I felt doubtful. I ventured, however, to say that whatever it was, it was not an ovarian tumour. After a day or two, I removed upwards of 100 ounces of pure blood serum from the cyst. This did not nearly empty it, and the fluid came away, not in a full stream, but in a spasmodic sort of way, as I have seen it do in cases of uterine fibrous cysts, when these were punctured. The interior structure of the fibrous cysts quite explains the way in which the fluid behaves. But for the small and movable uterus, which, however, did not in the slightest degree change its position downwards, I would have said at once that the tumour was a uterine fibrous cyst. Now I hesitated between that and some undescribed form of retro-peritoneal tumour.

In the meantime, as some relief had been obtained, delay was advised. In six weeks she was back again, having scarcely been out of her room. The swelling was larger than ever. The dulness now reached to near the ensiform cartilage, and the abdomen was generally fuller and broader looking all over. Tension in the pelvis on the vagina and rectum was, if possible, greater than before. The uterus now touched the left false ribs. All along, menstruation was regular and normal.

On 22nd October last, a free incision was made from the umbilicus downwards. The cavity was opened at the umbilicus, as the position of the bladder was known to extend high up into the abdomen. On putting in the hand it was arrested by the bladder in front, and the same all round on both sides. The uterus was found in the left lumbar region touching the ribs ; the fundus, strangely free, was sticking out of the tumour like a potato. The tumour was punctured at the umbilicus ; about 150 ounces of fluid were got away, but the sac would not empty. Its upper part was now seized and pulled forward, and as it was dragged out the right healthy ovary and tube were seen to be stretched

on it. The position of the ovary before the tapping must have been near the middle line, and about half-way between the umbilicus and the ensiform cartilage. It was now seen that the whole of the tumour was under the peritoneum, and that the floor of the pelvis was pushed up by the tumour almost to the sternum. The tapping puncture was enlarged, and the hand introduced into a fibrous cellular structure, with masses of fibroid here and there. The septa were broken up, and as much fluid pressed out as was possible. The thickness of the soft parts covering the cyst was remarkable. The edges of the cyst were then seized, and the long and tedious process of enucleation was begun. The solid portion extended to the very floor of the pelvis on both sides, and its connexions everywhere were most close and firm, requiring all my strength to separate them. It was impossible after the first few inches of separation to bring any bleeding points into view. At last, after it had given way in several places, the whole tumour was turned out of the pelvis, and then its connexion to the right side of the uterus came into view, all being now separated but this. The point of departure of the cyst was immediately above the cervix on the right side and under the peritoneum of the broad ligament. There was no pedicle—only a broad thick connexion. The cautery clamp was put on, but the structure being hard and dense, the crushing action of the blades made the tissues fissure at the point of junction, and it was removed. Any bleeding points were tied by fine silk. There was now the huge gap left to be dealt with. Sponges were stuffed in, pressure was made, and the bleeding gradually diminished. The right ovary and tube, as well as a large part of the very voluminous capsule, were cut away. The edges were secured by numerous ligatures, and then fixed in the wound. Some iodoform was rubbed over the sac, a glass drainage-tube put in, and the wound closed.

The operation lasted one hour and twenty minutes. She was put to bed cold and collapsed, with blood pouring out at the tube. Two hours after, she was warm ; pulse barely perceptible. Four ounces of pure blood were removed by suction from the pelvis, and there was a large quantity on the sponges. At 5 and again at 9 P.M. several more ounces were got away through the tube. Pulse distinct, 120 ; temp. 99°·4 ; some sickness.

Second day.—Night quiet, with morphia ; pulse, 125. By mid-day the pulse had risen to 138 ; in the afternoon to 148. By evening it was 158 ; temp. 101°·9. She was flushed, and but for morphia would have been restless.

Third day.—Fair night ; face dusky ; tongue very dry ; flatus coming up ; very feeble ; pulse about 160 ; only half an ounce of dirty black fluid from tube. The day was got over somehow, by the help of morphia and whisky ; by evening she was very flushed and restless ; much flatus coming up ; the pulse had fallen to 140, and was stronger ; temp. 101°·6.

Fourth day.—The period has come on, giving much relief ; flatus has also passed downwards ; only half an ounce of dark serum from the tube. The pulse has fallen to 116 ; temp. 101°·5.

Tenth day.—The uterus is now felt low in the vagina ; slough separating. Tube still remains in ; almost no discharge now.

Convalescence after this was slow, but uninterrupted, and she returned home forty-four days after operation. One of the interesting points in this case is, that a large fibrous cystic tumour of the uterus, presenting very great local difficulties, was removed, and that it was possible to save the body of the uterus with the healthy ovary of the left side.

CASE XXXVII. — *Solid fibroid Tumour. Extensive adhesions to wall, omentum, stomach, and diaphragm. Supra-vaginal Hysterectomy. Recovery.*

An unmarried woman, aged 34, from Musselburgh, was admitted into the Infirmary in October 1884. Patient first noticed an abdominal tumour upwards of five years ago. She had then attacks of retention of urine. The tumour has steadily increased. She has taken all sorts of drugs for years past, without the slightest result, except to increase her dyspepsia. For some time past she has been losing flesh, and is now extremely thin. The hands and feet are blue and cold; almost every kind of food disagrees with her, and she can only take it in small quantities.

She is naturally a thin, spare woman. The abdomen is completely occupied by a fibrous tumour, extending under the sternum and pushing both liver and heart upwards. The heart sounds are extremely feeble, especially the first, which is almost absent. She once had acute rheumatism in her youth. There is a curious contraction in the tumour in front a little above the umbilicus, and at first sight the upper part of the tumour looks like an enlarged liver—for which many who saw her mistook it. There is another lump in the right loin which can be pushed forwards from behind. This feels like an enlarged kidney, but careful examination shows the whole to be one tumour. There could not possibly be a clearer case for operation than this. Her life was useless, and she was slowly being starved from inability to take enough of food.

Operation was on 6th November last. Incision extended from five inches above umbilicus to two inches above the pubes. When exposed, the tumour was deeply congested and very vascular. On introducing the hand the tumour was found to extend very high up. It was in contact with the liver, pushing both it and the diaphragm upwards,

and there were extensive adhesions above everywhere. The slightest touch of the hand on the diaphragm in making this examination caused respiration invariably to stop at once. It was impossible to get out the tumour. The incision was then enlarged as far up as it would go. This exposed adherent omentum and some long, broad adhesions coming from above, as well as some parietal adhesion. The tumour was fixed too high up under the sternum to be brought out in any way. It was then pulled up out of the pelvis, and by placing several pairs of enormous locking forceps round the ligaments and base, the tumour was got out first from below. Then by introducing two hands on either side the upper portion was suddenly dislodged, and it appeared with the whole of the stomach attached to its upper and back part. The omentum, containing enormous vessels, was spread over the upper third of the tumour all round, also a quantity of adherent mesentery and intestine. No one who had examined the case had had the slightest idea of this mass: at least one-third of the whole tumour was concealed by the ribs. All these adhesions were separately tied as quickly as possible, a very large number of ligatures being left in. The part of the tumour which had felt like a large kidney before operation was entirely covered by adherent ascending colon, and was shelled out of its cellular attachments. This adhesion gave the most trouble. The worst bleeding, however, came from above, partly from the vascular wall and partly from long adhesions that came down from the diaphragm under the sternum. In the upper part of the incision there were so many vessels to tie that many carbolized silk ligatures were used. The wound was closed by thirty-one deep sutures, besides superficial ones. The incision above the umbilicus was longer than below it. Operation lasted one hour and five minutes. A drainage-tube was left in. The upper part of the tumour was broader than the lower. It weighed 16 lbs.

The face was much congested on being put to bed ; the pulse hard and tense. After wakening up from the ether, two hours after, she complained of pain and of a feeling of great weight under the sternum, and several opiates were required to ease this. There were only two ounces of blood from the tube, in the evening.

There was difficulty of breathing, and much distress from the feeling of load on the chest for many days. The congested appearance of the face slowly passed away. The head of the bed was well raised so as to allow fluids to gravitate into the pelvis and get away by the tube, which was kept in for ten days. The highest pulse was on the second day, 120. The temperature was also then at its highest, 101°·8. Convalescence was slow, and was much interfered with by a troublesome suppuration under the upper part of the wound. Great hardness formed, and after a time pus was discharged into the wound, a number of silk ligatures gradually finding their way outwards. She looked quite another woman when she left the hospital.

CASE XXXVIII.—*Bleeding Fibroid. Attempt to remove the Ovaries failed. Supra-vaginal Hysterectomy. Recovery.*

A married woman, aged 34, a stout anæmic woman, was admitted on October 19th, with a soft bleeding fibroid extending to the umbilicus. Its growth had been rapid. The losses at the menstrual periods are excessive—menstruation lasting ten or twelve days. In addition to the hæmorrhages she suffers much pain, and her life is practically useless. It was decided to remove the ovaries.

Operation on 26th November. A small incision was made through a very fat abdominal wall, sufficient to admit two fingers. The left ovary was found almost under the incision in the middle line close on the tumour. It was enlarged and cystic; the tube was also largely dilated. The

right ovary could be felt with difficulty adherent deep in the pelvis. It could not be brought up. The wound was then enlarged and the tumour turned out. The adhesions to the right ovary were separated. The stump was fixed in the wound, which was closed by nineteen deep sutures. So bloodless was the tumour that on cutting it away only a few drops of blood came from the section. The cavity was much enlarged.

There was trouble for several days from tympanitis and a tendency to sickness. The wound remained quite dry, and the clamp was removed on the eighteenth day. She went home six weeks after operation.

To the above cases two others may be added, and these include the history of every case in which I have ever interfered surgically with an uterine tumour by abdominal section.

CASE XXXIX.—*Case of Interstitial Pregnancy, supposed to be a pediculated fibrous Tumour of the Uterus.*

A strong, healthy looking married woman, 30 years of age, was recommended by Dr Strang of Newcastle, and was admitted into the Infirmary in September 1882. She had a tumour of stony hardness in her abdomen, and she sought relief on account of an unceasing pain, which rendered her life unendurable. The tumour extended two or three inches above the umbilicus. There was some movement in it, and it was tender to the touch, in some places as hard as stone, in others less hard, but the marked feature in the case was the extraordinary hardness. It lay rather towards the right than the left side. The cervix uteri was small and normal; movements of the tumour affected it readily. Menstruation was regular and healthy; the uterine cavity was normal.

The history which came out after the operation was as follows. What we knew before it, was simply that the

tumour had been observed about four years before, and that menstruation was unaffected. She was married at nineteen. Her eldest child would now be ten, if alive. The age of the next was eight and three-quarters, then seven, then four and a half (born in May 1878), then two and three-quarters (born January 1880). In September 1880, there was no menstrual period, and she soon thought that she was again pregnant. The ordinary symptoms of pregnancy, such as she used to notice, went on, and she expected her confinement in May 1881. After waiting for some time no labour set in, and there was no symptom of it whatever at any time. In October, five months after her expected confinement, she had an abortion at five months. After this, menstruation became regular and normal—the flow occurring for the first time since September 1880. The tumour began to get sensibly smaller, though for some months before admission it had remained about the same size. For the last nine months pain in the tumour has been severe, preventing sleep, and it was on account of pain that she sought relief.

To be sure that this pain was real, she was kept under observation for three weeks. There could then be no doubt about it. Curiously enough, a large dose of ergot gave more relief than an opiate. Her request for the removal of the tumour was agreed to. I confess also that I was extremely anxious to see the sort of tumour that had become apparently calcified in a young woman of 30.

Operation was on the 9th October 1882. The incision was 9 inches. Instead of being free, the tumour was embedded in a mass of adhesions to everything around. After cutting away some omentum, the whole mass was turned out along with the adherent intestine and mesentery. The growth was now seen to arise from the left corner of an apparently healthy uterus by a pedicle as thick as the wrist and about 2 inches long. Both ovaries were healthy: the right was low in

the pelvis, the left was pulled up on the tumour, and around the neck and broad ligament a wire was adjusted and the mass cut away. All adhesions on the tumour were then tied with catgut. It was now seen that we had to do with a case of interstitial pregnancy, and had I cut off just a little nearer the wires than I did, the cavity containing the fœtus would not have then been opened at all. As it was, the opening was about 3 inches in diameter, exposing the hand and foot of a perfectly grown fœtus, a few drops only of an oily looking fluid escaped on making the section. Everything was quite sweet, and on paring down the stump there was not a trace of canal or opening of any kind to be seen, the section showing a uniform solid fibrous tissue. At the point of section on the fœtal side, the wall was in places nearly 2 inches in thickness. Elsewhere it was extremely thin. This is the only perfect specimen of interstitial pregnancy that I have ever seen.

A healthy uterus and a healthy ovary were left, and the pain ceased with the operation. She went home thirty-five days after.

CASE XL.—*History of a Case of soft Uterine Fibroid.*

Towards the end of 1872, I was asked to go to the north of Italy to perform ovariotomy on a married lady, 43 years of age. From the history that was forwarded to me, I was led to think that there might be some mistake of diagnosis. On making a suggestion to that effect, before going such a long way, it was promptly intimated that there could be no possible mistake, as the case had already been diagnosed by the best Italian, German, and London gynecologists. I therefore went, and on laying my hand on the abdomen, found that I had to do with a soft uterine fibroid, and not with an ovarian tumour. It was the size of a seven months' pregnancy, and had I known then what I

began to learn to know very soon after, I would certainly have advised operation. There was no appreciable tumour five years before ; of late its growth had been rapid ; there were irregular hæmorrhages ; and some months before she had had a severe attack of phlegmasia dolens. There were three children, the youngest twelve years of age.

These things were told me by Professor Zanobini and Professor Burci of Florence, whom I met at the bedside. After a short but sufficient examination of the patient, we came away, and I looked out for some quiet corner where the consultation might be held. This, however, turned out to be a more serious affair than I had contemplated, for it was a *coram publico* business. We were taken into a large billiard-room, paved with stone, and cold as the grave. The doctors were all seated, and standing around in a semi-circle were the family and friends of the family. I was first asked my opinion, and gave it—that the tumour was a soft uterine fibroid ; that no operation would be necessary ; that it would go on growing more or less till menstruation passed away ; that there was every chance that the growth of the tumour would then cease ; that the patient might live to a happy old age, and die of something else. It was certainly not an ovarian tumour.

Then came Professor Burci, who addressed the bye-standers for twenty minutes. He give his reasons for dis-senting from the opinion of his illustrious colleague. In fact, he gave a lecture, and a very bad one, on the diagnosis of ovarian and uterine tumours. The case was clear as day. It was an ovarian tumour. Uterine fibrous tumours were hard things—hard as the billiard table on which he rested. Who had ever heard of a soft uterine fibroid ? He knew all the preparations in every museum in Italy, and could stake his reputation that no such thing as a soft uterine fibroid was in any one of them, and so on. After all had their turn, my time came again. They were not to be con-

vinced. It was a "tumore ovarico." The family attendant—who seemed to have some glimmer of the truth—was the most amusing. He spoke with great volubility and much gesticulation. He was confused by the conflicting opinions, and leant now on one side, now on the other; and as it is not an easy matter to sit on two stools, he ended by making a mess of it. It was all along evident, from the expressions of approval or the reverse, that here as elsewhere there were two sides—one in favour of, the other against, operation. One old lady especially—we became friends years afterwards—was most demonstrative against any interference with the natural laws of disease. All were pleasant and kind. We parted the best of friends, only each one kept to his own opinion, and after four hours I got back to the hotel. It was altogether a strange scene, and might have been amusing had it not been so cold. I make no scruple in giving these details, for all the Italian medical men concerned in this case are now dead, as well as nearly all the bystanders at the consultation.

For the next three years the case pursued the monotonous way of a uterine fibroid. The life was that of a half invalid. The general health was not bad, and a fair amount of enjoyment was gotten out of life. The tumour grew, but it grew very slowly; and all were comforted by the hope that it had only a limited existence, nor was there anything in the case at that time to forbid the looking forward to such a hope, nor anything to make one think that there would, in her case, be an exception to the usual course of the natural history of these tumours. One day, when walking in the garden, she unfortunately stumbled and fell heavily to the ground, striking the tumour against a low railing. This was the beginning of all the trouble. A rapid accumulation of ascitic fluid followed, and tapping was ultimately required. Between five and six gallons of simple serum were removed, and in three weeks this had again collected,

and its removal every twenty days was absolutely necessary. I saw her again after many tappings. She was then extremely emaciated, the pulse rapid and feeble. I repeated the puncture, and to my surprise found the tumour, which three years before reached the ribs, was now only the size of a cocoa-nut, and quite flaccid. It was firmly adherent to the wall over the seat of injury. The cervix was now long and thin, and the pelvis was quite free. I now advised the immediate removal of the tumour as the only way apparently of saving life. The chances were certainly small. It looked as if life could not be prolonged more than a few months ; at best, rather a hopeless prognosis was given ; operation was not accepted ; and the tappings went on as before.

After the forty-fourth tapping, when about 250 gallons of serum had been in all removed, I was written to to say that instead of the fluid collecting as it had hitherto done after every operation, the abdomen remained flat a fortnight after the last puncture. Strange to say, no more fluid was ever secreted ; her strength came back by degrees, and all were hopeful that with such a diminution of the tumour, for it was then quite small, her troubles were nearly over.

In February 1877 I had occasion to be in Italy on my holiday, and hearing that she was not so well, I went to see her. Her strength was then good, but the change that had taken place in the tumour was most alarming. It formed a large mass, lying across the lower part of the abdomen, at least six times the size it was when I last examined it, and now larger than when I first saw her nearly five years before. From some strange change in the osmosis, the tumour was evidently not parting with its serum, but was retaining it, for in most of these cases of serum in the abdominal cavity with œdematous fibroids the fluid is an exudation from the tumour, and not a secretion from the peritoneal surfaces. This growth went on, but the hope was

still held out that all would come right at the menopause. I was from time to time informed of the progress made. The story was always the same, that the tumour seemed to increase every day. It was punctured here and there, for fluctuation was thought to be distinct, but at no one point could more than a few ounces of bloody serum be got from it. The simple size of the tumour now threatened to extinguish life. I again saw her in March 1878, and though I expected much I was quite unprepared for the dimensions the tumour had attained. It simply lay upon the patient, and was covered with enormous veins, running everywhere in great deep ruts, into which the finger could be placed. The circumference of the abdomen was upwards of eighty inches, and the tumour lay, not merely as large tumours do, upon the thighs, but upon the legs also. It was the largest growth of any kind that I had ever seen, and it had nearly all come in a year. Its weight must have exceeded 200 lb.

Till now, the menopause was looked forward to as the one great hope, but with this huge growth before me I felt at the end of my resources in that direction. Little wonder, then, that some of the friends were beginning to despair, and said to me, "Oh, when shall we begin to climb the hill that we have so steadily been going down these six long, weary years!" Something had to be done, and now there was no difficulty in getting my own way. Knowing the loose cellular structure of these œdematous fibroids, I proposed to break up this structure, in order that at least one large cavity could be formed, into which the serum would collect, and from which it might from time to time be removed by the aspirator. At first I thought also of drainage, after this had been done, but the circumstances were unfavourable for draining such a mass, and the risk of putrefaction coming on rapidly was too great. Under the faith of the carbolic spray—for I had then faith that this would give protection from the germs of ages that lay

in every hole and corner of that old Italian home —I made an incision at the umbilicus, and exposed the capsule of the tumour. Carefully selecting a spot where there seemed to be no large vessels—for the circulation in these tumours is almost entirely in the capsule—an opening was made into it, and the upper half of the tumour was broken up. For this purpose a large trocar was used, the size of an ordinary poker, which I got specially made for this purpose. This was stirred about in every direction, the cellular septa of the interior very much broken up, and a large quantity of red serum was got away. This softened the whole tumour, and took the pressure off everything all round. The wound was then closed. It was rough surgery.

Some feverishness followed on this operation. The incision, however, healed, and after a few days I got away. It was arranged that fluid should be drawn off wherever there was tension. In a fortnight this was done, the puncture made being quite low down, and far from the incision that was made. About seven pounds of clear serum were removed, and in little more than ten days it was necessary to repeat the puncture. The feverishness that had never left her now increased, and I was telegraphed to say that the next puncture was above the cicatrix of the incision I had made six weeks before. A quantity of sour, evil-smelling brown stuff escaped this time. The temperature had now risen to 105°, and the pulse was rapid. I replied that at all risks a very free incision should be made, and the wound allowed to remain open. The responsibility of doing this no one would undertake, and nothing whatever was done. I have now before me the notes of the pulse and temperature taken four times a day during the seven weary months that followed. How she lived is a marvel. The mean temperature was about 103°. Every twelve or fourteen days seven litres of stinking pus were removed, always

with relief. Then after one of these punctures sudden collapse came on, the feebleness became great, and once more I saw her in April 1879. The change, though in a different way, was now even more wonderful than before. The tumour had shrunk to such an extent that the flattened irregular solid mass was not greater than that of two adult heads; but the huge capsule was felt in the flaccid abdomen, just like a large thick-walled ovarian cyst after a tapping. So great was the emaciation of the rest of the body, that I have never seen anything like it and life go on.

I made an incision twelve or fourteen inches long, right through the capsule, and slit up the tumour down to the pubes, cutting into a huge cavity filled with putrid pus, masses of old fibrin, broken down tissue, and a large, more recent clot, nearly the size of the head—the result of the wounding of some vessel in the last tapping, when the collapse came on. The abdominal wall and capsule were matted together. Near the edges of the divided capsule the hæmorrhage was easily arrested by a few pairs of forceps; but the lower six inches were through uterine tissue, at least two inches in thickness, and on dividing this, the bleeding was so copious that it might have been fatal in a few minutes. For this I was fortunately prepared. Each wall was grasped in a strong hand, and a number of stitches were rapidly put in by double needles on either side, about an inch from the edge of the incision—each embracing an inch of tissue, and tied right over the skin. In no other way could the bleeding have been so rapidly and easily restrained. The cavity was then well cleared, and the surface thoroughly rubbed with towels; then it was washed with chloride of zinc, and again dried. The huge wound was left lying quite open, and a mass of oakum put over all. When the fragile form was lifted into bed, a cold perspiration pouring from every pore, it looked as if nature had

been asked to do too much to repair the injury that was made.

That night the temperature was under 98°, and the pulse better than it had been for months. She took food and stimulants well, her strength came slowly back, and on the anniversary of the operation I had a joint letter from the family in joyful commemoration of the day. She had recovered from the sad state to which illness had reduced her. She was then able to go about with the help of a walking-stick, for the spine had now got a slight lateral curvature. The tumour had disappeared all but a lump the size of a fist, and the incision had contracted to a small point, from which there was a trifling oozing of limpid serum.

Yet another year and I had to see her again, May 1881. For some weeks she had been out of sorts, and it was observed that the opening was enlarging, apparently from the solid portion of the tumour that still remained being pressed against the opening. There was a return of the symptoms of suppurative fever. I found that a collection of matter had formed in the old capsule, behind the solid part. I cut to the side of this through uterine tissue, and opened into an abscess, which held about a pint of healthy-looking matter. There was free bleeding from the divided uterine structure, and a number of ligatures had to be applied, so that this second operation, though comparatively nothing, was more troublesome than the former one. The weather was then intensely hot, and she did not rally so well as before. She was, however, well enough to be moved a long journey into the Appenines some weeks after. A troublesome diarrhœa after some time, for which bad water was blamed, much reduced her strength, and some friend who had lately been in London returned with such glowing recollections of the restorative qualities of beefsteak and London porter, that, in an evil hour, these things were tried

on her. At any rate, this seemed to be the last straw, and she died.

The above case, given at greater length than I intended, tells its own story. It was once very near to being a success, and but for the distance, perhaps it might have been. Through these years, the quiet endurance of the patient, and the unflagging tenderness of friends were very touching. It was one long lesson. It was all beautiful.

No.			Result.
1	D	... ...	Recovered.
2	D	lhesions ...	,,
3	D	s	,,
4	D	... ...	Died 9 days.
5	D	... ...	Recovered.
6	D	nucleation ...	,,
7	H	ation	,,
8	H	projecting from	,,
9	H	... ...	,,
10	H	sions	,,
11	D	... ...	,,
12	H	... ...	,,
13	D	oroid	,,
14	H	... ...	,,
15	H	... ...	,,
16	F	... ...	,,
17	H	... ...	,,
18	H	... ...	,,
19	H	... ...	,,
20	D	... ...	,,
21	H	e, mesentery, and	Died 7 days.
22	D	... ...	Recovered.
23	H	ries failed ...	,,
24	H	... ...	,,
25	H	... ...	,,
26	H	... ...	,,
27	H	... ...	,,
28	D	... ...	,,
29	H	noved	Died.
30	H	us removed ...	Recovered.
31	D	... ...	,,
32	D	t opened up ...	,,
33	H	... ...	,,
34	H	... ...	,,
35	D	... ...	,,
36	D	... ...	,,
37	H	agm	,,
38	H	... ...	,,