dition existed, and the absence of any characteristic signs of invagination, together with the history and appearance of the child, led me to this conclusion, though Dr. Renshaw's diagnosis proved to be the correct one. As the child's health was getting worse, I decided to explore the abdomen with a view of finding out which of the two conditions really existed, and whether it was possible to relieve the obstruction by removal of the gland, if that was the cause of the mischief, or by dealing with the intussusception if such it should prove to be. The condition found was puzzling, but I am inclined to explain it as probably primarily an appendicitis, for the appendix was thickened, its lumen obliterated, and it was firmly bound down by old adhesions as well as coated in part with more recent lymph.

The root of the appendix, by its hardness and fixity, probably became the starting point of the intussusception, just as a polypus or a shrunken segment of bowel may be; or, as in a case of Dr. Ashby's upon which I operated, just as a tuberculous gland may press into the wall of the gut, and cause an invagination. The slightness of the symptoms was no doubt due to the fact that the lumen of the gut was little if at all interfered with. The extreme mobility of the tumour was due to the length of the mesocæcum, possibly drawn out in the long course of the case. The question of resection of the cæcum in whole or in part was considered, but it was not thought advisable because the child was too feeble, and because exploration of the bowel from within showed that the gut was patent. Possibly the method of reduction adopted in this instance might prove useful even in cases where the invagination had gone further.

It is too soon yet to say whether the child will succumb to tuberculosis, or whether any future trouble will arise in the cæcum, but the removal of the appendix and the partial reduction of the invagination, as well as the great improvement in condition, make me hopeful that its troubles from that cause are at an end.

This particular form of intussusception must be exceedingly rare. I have not met with nor found a record of a similar case. We are indebted to Mr. Izard for notes of the case after its admission to hospital.

FOUR CASES OF RUPTURED TUBAL PREGNANCY.

By T. ARTHUR HELME, M.D., M.R.C.P., F.R.S.E.,

Honorary Assistant Surgeon to the Clinical Hospital for Women and Children, Manchester.

THE lodgment and development of a fertilised ovum within the lumen of a Fallopian tube is one of the most important abnormalities of pregnancy, and the almost inevitable rupture of the distended tube from growth and expansion of the ovum leads to one of the most anxious conditions with which a medical man is called upon to deal. The four cases, whose histories are here recorded, are examples of the latter condition—that is, rupture of the tube—in three of which surgical interference was called for:

CASE I.—The first case was that of the wife of a schoolmaster, aged 33, residing in a village some sixty miles from Manchester. She was the mother of three children, the youngest of whom was $\frac{1}{2}$ years old at the time when the events to be described took place. She had for some months worn a Hodge pessary on account of uterine prolapse; had always been regular until the month of May. Menstruation was due on May 21st, but did not appear; she had morning sickness and peculiar fancies about her food, just as in previous pregnancies, and therefore concluded that she was again pregnant. On June 14th—that is, about seven weeks from her last menstruation, there was some hæmorrhage from the vagina. On June 20th she sent for her doctor, Dr. Douglas Bone, of Hornby, on account of severe cramp-like pains in the lower part of the abdomen; she also complained of a bearing-down sensation, as if something wanted to pass by the bowel, although the bowels had freely moved that morning. On bimanual examination, Dr. Bone found a small lump above the left lateral fornix; the uterus was enlarged and the cervix patulous and softened. As the patient was in great pain, Dr. Bone returned to his surgery, some miles distant, for medicine; he was, however, followed by a messenger and hastily summoned back to the patient, who had suddenly become collapsed and fainted. On his return he found the patient blanched, with a pulse of 160, and the abdomen distended. The tumour, which had been felt an hour or two previously in the left half of the pelvis, had disappeared. The patient was in a state of collapse and remained so during the night, requiring repeated hypodermic administrations of digitalin and strychnine. Vomiting was troublesome, and no nourishment could be retained. This state persisted for twenty-four hours, and then the pulse improved a

little. At this time I received a telegram to go over prepared to operate. This I did, and found the condition much as above described. The patient's face was blanched, lips almost white, pulse 120, abdomen much distended, and dull to percussion in the lower half. *Per vaginam* no pelvic tumour was to be felt, but an indefinite sensation of fluid in the pouch of Douglas. On opening the abdomen I found the peritoneal cavity full of blood and blood clot. The exact information received from the doctor led me at once to examine the appendages on the left side, and on so doing I found the left tube enlarged and distended, with a rupture into which I could pass my finger about one-third of an inch distant from the uterus. The tube was secured by ligature and excised, together with its ovary, and as much blood as possible cleared out from the peritoneal cavity at the same time. No fœtus was discovered, but the tube contained evident placental tissue. The patient made an uninterrupted recovery, and in March of the following year Dr. Bone wrote to me, "Mrs. N. is in the best of health; has been skating all winter."

This was a case of primary intraperitoneal rupture, at the seventh or eighth week, of a tubal pregnancy, where the ovum was implanted in the inner third of the tube, this being the usual ending of such a condition. Owing to the anatomical disposition of the layers of the peritoneum of the broad ligament at this point, it is unusual for anything but a rupture directly into the peritoneal cavity to occur, probably always before the twelfth week.

CASE II.—In this instance the patient was a young lady, aged 22, who had previously enjoyed perfect health. She was under the care of Dr. Ritchie, of Manchester, who carefully observed the case from the beginning. The patient married in July, and menstruated regularly in July and August, but not in September. On October 1st, that is, one month and ten days after the last menstruation, she fell off a chair on which she had been standing, and immediately thereafter felt a pain in the left side of her abdomen, and vaginal hæmorrhage came on. There was no fainting, no sickness, no shock, nor any sign of internal hæmorrhage (when seen by her doctor). The pain and bleeding continued at intervals for 13 days, when the pains became more severe and something was passed *per vaginam* while the patient was at stool. After that time the pains and hæmorrhage recurred more frequently and more severely. On examination (October 22nd) Dr. Ritchie found a mass in the left half of the pelvis, and recognising that probably he had to do with a tubal pregnancy, asked me to see the case. On October 23rd I found the following condition: The uterus, about normal in size, was retroverted; the cervix was slightly softened; there was marked pulsation in the left lateral fornix, through which could be felt a smooth, firm, somewhat elastic body, distinct from the uterus, movable and tender. The greater portion of this mass lay to the left of the uterus, but its inner portion projected inwards to the middle line in front of the uterus—that is, in the utero-vesical pouch. I again examined the patient before performing abdominal section on October 26th, and found the size of the mass had in the meantime somewhat (slightly) increased. On opening the abdomen the parietal peritoneum of the anterior abdominal wall was found to be discoloured by blood pigment, and escaped blood was found free in the general peritoneal cavity. On passing the fingers downwards along the omentum, to which pieces of blood clot were adhering, its extremity was found to be adherent slightly to the upper surface of a mass occupying the left half of the pelvis, and coming forwards as far as the middle of the utero-vesical pouch in front of the uterus, which was retroverted. This mass was made up of the enlarged and distended tube surrounded by blood clot; on the posterior and upper portion of the tube, about its middle, was a large rupture which was occupied by a firm body, afterwards found to be an apoplectic ovum. This ovum had somewhat of the shape of a dumb-bell, and at the time of operation was halfway protruded through the rupture, the smoother end being still retained and attached to the interior of the Fallopian tube, while the other end projected into the peritoneal cavity, and was adherent to the sigmoid flexure of the colon. Ligatures were applied, and the tube with its ovary and part of the broad ligament were removed. Microscopic examination of the dumb-bell-shaped body showed the presence of chorionic villi, which proved its fœtal origin. The patient made an uninterrupted recovery, and Dr. Ritchie informs me that he has recently delivered the patient of a full-time healthy child, the labour being normal in every way.

This case, then, was a primary intraperitoneal rupture, probably before the eighth week of pregnancy, the ovum being implanted in the middle third of the tube; but the clinical history is essentially different from that of Case I, and this is accounted for by the different and very unusual pathological condition found—namely, rupture of the tube with blocking of the rupture by the partially detached ovum.

As to the diagnosis of these two conditions, in Case I the history was decisive: first, there were evidences of pregnancy—namely, amenorrhœa and morning sickness; secondly, a tumour was felt in the left pelvis, these facts giving a presumptive diagnosis of tubal pregnancy; later, there were signs of severe internal hæmorrhage, with disappearance of the tubal mass, pointing to intraperitoneal rupture.

In Case II there was again no difficulty in recognising that tubal pregnancy existed; the difficulty lay in deciding whether the pregnant tube was still unruptured, or whether tubal rupture or tubal abortion had taken place. The chief points against there being a still unruptured tube were (1) the size of the mass, this being too large for the probable length of time pregnancy had existed; and (2) the position of the mass. The history was suggestive of tubal abortion—that is, the escape of the ovum into the peritoneal cavity through

the open fimbriated extremity as distinct from tubal rupture.

In tubal pregnancy we may have escape of the ovum either into the broad ligament (primary extraperitoneal rupture) or into the peritoneal cavity. Neglecting the former at present, we find four varieties of the latter described when the ovum perishes:

1. *Primary intraperitoneal rupture*, in which there is free hæmorrhage into the general peritoneal cavity, the clinical signs being pronounced shock and acute anæmia, generally so severe as to be rapidly fatal unless the bleeding points are secured. In these cases often no pelvic tumour is felt. Case I belongs to this class.

2. *Intraperitoneal Rupture with Limitation of Bleeding by the Formation of a False Sac*.—Hæmorrhage in this case goes on slowly, allowing time for adhesions to form between intestine and omentum, which limit the amount of bleeding, so that a mass is formed which is felt *per vaginam*. Shock and anæmia are not so severe as in No. 1.

3. *Complete tubal abortion*, very similar to No. 1, but with the signs of acute internal hæmorrhage less marked though severe. Shock may and generally does occur.

4. *Incomplete tubal abortion*, where we get oft-recurring abdominal pain with signs of internal hæmorrhage, often severe, and a gradually-increasing hæmatocele.

But none of these groups embraces the condition found in the second of my cases, so that we must add a fifth group in which, while the pathological conditions are entirely different, the symptoms and signs vary little from those of the fourth group:—

5. *Intraperitoneal rupture of tube and plugging of the rupture by partially-detached ovum with limitation of bleeding*, the clinical features in my case being (1) tubal pain; (2) vaginal hæmorrhage; (3) absence of shock; (4) expulsion of uterine decidua (?); (5) recurrent tubal labour pains and slight internal hæmorrhages; (6) increasing size of hæmatocele; (7) localised peritonitis; the hæmorrhage is not, however, shut off from the general peritoneal cavity.

As to the question of causation, it is evident that in Case II there is no apparent cause, the tubal pregnancy occurring in a young healthy newly-married woman, who had given no signs of pelvic mischief. In Case I Dr. Bone pointed out that the prolapse of the uterus might, by elongating the tube, have diminished the lumen, and so hampered the movement of the fertilised ovum.

The next two cases are examples of extraperitoneal rupture:

CASE III. Mrs. S., aged 27, has one child, aged 3. When six weeks pregnant (there being morning sickness, amenorrhœa, and other signs just as in her previous pregnancy) patient lifted a dresser, and immediately felt an unusual and queer sensation in the lower part of the abdomen. Two days later severe pains in the abdomen occurred, and patient had repeated attacks of faintness, the pains being very severe. The doctor was called in, and in spite of treatment the pains continued. One month after the accident there was bleeding from the vagina, and the abdominal pains grew worse. Two weeks later patient felt a lump in the right side, and as the pains increased in severity she was seen by one of my colleagues, who admitted her into hospital. On bimanual examination a firm mass the size of a fetal head was felt to the right of the uterus bulging downwards the right lateral fornix, and rising out of the pelvis above. The patient was kept under observation, and a week later the swelling had increased in size, extending now behind the uterus, and bulging the posterior fornix into the vagina, where fluctuation could be felt. I now saw the patient for the first time, and as it was evident that we had to deal with an intraligamentous rupture of a tubal pregnancy, in which the hæmorrhage was extending, operation was advised. The patient was observed for another week, during which time there was a further and rapid increase in the size of the tumour, which had now crossed the middle line into the left broad ligament, extending up into the left iliac fossa. The upper limit of the mass on the left side was almost on a level with the umbilicus. The patient's general condition was rapidly becoming serious, the temperature had assumed a hectic type with rapid pulse and severe pain, peritonitis being indicated, if not suppuration. It was decided to perform abdominal section, and the patient was placed under my care. On opening the abdomen the following condition was found: The uterus, enlarged and pushed upwards, lay mesially; the right tube was enlarged, its middle portion being greatly distended and riding upon the right broad ligament, between the layers of which was a fluctuating mass; continuous with this and lying immediately outside the peritoneum of the pouch of Douglas, which was lifted up by it, was a large mass of blood; towards the left (as on the right) this hæmatoma extended into the substance of the left broad ligament, the layers of which were widely separated by the blood which passed outwards (under the peritoneum) into the iliac fossa; the left tube and ovary were lying upon and in front of this mass, to the upper surface of which the omentum and intestines were adherent (that is, on the left side). Owing to the central position of the uterus the sac could not be stitched to the margins of the abdominal incision, which was therefore closed. The patient having been placed in the lithotomy position, a posterior colpotomy was performed, the posterior vaginal wall being incised at its

cervical reflexion, and the extraperitoneal hæmatoma opened by a wide incision: a very large quantity of blood and blood clot escaped, but no fetus was found. The opening was kept patent and the sac washed out daily, the patient making an uninterrupted recovery. The pathological condition was evidently produced as follows: A tubal pregnancy of the right side ruptured into the substance of the right broad ligament; at intervals there were recurrent hæmorrhages, the blood pushing its way along the loose connective tissue outside the peritoneum and above the vaginal roof, behind the cervix uteri, lifting up the peritoneum of Douglas's pouch and bulging down the vaginal roof, at the same time pushing the uterus upwards and forwards. As the hæmorrhage increased it extended into the left broad ligament, and came to form the huge hæmatoma, which passed on into the left iliac fossa, and eventually formed a mass reaching up nearly to the level of the umbilicus on the left side. By secondary peritonitis the omentum and intestines became adherent to the upper surface of the mass. This was not a primary rupture of the tube into the pouch of Douglas, with the formation of a false sac or capsule by peritonitic adhesion, a condition which is sometimes met with. The pouch of Douglas was readily seen and the hand passed into it, when I opened the peritoneal cavity from above, and the intestinal adhesions were limited to the left side. The right tube was quite free from adhesion, riding, as it were, on the top of its greatly swollen ligament, but distended and enlarged in its middle portion, where no doubt the pregnancy had been located. Six months later the pelvis felt almost normal except for a slight "thickening" of the right broad ligament. I examined the patient again a few weeks since, and it seemed almost extraordinary that the parts could have returned to a condition so nearly normal.

In contrast with the preceding three cases in which surgical treatment was necessary the next case is one in which medical treatment alone sufficed.

CASE IV.—Mrs. B., aged 39, multipara. This patient was seen in consultation in Bolton. There was the usual history of symptoms pointing to the existence of pregnancy, namely, delayed menstruation and morning sickness. A fortnight before I saw the patient she had experienced a severe pain in the abdomen, and had fainted in the street. After this she suffered from frequent micturition. Four days later she again fainted when on the chamber, and the doctor, on making a vaginal examination, found a swelling to the right of the uterus. Several days later she again had an attack of severe pain, and fainted; the pelvic swelling was found to be larger and the patient's condition became somewhat serious, her pulse being 120. The patient, however, rallied, and I was then called in, and made an examination under chloroform. The patient's general condition had improved, and at this time the pulse was fairly strong, regular, and beating at 90. On examination I found a swelling about the size of a fetal head occupying the position of the right broad ligament, and extending across the middle line behind the uterus, which was much enlarged, its fundus being pushed across to the left: the swelling had a firm doughy feeling. I carefully passed the sound, which went a distance of $\frac{1}{2}$ inches. The diagnosis was rupture of a tubal gestation between the layers of the right broad ligament. As the patient had recovered from the shock I advised that no operation should at that time be performed; that the patient should be kept at absolute rest and watched the vagina meanwhile being douched with antiseptics, so that we might proceed at once to perform colpotomy if hæmorrhage recurred and interference became necessary. Three days later a perfect decidua cast escaped from the uterus, which confirmed our diagnosis. The patient made a steady recovery, the mass of effused blood being completely absorbed in four or five weeks.

These two cases (III and IV) are examples of the extraperitoneal variety of rupture. Case IV illustrates the fact that the patient may recover from this condition without operative interference, a not by any means unusual ending. In such cases the indication is to watch the patient closely; if no further hæmorrhage occurs (as shown by absence of increase in the size of the hæmatoma) and no destructive changes take place, interference may be unnecessary, the hæmatoma gradually becoming absorbed in the course of a few weeks; but if, on the other hand, further hæmorrhages occur, as in Case III, or suppurative or peritonitic processes arise, the sac should be opened. Case III illustrates how satisfactorily this may be done *per vaginam*, this method giving the advantage of free drainage from the most dependent part.

RUPTURED INTERSTITIAL TUBAL PREGNANCY TREATED BY SUTURE OF THE FISSURE.

By PETER TYTLER, M.D. ABERD.,

Honorary Surgeon to the Ancoats Hospital, Manchester.

THOUGH cases of tubal pregnancy are frequently reported at medical societies and in medical journals, yet, so far as I have observed, no case where the tube was ruptured in the interstitial part of the uterus has been fully recorded.

F. D., aged 31, the mother of seven children, was admitted to Ancoats Hospital on May 13th, 1895, in a state of collapse from internal hæmorrhage. Her history previous to illness was that she had not menstruated for six weeks when she was seized on May 3rd with a severe pain at the bottom of the