is pregnancy. I have already said that during the whole period of gestation menstruation may occur with normal regularity and in normal quantity, and also that a rapidly growing ovarian cystoma may arrest the menstrual flow. It has been my experience, as it must have been the experience of every special practitioner, to have patients brought to me as suffering from tumor when their real state was that of pregnancy, and I need hardly say that this occurs chiefly in unmarried women. I have, however, had it occur more than once in a married woman, and I can call to mind an instance of this of a somewhat dramatic kind.

A lady forty-two years of age who had been married twice and whose married life extended over eighteen years was brought to me by her doctor as a case of ovarian tumor. With very great difficulty indeed I persuaded him that it was a case of pregnancy, and that she must be within a few days of her confinement. My opinion, however, was entirely disbelieved by the patient, and it was only when the pains of labor came upon her that she accepted the accuracy of my opinion. She was confined of a dead child and her labor very nearly cost her her life. Only a few days ago a hospital patient was sent to me as being a case of ovarian tumor. She was of very large size, the feet and legs were much swollen, nothing could be felt in the pelvis, and she had seen no appearance of menstruation for sixteen months. Yet a careful stethoscopic examination revealed the sounds of the fetal heart, and by getting my hand into the vagina I found the cervix normal, though very high up. It turned out to be a case of pregnancy with cardiac dropsy.

In the event of a young unmarried woman presenting herself with an abdominal tumor the utmost caution must be observed, for there is no limit to the persistency of the denial such patients will make as to their condition. Medical experience is full of illustrations of this, and I have heard very many anecdotes from my professional brethren illustrating it. Some of their patients even went so far as to deny the possibility of their being pregnant when labor was in the third stage. A few weeks ago a patient came to the hospital to consult me concerning an abdominal tumor. It was manifestly a case of advanced pregnancy. Yet when it was delicately suggested what the possibility of her state was, she indignantly denied it; but when I proceeded with the requisite examination I found not only that she was pregnant but that the recto-vaginal septum had been completely destroyed in a previous labor. No amount of scepticism in these cases will therefore be too great, but the practitioner will be wise who keeps that scepticism to himself. If

the tumor is of small size and the patient is not suffering, only two questions need be asked—is her menstruation arrested, and, if so, was it regular previous to its recent stoppage? If these two questions are answered in the affirmative, I would advise that an examination should not be made at the first visit but that some slight *placebo* be given and the patient be asked to repeat the visit at an interval of seven or eight weeks; and at the same time some gentle hint may be dropped that the case is probably one of a nature that will not require operation. In the majority of cases I find this is quite enough, and that the patients very soon realize their position and do not trouble me again. If, however, they should come back, upon the second or third visit I advise that an investigation should be made. I need not here describe the evidences upon which we base a diagnosis of pregnancy, and shall allude to one only in detail, because it is one but little known as yet, and it is a sign more valuable perhaps even than that derived from auscultation, in that it can always be observed, whereas the fetal heart cannot always be heard. I mean the rhythmical contraction of the uterus. If the hands be placed on the abdomen of a case of suspected pregnancy and a fluctuating tumor be felt, that tumor will become quite tense and like a myoma if the examination be prolonged for a few minutes. Then again it will become flaccid and fluctuating, and this alternation will go on rhythmically at varying intervals. Once this sign has been felt and recognized, I think it will be impossible for the observer ever again to be deceived by a pregnant uterus. Let me again impress upon every one the necessity of caution in giving an opinion to the effect that a patient is pregnant.

A most disastrous case of this kind occurred some years ago in my practice, where a young and very attractive girl, who suffered from an ovarian tumor which I subsequently removed, was examined by four different practitioners, all of whom were men of experience and two of whom saw the patient together in consultation. All four of these men asserted, I am told, that they heard the fetal heart, a sign which is regarded as conclusive of the existence of pregnancy. The girl when seen by me communicated none of these facts; she was brought to me by her parents and I knew nothing of her previous history. I had no hesitation at all in pronouncing it to be a case of ovarian tumor, and in the course of a few days I removed it. One of the practitioners under whose care she had been, was foolish enough to continue his statement that the girl had been pregnant and that my statement that I had removed an ovarian tumor was a falsehood. For this extraordinary conduct he was very properly

called to account by the parents of the patient, and it was only by his tendering a most ample apology that he was saved from an action for damages. Fortunately for me it happened that the operation was performed in the presence of two gentlemen who knew both the patient and the practitioner, so that it was a very simple matter for me to prove the accuracy of my statement.

The interest of the case centres upon this: How was it that all these four men declared that they heard the fetal heart? I am bound to say that upon this point I can offer no possible explanation, unless it be that some curious intestinal sound of a rhythmical character was given out during their examinations. But the case is such a striking one, and has, I believe, been so disastrous to the practitioner to whom I have alluded, that I quote it as a warning to every one to exercise the utmost caution in pronouncing an unmarried woman pregnant. Nevertheless, when such a patient presents herself, the suspicion of pregnancy must be ever present in the mind, for it is by far the most likely condition, and it must only be by repeated examination and the concurrent testimony of physical signs that any positive opinion should be given. Far better at any rate to defer an opinion for some time than to run into such a mistake as that I have instanced.

One other caution I shall give in connection with such cases, and that is never under any circumstances employ a sound where there is a possibility of pregnancy.

Sometimes pregnancy may coexist with an ovarian or parovarian tumor, and this might of course happen in an unmarried woman, though I have never seen such a case. But it is by no means infrequent in married women, and then the diagnosis is a matter of very great difficulty. We are, however, removed from the risk somewhat by the fact that married women are much more likely to assume they are pregnant than that they are not, and attention will be drawn to their condition more by unusual size than by any other feature, and they have no inducement to conceal the possibility of pregnancy.

Here I may mention one of the abnormal conditions of pregnancy which every now and then leads to a terrible disaster by being mistaken for a peritoneal dropsy or an ovarian tumor. In this disease, hydramnios, we have of course an arrest of menstruation for some months, generally four or five, and this ought to lead to a suspicion of what is the matter; but on the other hand, being one of the diseases of the primiparous woman, we have it unfortunately more frequently, or at least quite as frequently, in unmarried women as in married women. It is always associated with albuminuria, and very often in its course we have

the characteristic convulsions of that disease when it is associated with pregnancy. I have seen eight cases of hydramnios, and I am very pleased to be able to say that I have not been led into the blunder of tapping any of them. Seven out of these eight cases have been associated with twin pregnancies, and this is too great a proportion to be a matter of accident. They have all occurred in primiparous women, and the most advanced case had reached only the sixth month of pregnancy. The distention of the uterus in all of them had taken place with amazing rapidity; in one case the limit of time was probably less than a fortnight. I would therefore advise that any young woman whose abdomen was found to be large, and inwhom the distention had occurred with great rapidity, the first thing to be examined should be the urine, and if this be found to be albuminous, let every proceeding be taken with the utmost caution. Of course no intestinal note of resonance will be found save at the usual seat of the corona, and on pelvic examination the distention of the uterus will be made clear. This is easily determined by getting the patient into the erect position and then making a vaginal examination. The child or children will then be found settling down on the point of the finger, and can easily be felt through the thinned uterus. A slight push will send the mass floating up toward the fundus, whence it will sink in a few seconds. In this way I have readily made a differential diagnosis between a unilocular ovarian cyst and a distended uterus.

The diagnosis will then be complete, and the treatment, which is to empty the uterus as rapidly as possible, to administer chloroform freely in the event of convulsions, and to give such remedies as are appropriate for puerperal albuminuria, may at once be proceeded with.

I have known three practitioners, all men of ability and extended experience, who have been unfortunate enough to tap a patient suffering from this disease, and who were immensely surprised to find the patients miscarry in a few hours and die shortly afterward. When conversing with these men I found that none of them had ever heard of this unusual disease; and yet, from my own experience, I can hardly regard it as extremely rare. It is, however, but slightly alluded to in the text-books upon these diseases.

There is another disease in which fluid is collected in the cavity of the uterus, owing to occlusion of the cervix, and to which the name of hydrometra has been given. This condition is probably very rare; I have only seen one case. It is rather difficult to understand how it is arrived at, more particularly in such a case as that which came under my care, in which the patient

was nineteen years of age and had menstruated for about three years in the normal way. Before I saw her, menstruation had ceased for about two years, and her abdomen had steadily increased in size. The physical signs were all those of a parovarian cyst, and I did not examine the condition of the pelvis because the patient was a virgin. I proceeded to operate in the ordinary way, and found there was no appearance of the layers of peritoneum. After passing through what was clearly a thin layer of muscular tissue, I opened the sac and removed nine pints of clear limpid fluid. The inside of the cyst was rugose, and the cyst itself rapidly contracted after being emptied. Passing the forefinger of my right hand into the vagina and having my left forefinger in the pelvis, I made out clearly from the relations of the cervix that the cyst was truly the cavity of the uterus. I fastened in a drainage-tube, and kept it there for about three weeks, and after its removal the wound speedily healed. The patient has since remained in perfect health, but has never menstruated. I doubt very much if I should have diagnosed the case any more completely if I had examined the pelvis previous to the operation, and the mistake I made fortunately turned out to be of no importance. Had I been able to make a correct diagnosis of the case it would have been an easy matter to have passed a drainage-tube through the cervix without performing abdominal section. This disease is only alluded to by authors as a possibility, and there are very few descriptions of cases, such as there are being described as having occurred in old women after the climacteric. There is one exception, given by M. Richard as a case of hydrosalpinx in which, when he applied pressure, he was able to force the fluid into the uterus and out of it. His diagnosis may of course be correct, but I think that it much more likely was a case of hydrometra.

The retention of menstrual fluid within the cavity of the uterus from occlusion of the cervix, or more frequently from atresia of the vagina, is a much more common occurrence. I have seen some seven or eight cases of it, but in none of them did there seem to be much possibility of it being mistaken for an ovarian tumor. In the first place the patient is nearly always brought under notice on account of the intense menstrual pain due to the monthly additions to the contents of the uterus. The history was given in all of them that no external appearance of menstruation had occurred, and these two circumstances alone are sufficient to suggest the true nature of the case. Examination of the patient will reveal two things which are decisive. The first is the presence of a tumor of comparatively small size, smooth, ovoid, central in position, and very tender to the touch;

and, secondly, there will be found some form of malformation of the genital canal. If there be doubt, an examination under ether will easily reveal the fact that the tumor is uterine. Some cases of this kind are described as occurring in women who have menstruated normally and who have even borne children, the occlusion having been due to the union of the uterine lips or of the walls of the vaginal canal after some injury or ulceration. I have not seen such a case, but the symptoms would be the same, and the history would probably give a significant clue to the diagnosis.

There are two remaining conditions of the uterus which may require to be differentiated from ovarian tumors, one of which is much more common than the diseases I have just spoken of. They are fibro-cystic tumors and myomata. The fibro-cystic tumor of the uterus is an extremely rare affection, so rare that until four months ago I had never seen a case, and in that case it was absolutely impossible to distinguish the growth from a parovarian cyst. She was sent to me by Dr. Leacroft, of Feckenham, and was seen by me originally about five years ago, when I diagnosed a parovarian cyst and advised its removal. This she declined, and in the interval she was tapped several times by Dr. Leacroft, at each tapping the tumor being apparently emptied and no solid matter being left. She had never been pregnant, was fifty-three years of age at the time of the operation, and had menstruated all her life with perfect regularity, until the age of fifty. After the climacteric period the tumor grew with great rapidity, and it was after the change that she was first tapped. When examined the uterus appeared to be quite free from the tumor, and the physical signs were those of a unilocular and therefore probably parovarian cyst. At the operation I found the tumor to be densely adherent all over its front aspect, and I had not been engaged in its separation long before I recognized the familiar appearance of uterine tissue. It was quite impossible to remove the whole of the tumor, which consisted entirely of one cyst, and I left about one-sixth of it in the pelvis, cutting it off as low down as I could by means of the cautery and tying several large vessels. Subsequent examination gave conclusive evidence that the walls of the tumor were composed of uterine tissue. The operation was an extremely severe one, for numerous coils of intestine had to be separated from the posterior wall of the tumor and both ureters were laid bare. She had no bad symptoms for four days, but upon the fifth she began to sink and died upon the seventh. A *post-mortem* examination was made by Dr. Saundby, who found that the space occupying the lower third of the abdomen contained a considerable quantity of bloody fluid,

on removing which a suppurating area was discovered. The lower part of this consisted of the remains of the uterine mass. Dr. Saundby notes that a loop of intestine had its mesentery entirely torn away, but was living and uninjured. The left ureter was compressed by old inflammatory adhesions, and the left kidney was atrophied and cystic. Death in this case might, I think, possibly have been avoided if I had adopted Dr. Keith's plan of drainage. It is very likely indeed that a fatal issue would have occurred even if the drainage-tube had been used, but if I had another such case I should certainly use it. Had I operated when I first saw the patient, before she was tapped, I think it more than likely she would have recovered; and I also think it might have been better to have clamped the cyst outside than to have dealt with it by the intraperitoneal method. It is in such exceptional cases that the clamp may be of service.

The growths which have usually been described as fibro-cystic tumors of the uterus have been multi-cystic, and what their origin is I really cannot say. There seems to be no tissue in the uterus from which one would expect cysts to grow, yet there is no doubt they are produced in the organ. Their diagnosis as ovarian tumors would be very much the same as the diagnosis of myomata, with the addition that the discovery of fluctuation would lead to the suspicion of cystic disease. I am under the belief, however, that without experience a differential diagnosis of fibro-cystic tumors would be a very difficult thing, and that it is possible only in the hands of a surgeon who had made two or three previous mistakes. In such a case as I have described of a unilocular cystic tumor of the uterus a correct diagnosis was absolutely impossible.

Concerning uterine myoma I shall only speak so far as this disease simulates ovarian dropsy, for with the many other phases of it I am not at present concerned, though when speaking of ovariotomy I intend dealing more fully with it. There is one most constant clinical feature characterizing myoma which is seldom met with in ovarian cystoma, which alone will often decide the nature of the case: I refer to menorrhagia. I have already said that there are conditions of the ovary which produce intractable uterine hemorrhage, but this is quite exceptional. On the other hand we see many cases of uterine myoma in which hemorrhage never appears as a leading feature; still, given an abdominal or pelvic tumor, constantly recurring menorrhagia and a distinctly anæmic appearance of the patient, the surgeon may take it for granted that the chances are immensely in favor of the disease being a uterine myoma. On examining the abdomen of a patient suffering from the disease a

variety of conditions may be discovered. Thus there may be a large ovoid smooth tumor occupying a perfectly central position and which may give rise to a feeling so closely resembling fluctuation as to deceive the most experienced hands.

Such a case as this I operated upon three years ago, where a very distinguished surgeon had previously performed dry tapping, that is to say, he plunged a trocar deeply into the tumor and got nothing out, the result of this experiment being that the tumor grew with increased rapidity. When I first saw her I also was under the impression that the tumor was ovarian because there was nothing in the pelvis to contraindicate that view, and the tumor was uniformly smooth and ovoid. It was only after repeated examinations that I began to entertain a suspicion that the tumor was really uterine and was probably one of the variety to which I have given the name of "œdematous myoma." I advised the removal of the tumor, and when I came to operate I found that this suspicion was correct. The tumor grew from the fundus and was encapsulated by a thick layer of uterine tissue. The body of the uterus formed an excellent pedicle around which I placed a clamp. The patient recovered perfectly well and is still alive, enjoys excellent health and continues her occupation of monthly nursing. The tumor on removal weighed thirty-seven pounds, and consisted entirely of uterine muscle-cells distended into a meshwork by a large quantity of serum which drained away, leaving a solid mass of only about twenty pounds. The sexual functions of this patient are wholly unaltered.

It is very much more common to find these myomatous tumors perfectly solid, so that they give no sensation of fluctuation at all, and instead of being smooth and uniform in contour they are far more often nodulated into eccentric forms. Sometimes their position is not at all central. I have seen a large myoma shaped like a cocked hat running up altogether on the right side and having no position at all to the left of the middle line. In such a case there can hardly be room for doubt in the diagnosis, for we never see ovarian tumors having such characters, at least none such has ever presented itself in my experience, although sometimes small outlying cysts of an ovarian tumor may somewhat resemble through the skin the nodules of a uterine myoma. But it is when a pelvic examination is made that little room is left for doubt. Nearly always the tumor may be at once determined as having a most intimate relation with the uterus; and if the forefinger of one hand be kept firmly pressed upon the cervix, while with the other hand the tumor is made to move freely from above, the case will be easily and

clearly determined, though here again sometimes an ovarian tumor, solid and with a very short pedicle, may very closely resemble in its pelvic conditions those of a uterine myoma. Finally, the sound may be employed to assist in the diagnosis. In an ovarian tumor the uterus is rarely elongated, while in a myoma it nearly always is; but, as I have elsewhere said, with increased experience the surgeon will find the sound to be an instrument becoming less and less useful to him, and he will find the cautions I have already given regarding its employment becoming more and more deserving of respect.

Solid uterine tumors, besides the absence of fluctuation, often have in addition two vascular signs which I have never met with in ovarian tumors; namely, an aortic impulse, which may be seen and felt, and an enlargement of the uterine arteries to be felt in the vagina. In one case I satisfied myself that the tumor was uterine, mainly because at the flexure of the vagina on one side I felt an artery as large as the radial. There is also a uterine souffle to be heard in most of the growths, and it is best heard in the vagina.

If the tumor be found to be solid but not uterine, yet attached to the uterus and moving it to an extent which may lead to the belief that it is ovarian, then we have a choice between a dermoid cyst, a fibroid tumor of the ovary, cancer of the ovary, or a pedunculated myoma of the uterus. A dermoid cyst is rarely so constituted that it will not give fluctuation at some part or other; and its peculiar nodulated character, with here and there spots of bony hardness, will often betray it. Fibroid tumors of the ovary are very rare, and cancer of the ovary alone occurs in only one form, the fibroid, which is of extreme rarity.

Mere dropsical effusion into the cavity of the peritoneum does not usually offer any difficulty in its recognition, but every now and then a case will be met with in which, from exceptional causes, some difficulty will occur in recognizing such a case. Thus I have more than once opened an abdomen under the complete belief that I should find an ovarian tumor, but have instead found only masses of cancer with an abundant ascitic effusion. This is due to the fact that in such a case the intestines have become adherent or have been wedged backward by a large mass of fungus in the omentum, so that no resonant note could be obtained in front, whilst it was readily given in the flanks. In such a case, of course, the mistake is of no great importance, for all that happens is that the patient is tapped by an exploratory incision instead of by a trocar, and there is the advantage that an absolute certainty of the diagnosis is arrived at.

One very curious case came under my notice about two years ago in a girl aged eighteen, who had an enormous ascitic effusion. When she was admitted under my care at the Women's Hospital there was no difficulty at all in recognizing the condition, so that I tapped her for it more than once and was absolutely certain that my diagnosis was correct. The girl appeared to be in all respects save that of the dropsy perfectly healthy, and no kind of lesion which could account for the dropsy could be discovered. In order to clear up the case I transferred her to the care of a friend who was a physician attached to another institution. There she was kept under observation for several months without any additional information being obtained, save that there appeared to be a small amount of effusion in both pleuræ; still no distinct clue could be obtained of the cause of her singular condition. By a mischance she fell into the hands of another practitioner, who unwisely expressed the opinion that it was undoubtedly a case of ovarian disease, and he proceeded to treat it on that belief. When the abdomen was opened, however, my diagnosis was completely confirmed, but unfortunately the operator did not take advantage of the opportunity to discover the cause of the dropsy, so she left the institution in which the operation was performed without any additional light being thrown upon the case. She was tapped repeatedly until she died, and then again an opportunity was lost of obtaining information upon one of the most remarkable cases which has ever been under my care.

Quite recently I had another singular experience of dropsy of the peritoneum imitating, still more closely, cystic disease. I was called by Mr. Whitcombe, the superintendent of the Birmingham Lunatic Asylum, to see a girl in whom the abdomen had increased with amazing rapidity. I diagnosed a parovarian cyst, and in a few days I opened the abdomen to remove it. I found, however, that it was not a cyst of the broad ligament, but a dropsical distention of the lesser cavity of the peritoneum, due to occlusion of the communicating cavity by peritonitis. The inflammation was general, and in spite of drainage she died of the disease in a few days. At the post-mortem it was found that the whole mischief was due to a common seamstress' sewing needle lying in the great omentum just over the foramen of Winslow. The patient had probably swallowed it, and from the stomach it had passed out into the position where it was found.

Such an occurrence is of course of the most unusual kind, but of great interest as showing how difficult exact diagnosis is in abdominal diseases. The case is also of value as an illustration