An Address

ON

OPERATIVE AND EXPECTANT TREATMENT IN ECTOPIC PREGNANCY.

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SOME interesting and instructive papers have recently appeared the writers of which have taken trouble in comparing the results of ectopic pregnancy treated on expectant principles and treated by operation. But such a comparison appears to me not helpful in practice. There ought to be no question of comparison. Each mode of treatment has its own place. There are events in the course of ectopic pregnancy which indicate operation, and there are also times at which expectant treatment is right. In this communication I purpose to point out as definitely as I can when an operation ought to be done and when it ought not to be done for ectopic pregnancy.

Let us consider first the very earliest stage, before haemorrhage has taken place. I am not sure that any case has been diagnosed as tubal fetation before haemorrhage has taken place. Mr. Rumley Dawson has published two cases in which the diagnosis was made before the end of the first month, but the report does not state whether haemorrhage had taken place or not. The diagnosis is so seldom made thus early, because until haemorrhage has taken place either into the tube or outside it there are no symptoms beyond the vague subjective symptoms which often announce to the patient that she is pregnant. Now and then, although there are no definite symptoms, something will cause anxiety and she may come for examination. Then if the examiner is skilful he may perceive a slight enlargement of one tube, together with slight enlargement of the uterus. These physical signs, together with the patient's belief that she has become pregnant, will warrant a reasonable suspicion that there is a tubal pregnancy.

What ought to be done? Undoubtedly, the proper treatment is removal of the pregnancy by abdominal section. Contrast the immense dangers that the patient incurs if the tubal pregnancy is left to take its course with the small risk of the removal of a pregnant tube. The only consideration which can cause any hesitation about operating in such cases is the difficulty of the diagnosis. This difficulty is not usually in concluding that ectopic gestation is present, but is rather in being certain that there is anything at all the matter. No one likes to urge a serious operation on a patient who feels quite well, and whose physical signs are so slight that it is possible, were a second opinion asked for, that the surgeon consulted might in perfect good faith, and with every wish to agree with his colleague, yet be unable to perceive any disease. A pregnant Fallopian tube is not so firm as an inflamed Fallopian tube; and its detection by palpation is in consequence more difficult. For these reasons the removal of gravid tubes before rupture or haemorrhage is, and I think will continue for long to be, one of the rarest surgical achievements.

Take now the case a stage further. The pregnant tube has not been removed; and the chorionic villi have perforated the tube on its peritoneal aspect. The result is profuse bleeding into the peritoneal cavity. The doctor is hurriedly sent for. He finds the patient collapsed, blanched, with quick, feeble pulse. Her mind is clear, her breathing is easy, and there is no external bleeding, or, if any, its amount is too small to account for the patient's prostration. On inquiry the doctor finds that when menstruation was last expected it came not, and the patient suspected she was pregnant. With such signs and symptoms, and such a history, there can be little doubt as to the probable diagnosis. Ruptured tubal gestation is a far commoner cause of great intraperitoneal bleeding in a young woman than anything else; commoner far than all the other causes put together.

What should be done? At once open the abdomen, and remove the ruptured tube. What objections can be raised to this course? It may be said that, if nothing is done, syncope will come on, the bleeding may stop, and the patient get well without operation. It is true that the patient may get well without operation, but how many such cases do? Thirty years ago such cases were always treated without operation.

The opinion of those who then practised is important evidence of the chances of recovery or death. Parry's estimate of the total mortality of ectopic pregnancy was about 68 per cent., and of this 53 per cent. he thought due to rupture. This does not give strong ground for trust in the resources of Nature. Further, if the bleeding stops, the patient is not always cured of her illness. The fetus may go on developing, and peril arise subsequently. I think, therefore, that the physician who in a case of internal haemorrhage advises the surgeon to do nothing assumes a very grave responsibility indeed.

It may be objected that the advice to operate is good when the patient is in a well-appointed hospital or in circumstances such that she can command the services of an experienced abdominal surgeon; but that when the patient must be operated upon in her own home, and the surgeon who has to operate is a general practitioner who only occasionally has surgery to do, he had better let the patient take her chance without an operation. If the practitioner's inexperience is such that he is not acquainted with antiseptics, I grant this. But with the younger generation of practitioners a knowledge of asepsis is, as it were, their surgical alphabet. The operation of removal of a perforated Fallopian tube is one of the simplest and easiest in surgery. The operator should open the abdomen in the middle line. Three inches is a long enough incision. Then he should put in two fingers and feel for the uterus. This is a body so large and firm and so different from everything else that is felt in the peritoneal cavity that there is no difficulty in its identification by touch. With the uterus as a guide the operator then traces outwards each Fallopian tube. He will find one of them enlarged, and, holding it between two fingers, can easily bring it up through the wound. The perforation will then be visible. The broad ligament should be transfixed and tied with two interlocking ligatures and the tube cut away. There is no need to remove the ovary. The inexperienced operator's confidence in himself will be strengthened if he remembers that the very fact of pregnancy implies that the pelvic peritoneum is practically healthy, for adhesions about the mouth of the tube almost of necessity produce sterility. As a matter of fact, in almost every operation for rupture of pregnant tubes—in all that I am acquainted with—the tubes were found free from adhesions.

Another objection, and one possibly operative in practice, is that the patient is so bad that she cannot stand the shock of an operation. If the patient is going to die the doctor naturally prefers she should die without his intervention rather than after it. But if the patient is dying from haemorrhage, the only way to get her out of the fatal collapse is to stop the haemorrhage. You cannot see through the abdominal wall whether the perforated tube has ceased to bleed or not. The only way to tell is to pick up the tube and look at it, and the only way of surely stopping the bleeding is to tie and remove the diseased tube. And however prostrate the patient may be, when the bleeding has been stopped there are means of reviving her—the introduction of water into the peritoneum, into the veins, or into the cellular tissue, which are most powerfully restorative when bleeding has been stopped but useless till then. It is as yet an open question whether it is necessary to remove clot from the peritoneal cavity. If the abdomen is not opened the blood is generally absorbed, and I have read of cases in which no attempt has been made to remove clot and the patient has done well. Still it would seem the better practice, when a mass of clotted blood is lying in the peritoneal cavity, to remove it and so save the peritoneum the trouble of dealing with it and the bacterium coli the temptation of invading it. I think it has been the practice of most, as it has been mine, to leave the peritoneum as clean as possible within a short time and with a small amount of friction.

For the foregoing reasons I think that the right thing to do, even if the practitioner be not an experienced abdominal surgeon, in the case of great intraperitoneal bleeding in a young woman, is to open the abdomen without delay and stop the bleeding.

Intraperitoneal bleeding is happily a comparatively rare, though a formidable accident in the course of tubal pregnancy. It is much commoner for some chorionic villi to give way, and bleeding to take place into the chorion or into the tube. This effused blood very soon distends the tube, and the pressure then stops further bleeding. The blood clots, and we have the condition known as a "tubal mole." What happens next? I have no doubt that the majority of tubal moles are ab-

sorbed. I think so for this reason. Of late years, during which abdominal section has been freely done for tubal pregnancy, tubal moles have been found to be very common, much commoner than ruptured tubes. Thirty years ago, when operations were not done, tubal moles were never heard of. Now and then a tubal mole was seen, but they were not common enough for any one to take the trouble of comparing a number of them and describing the morbid process. But every museum contained specimens of ruptured tubes. The London Hospital museum contained several ruptured tubes put there by Dr. Letheby and Dr. Ramsbotham, but I was the first person to add to it a tubal mole. The only explanation I can see, why in pre-operative days tubal mole was so little heard of, was that they were nearly all absorbed.

When a tubal mole has been formed, the diagnosis is easier than it was at an earlier period. There are not only the subjective symptoms of pregnancy and the enlargement of the uterus, but there will have been pain, and very likely uterine haemorrhage from partial separation of the decidua. The tubal swelling will be larger and firmer, and clearly appreciable even to comparatively inexperienced fingers. What is to be done?

I have said that nearly all tubal moles are absorbed, but are they all absorbed? And if absorbed, are they absorbed without detriment to health or danger to life? Certainly not. The patient is in some danger of death and in considerable danger of a long illness. Perforation, with intraperitoneal bleeding, may yet take place. A pelvic haematocoele may form. The tube may suppurate. On the other hand, the removal of a tube which contains a mole is as easy and as safe as the removal of a tube which does not contain a mole. The only difference between the removal of a ruptured tube and the removal of a tubal mole is that in the latter case the operation may wisely be postponed until every preparation has been made for operating under the most favourable circumstances. The danger of removing a tubal mole is far less than the danger of leaving it in the abdomen.

Suppose now that the tubal mole is not removed; that, as often happens, the patient does not consult her medical man until something else has happened. Generally further haemorrhage takes place, and the blood escapes from the fimbriated end of the tube. Or the tube may be perforated, but only a slight haemorrhage occurs. In that case the blood irritates the peritoneum, and adhesions are formed among the bowels round it. Often further haemorrhage takes place, but the blood is then poured out into a space bounded by adhesions among the bowels, so that it cannot escape into the general peritoneal cavity, but remains in the pelvis and displaces the pelvic viscera. It generally fills Douglas's pouch, pushing the uterus forwards, and the bladder forwards and upwards. Its forward pressure may be so great as to cause retention of urine. Repeated haemorrhages occur, until the chorionic villi are so extensively damaged that the ovum dies. It may become completely detached, and expelled, presumably by contractions of the tube, out of the fimbriated end of the tube. When the ovum is dead haemorrhage ceases to occur, and in most cases the ovum and the effused blood are quickly absorbed. This is the common, but not the invariable, course. In most cases the blood clots, but in some it remains fluid for weeks, we know not why. Although some chorionic villi have been detached, and haemorrhage has taken place, yet the fetus may not die; it may go on growing in the peritoneal cavity. If so, as it grows chorionic villi will spread beyond the tube, and implant themselves on neighbouring abdominal viscera. If there should be a great haemorrhage, the limiting adhesions may be torn through and great haemorrhage into the peritoneal cavity take place. If the blood is not quickly absorbed, it may become invaded by microbes and suppuration take place. The tube may be perforated where it is in relation with the cellular tissue between the folds of the broad ligament, and blood be poured out into the cellular tissue of the pelvis underneath the peritoneum. Considerable haemorrhage may occur here without the death of the fetus, which may develop to full term underneath the pelvic peritoneum. These are the possibilities that we have to consider in deciding how to treat a case of pelvic haematocoele. Most of them end in absorption. In a few the events I have mentioned occur.

An encysted effusion of blood in the pelvis is not hard to recognize. If the blood is in Douglas's pouch it will push the uterus forwards and bulge down between the rectum and vagina. Felt from the rectum the swelling will be convex. It will at first be elastic and fluctuating afterwards, when the

blood has clotted, firmer and irregular. The history will be of a sudden illness, marked by abdominal pain, pallor, and faintness, and preceded by the subjective symptoms of pregnancy. If the bleeding is into the cellular tissue it will surround the rectum, and the finger passed into the bowel will feel it like a half-ring. In the case of a large haematocoele there is less difficulty in diagnosis than in a small one, for an inflammatory swelling of large size requires time for its production, and is accompanied with general symptoms of inflammation.

The diagnosis of pelvic haematocoele having been made, what is to be done? We may with profit look back fifty years. When French surgeons first taught the medical profession to diagnose clinically collections of blood in the pelvis they thought it was the best practice to let out the blood. But at that time they had no knowledge of anti-sepsis. They let out the blood with dirty instruments held in dirty fingers, and in consequence some of the patients died from blood poisoning. Such experience made them more chary of interference; they learned to let the haematocoeles alone, and found that nearly all of them in time disappeared, and that some were absorbed very quickly. The structure of the human body has not altered since then, and I think the surgeons of forty years ago could diagnose pelvic haematocoele as accurately as we can to-day. The chief thing about the disease which they did not know was the frequency with which it depended upon tubal mole and tubal abortion. We may learn, then, from the practice of forty years ago, that if we leave a pelvic haematocoele alone it will probably—indeed, almost certainly—be absorbed. Sometimes it will be absorbed very quickly.

But absorption is not certain, and often it is slow. It is not safe to predict recovery without telling the patient that she will be more or less of an invalid for months. There is generally in the early days of a pelvic haematocoele a little fever, there is pelvic pain, weakness, some bladder and bowel irritation: and these discomforts, to use the mildest term, often persist for many weeks. When I have been called in consultation to a pelvic haematocoele, and have advised expectant treatment, I have usually told the patient that she would be an invalid at least three months.

Is it not, therefore, better to shorten the course of the illness, and avoid possible ulterior risks, by early operation? In considering this question, we must remember, first, that absorption sometimes takes place quickly, and secondly, that the risks which I have mentioned are not immediate, nor, with the exception of secondary rupture, which is very rare, are they sudden. A delay of two or three weeks will do no harm; and if we counsel expectant treatment for that length of time we may at the end of it find the symptoms gone and the pelvic swelling very much smaller. No better result than this can be attained by operation. I think therefore that a pelvic haematocoele is best treated in the first instance by expectant treatment, that is, rest in bed, gentle laxatives (for when there is pressure on the rectum scybala will give trouble), suitable diet, and careful watching. If at the end of a fortnight it is found that the swelling is no smaller, or has increased in size, then the question of operation must be considered. If although there is not distinct shrinking of the swelling yet the patient is free from pain and fever, and is in such circumstances that the active discharge of social duties is not required from her, expectant treatment may be continued longer. But if, in addition to the fact that the lump is no smaller, the patient has pain or fever, then recovery may be hastened and made more sure by operation.

If operation is decided upon, the question arises, What operation? There are two routes by which the collection of blood may be reached, the abdominal and the vaginal. If the uterus is much displaced, that is proof that the effusion is under pressure—that it is in a cavity bounded by adhesions, and shut off from the general peritoneal cavity. The blood, therefore, can be let out by an incision from the vagina without opening the general peritoneal cavity. This is not an unimportant advantage, for if the effused blood has been invaded by microbes, its introduction to the peritoneal cavity may be disastrous. The only objection that I can see to operating by the vagina is that the diseased parts cannot be well seen by this route. But it is in most cases not necessary that they should be seen; what is wanted is to remove the blood and the tubal mole. When this is done through an abdominal incision the operator is in most cases guided by touch. The operator should make a free incision through Douglas's pouch. He

can scoop out the blood clot through such an opening as easily as from the abdomen. By bimanual manipulation he can perceive which tube is diseased. If a tubal mole is lying in or near the fimbriated end of the tube he can detach it and remove it as easily by the one route as the other. If as is the case with most haematocoeles, the ovum is dead and the pregnancy has ceased to advance, there will be no bleeding of amount needing to be stopped. If the cavity is afterwards kept clean, recovery will be rapid.

There are two contingencies in which this method of treatment may be unsatisfactory. One is that of a case in which the pregnancy has not come to an end, but in spite of the formation of a haematocoele the fetus is living, and the placental circulation active. In that case there will be haemorrhage, which may be difficult to stop. If so, the operator will be better able to deal with the bleeding from above than from below. Should the operator think it necessary for this reason to open the abdomen, the fact that the vagina has been opened first does not add any difficulty or danger to the abdominal incision.

The other contingency is that the diagnosis may have been wrong, or the case a complicated one; so that after emptying the fluid contents of the sac it is found that the pelvic swelling is not entirely removed; that there is not merely a collection of fluid, blood, serum, or pus in the pouch of Douglas, but something else as well. In that case, if the operator is not certain of what he is dealing with, it may be better to open the abdomen, but in this event the patient's prospect of recovery will be none the worse because a vaginal incision had previously been made.

The disadvantages of attacking an encysted intraperitoneal haematocoele in the first instance by the abdomen are that the exposure of the bowels to chilling and contact causes greater shock. There is the risk to which I have already referred of infection of the peritoneum if the effused blood should have been invaded by microbes, and there is the remote possibility of the abdominal scar becoming the site of a ventral hernia. In short, therefore, I think the best treatment of a pelvic haematocoele is first to give it a chance of being absorbed, and if it is not clear that this is taking place to open it by a vaginal incision.

The case may have to be treated after the formation of a haematocoele, while the pregnancy is still going on, but before the fetal heart is audible; or, which is rare, the pregnancy may have reached the fourth month and the fetus be (from its point of view) growing normally without the formation of a haematocoele. At this stage the diagnosis is so difficult that I think I do not go too far if I say that ascertainment of the exact state of affairs is not possible. If the swelling, which at its formation was thought to be a pelvic haematocoele, goes on slowly and steadily increasing in size, the conclusion may be drawn that there is a living and growing pregnancy; but as fetal heart sounds cannot be heard, fetal parts distinguished or fetal movements felt, there can be no certainty. There may be certainty as to this, that if there is a growing swelling in the pelvis beside the uterus, the sooner it is removed the better. If the swelling is so large that its upper pole cannot be reached by the vagina it had better be attacked from the abdomen.

Consider now the case at a later stage. The patient has entered the second half of pregnancy, and the fetal heart is audible. Supposing the case is let alone, what will happen? The pregnancy will in all probability go to, or nearly to, full term. Then spurious labour will come on, and the child will die. Any untoward event in the second half of ectopic pregnancy is a very rare thing. The placenta has by this time spread beyond the tube. The child is developing either in the peritoneal cavity or in the cellular tissue underneath the peritoneum. If in the peritoneum, there is no reason why the placenta should get prematurely detached. The child is enclosed in its amnion, and does not irritate or infect the peritoneum. If under the peritoneum, the peritoneum gradually rises as the child grows; it is a strong, tough membrane that has no proclivity to rupture.

When full term has been reached, spurious labour, although it may be disagreeable, is not in any way dangerous. After spurious labour has occurred the child dies, and then the liquor amnii is usually absorbed, which makes the abdominal swelling smaller. Then after a time, usually about six months, suppuration begins. It may begin sooner, within six weeks, or it may be postponed later, for a year or two years, or it may never happen, and the patient may live to old age, with no other trouble than a lump of some size in her abdomen. But this is exceptional; suppuration is the

rule. The point on which I lay stress is this—that, *from the end of the first half of an ectopic pregnancy until the beginning of suppuration the patient is practically in no danger*; fatal events during this period are excessively rare. There is therefore no urgent necessity for operation. The only reason that I can discover for urging immediate operation at this stage of the case is that ectopic pregnancy is an illness, and the earlier operation is done the shorter the illness.

The removal of an ectopic pregnancy during its second half while the child is alive is a very dangerous operation. Champneys, in 1887, collected the cases published up to that date and found that the mortality among them was 88.8 per cent. Whitridge Williams, in his excellent textbook on midwifery, gives the mortality as 31 per cent., and as operative technique has advanced since 1887, probably the mortality of cases operated on now would not reach the appalling figure of the cases before 1887. But a mortality of 31 per cent. is far too high to permit us to advise an operation for a patient who is in no immediate danger.

It may be said that, although the mortality has been high, yet surgical methods have been and will be so improved that a great reduction in this mortality may be taken for granted in the future; that the risk should not be greater than that of ovariectomy, hysterectomy, or Caesarean section. Is this likely? I think not, for there are special risks attending this operation which are not present in any other abdominal section. These risks arise from the presence of the placenta. While an extrauterine child is living, it is not possible, with our present means of diagnosis, to ascertain the site of the placenta, any more than we can determine the implantation of an intrauterine placenta. The placenta may be implanted on the anterior abdominal wall, and if so, the first incision will open placental sinuses, and be followed by great bleeding. In Caesarean section, if the placenta is implanted on the anterior uterine wall, the bleeding when it is divided is alarming. But after the child has been extracted it is quickly stopped, because the uterus contracts. In ectopic pregnancy the placental site has no contractile power, and there is no natural mechanism to stop bleeding when the placenta is divided or separated. If the placenta is not implanted on the anterior abdominal wall, the operator cannot see where it is until he has extracted the child; and it has often happened that in extracting the child the placenta has been accidentally detached or wounded, with terrible haemorrhage as the result. There have also been cases in which ill-informed or rash surgeons have tried to remove the placenta. However brought about, the bleeding from detachment or wounding of the placenta of an ectopic pregnancy is great, and the resources of the surgeon for stopping it have often proved inadequate; so that death from haemorrhage has often been the result of these operations. Hence it has been accepted as a cardinal rule not to attempt to remove the placenta, but to keep open a way for its subsequent separation and expulsion. A patient with an open wound leading into an open cavity from which a mass of dead tissue has to be slowly separated and cast off is not an ideal convalescent. The patient is not safe without the most careful attention to antiseptics for a long period. And even if this is maintained, the wound may close before the placenta has been separated, and the retained placenta may kill the patient. Besides these dangers, there are all the dangers that attend any abdominal section. Hence I do not believe that delivery of a living child in ectopic pregnancy by abdominal section will ever be accomplished with a mortality as low as that which attends most abdominal operations. I think if the 31 per cent. given by Whitridge Williams errs, it is by understating rather than overstating the mortality. And when we remember that at the time when this operation is so dangerous, the patient herself is, excepting for rare accidents, in no danger, I think it ought not to be performed. We ought to think of the mother's life, let spurious labour come and go, and the child die.

If we follow this course, sooner or later the circulation through the placenta will stop, and its vessels will become thrombosed. If the operation is postponed until this process is complete, the operator will then find the placenta resembling a piece of hepatized lung, and will be able to peel it off with only trifling bleeding.

Unfortunately we know not how soon after the death of the child the placenta becomes thrombosed. It is certain that the placental circulation may go on for many weeks after the child is dead. If we had some means of ascertaining whether the placenta had become thrombosed or not, I think there would hardly be two opinions as to the proper time to operate.

There being this uncertainty, I think the best rule for practice is to keep in mind the broad fact that, until suppuration has begun, the patient is in no danger. The mere presence of a lump in the abdomen is no justification for an operation with a mortality of 31 per cent. But when suppuration has begun, indicated by the presence of fever, then we know the patient is at the beginning of a long and exhausting illness which may prove fatal, and we ought not to let this go on. As soon as symptoms of suppuration begin the child should be removed by operation, and in most such cases the placenta will be found thrombosed, and can be peeled off and removed with only trifling bleeding. The results of operation under such conditions ought to be as good as those of abdominal sections generally.

What should the operation be? When we are dealing with a large abdominal tumour of uncertain relations clearly abdominal section is indicated. But there are certain cases in which I think it better performed by the vagina. These are the cases in which the child develops in the broad ligament, lifting up its posterior peritoneal fold and displacing the uterus forward. In such a case the lower pole of the fetus bulges down between the rectum and vagina, and it has been found possible to feel through the vagina the cranial sutures and fontanelles. In such a case I think it will be best to open the fetus-containing sac by an incision through the vagina. The risk of infection of the peritoneum will then be avoided, and the cavity can be well drained from the vagina. The placenta need not be removed. The cavity can be kept clean by frequent irrigation, and the placenta will be broken down and discharged in shreds within about ten or fourteen days. I do not advise vaginal operation unless it is certain that the tissues between the vaginal canal and the fetus are thin, and that one end of the fetal ovoid lies downward; still less if there is the slightest doubt as to the diagnosis.

REFERENCE.

¹ *Journal of Obst. and Gyn. of the British Empire*, September, 1903.

ABDOMINAL OPERATIONS DURING PREGNANCY.

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EVERY medical man, whether engaged in general practice or in doing abdominal surgery, has probably met with instances of serious disease of one or other of the abdominal organs complicating pregnancy. If, however, I may judge from my own experience—first, of some years of general practice, and subsequently of ten years of abdominal surgery—such cases as urgently require operative interference are less common than one might *a priori* have expected. Probably the most frequent pathological condition complicating pregnancy—or, perhaps, more correctly speaking, complicated by pregnancy—is either an ovarian cyst or a fibromyoma of the uterus. Most surgeons who do much abdominal work have been at some time or another called upon to remove such a tumour or tumours which would otherwise obstruct labour. In this country (Australia) one occasionally meets with instances of a hydatid cyst occupying the pelvis, and calling for treatment in the same way. I have seen cases of renal calculus which were discovered during pregnancy, and the question had to be decided as to whether removal should be undertaken immediately or delayed until after the confinement. In one instance I have been called upon to deal with a carcinomatous growth of the gut causing obstructive symptoms. We may roughly classify all the instances above referred to as mechanical conditions, and each case must be judged upon its merits. There is, however, an entirely different class of case, which fortunately is not commonly encountered during pregnancy. I mean cases in which an acute infective process attacks certain organs, such as the gall bladder and bile ducts, the vermiform appendix, and, more rarely still, the Fallopian tube.

Under such conditions, that is, an acute infective cholecystitis, an acute appendicitis, or an acute infective Salpingitis, are we to temporize, and trust that the acute symptoms will subside, and permit the pregnancy to terminate normally—or should we deal at once with the pathological condition, removing its cause by operation, and leave the physiological condition to go on to its natural ending? Comparatively recently I have, in my private practice, had to deal with a case of acute gangrenous appendicitis in a

woman six months pregnant, and also an instance (the only one I have ever seen of the kind) of double pyosalpinx in a woman three months pregnant. A short account of each case, together with an instance of double ovarian dermoid cyst removed during pregnancy, and also presenting unusual features, is given. Not so many years ago, it was generally held that surgical interference with pregnant women was to be avoided under almost all circumstances. Even now one meets instances in which pregnant women who are suffering agonies from neuralgia, induced by carious teeth, are solemnly warned that the operation of extraction or “stopping” will probably induce premature labour, and they are left to go on with prolonged pain and discomfort, which might easily be removed without any untoward result. It is only of late years that the safety and generally good results of major abdominal operations in pregnant women have been demonstrated. I do not mean that we should choose to operate during pregnancy if it can with safety be avoided, but in such instances as the acute infective conditions to which reference has been made, and which in themselves threaten life, there can, I think, be no doubt of the advisability of operative interference. This fact was particularly brought home to me by the case of gangrenous appendicitis recorded below. This patient had been seen by a surgeon and a physician, both of large experience, and for whose opinion I have the greatest respect, but because the second and third attacks of appendicitis occurred after the commencement of pregnancy these gentlemen negated operative interference and advised waiting. This was, I believe, a decided error in judgement; the verdict should have been reversed. In that case the patient would have been saved great risk to life, for, although she did recover perfectly and the pregnancy was in no way interfered with, the risk which both she and her child ran was infinitely greater than it would have been had the operation been done in the “quiet interval”—after either the second or third attack.

With regard to the case of double pyosalpinx, we had no choice. The pregnancy, however, was in no way interfered with, and it is now approaching its termination, apparently normally; the fetal heart sounds can be heard, and the movements felt.

The conclusion, therefore, to which I think we must come, is that all cases of acute infective disease during pregnancy, involving either the appendix vermiformis, the Fallopian tubes, or the gall-bladder and bile ducts, should be treated as though the pregnancy did not exist. By so doing, I believe we shall be acting in the best interests of our patients, and also of their unborn children. I do not propose to refer at length to those cases which I previously spoke of as mechanical complications during pregnancy. It has been abundantly demonstrated that the operations both of ovariectomy and myomectomy can, if necessary, be safely performed on pregnant women and without interfering with the pregnancy.

CASE I.

Mrs. M., aged 30 years; four children at full time; no miscarriages.

The patient was seen in consultation with Dr. McMaster of Penrith, near Sydney, N.S.W., on December 26th, 1901. She was then suffering from an acute attack of appendicitis, and had been ill for five days. She had severe abdominal pain, chiefly in the right iliac region, and marked “guard tension” of abdominal muscles on the right side of the abdomen. The uterus was enlarged to about the size of a six-months pregnancy; the bowels had been relieved that day as the result of an aperient and enema. Vaginal examination confirmed the fact of the six-months pregnancy, and showed the presence of an inflammatory mass high up in the right posterior quarter of the pelvis, continuous with a tender swelling in the right iliac region. Temperature varied between 99° and 103° Fahrenheit. Uterus quiet, no normal contractions.

History.—The patient had had three previous attacks of undoubted appendicitis. The first, two months before the present pregnancy, namely, eight months ago; this was a slight attack; then another more severe attack four months after the first attack, and a third two months after the second, namely, when she was about four months pregnant. During the interval between the second and third attacks the patient had consulted a surgeon and a physician in Sydney, and had been advised, because she was pregnant, that no operation should be undertaken.

On December 29th, 1901, the patient came to Sydney, and was admitted to a private hospital. She stood the journey of 40 miles in the train very well.

Operation.—December 30th, 1901. Under ether anaesthesia the usual oblique incision in the right iliac region was made. The deeper layers of the abdominal wall were oedematous (in this instance because of the altered physical conditions due to the pregnancy, the incision was not made at the outer border of the rectus sheath, but through the oblique muscles, the fibres of which had to be divided, as simple separation did