Ectopic Gestation in Chinese Women.

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INTRODUCTION.

IN spite of the experience of one who recently wrote that he had not seen a case of ectopic gestation in his 21 years' residence in China, the condition is by no means rare, probably no rarer than in Western countries.

That we do not see these cases oftener may be attributed to two reasons. One is the patient's prejudice against foreign methods and foreign doctors; the other is that the cases are not diagnosed. In Peking, where of recent years the former objection is passing away, we have not a few cases coming to our clinics.

The Chinese cases collected during the study of this subject number 54. They are derived from the following sources:—

Peking Union Medical College Hospital	13
Sleeper Davis Hospital, Peking	6
Tainan Hospital, Formosa	11
Women's Hospital, Kai-feng-fu	3
Yung-chun Hospital, Fukien	3
German Hospital, Peking	1
British Charitable Hospital, Peking	1
Private practitioners	12
Reported in *China Medical Journal*	4
	54

These cases come from the following provinces: Anhwei, Chihli, Fukien, Honan, Kiangsu, Kwangtung, Shantung, Szechuan, Formosa (Hospital for Chinese). Details of a few of the most interesting of these cases will be found in the appendix.

HISTORY.

It will not be out of place, in connexion with this subject of "Ectopic Gestation among Chinese," to mention that the first case recorded in the history of medical literature was that described

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by Albucasis, an Arabian physician living in Spain about the middle of the 11th century. His case was that of an advanced extrauterine gestation in which the bones of the child were extruded from an aperture near the umbilicus.

In China, owing to the conservatism of the people and the lack of proper hospital facilities, reports of ectopic gestation have been few in number. I can only find four reports of this condition in the medical literature in English published in China. See Maxwell,[2] Reifsnyder,[4] Robertson,[5] Vickers.[6]

The occurrence of ectopic gestation in Chinese women was also mentioned in some of the Hong Kong Government Reports, and within the last year Gibson[1] has published an account of some cases occurring in Chinese women in Hong Kong.

Frequency.

In China, owing to the lack of a Bureau of Vital Statistics, and also to the fact that so many confinements take place at home without proper medical attendance, it is impossible at the present time to give any reliable statistics comparing extrauterine with intrauterine pregnancy. It is interesting, however, to find that in the Peking Union Medical College there have been no fewer than 13 cases in a little over two years.

Age.

Our series of cases ranged from 24 to 39 years of age, and 72 per cent. of them were 30 years or over. In view of the fact that Chinese women as a rule marry young, it seems that the majority of these cases occur within the second decade of their married life. Several cases gave a clear history of a prolonged period of sterility prior to the ectopic gestation.

Varieties.

The relative frequency of the various forms of ectopic pregnancy is somewhat difficult to determine. The analysis of our cases, based upon the orignal point of implantation of the fertilized ovum is as follows :—

Ampullary	15
Isthmial	8
Interstitial or cornual	1
Not obtainable	30

But the majority of these 30 undoubtedly started as ampullar or isthmial pregnancies.

The above table shows that the cornual variety is undoubtedly the rarest, and the ampullar pregnancy is more common than the isthmial.

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There has not yet been a proved case of ovarian pregnancy reported from China.

The following table gives the relative frequency of the affected tubes:—

Right	18
Left	12
Both	1
Not known	23

ÆTIOLOGY.

What are the causes of extrauterine pregnancy? Speculation on the subject has gathered an immense mass of literature, most of it comparatively worthless, and even now it cannot be said that the question is a settled one. Most of us will agree that the cause must lie in some interference with the passage of the ovum from the fimbriated extremity of the Fallopian tube to the uterine cavity. I am strongly of the opinion that gonorrhœa plays a most important part as a predisposing factor. By getting rid of this infection, or diminishing it, the cases of ectopic gestation will automatically decrease. At some future date when western methods of treatment are adopted throughout China we may find, on comparing the areas where venereal disease is common with those where its ravages are slight, that the latter will have the smallest number of such cases. But obstruction due to bands or adhesions also plays its part (see Appendix, Case 9).

Every specimen which has come into my hands, including that of every case that was operated upon in the Peking Union Medical College, was thoroughly examined and microscopic sections made. Several cases showed definite salpingitis of the opposite Fallopian tube. Adhesions around the affected tubes were quite common. Nearly every section examined microscopically showed definite inflammatory reaction in the tubal wall, and also changes within the tubal lumen, such as hypertrophy and adhesion of the tubal folds. False diverticula were occasionally present. The majority of the patients gave a history of gonorrhœal infection. A great deal of work has yet to be done on the subject. The following note will explain what I mean.

In one of my cases it was noted at the operation that the left Fallopian tube was apparently closed and the condition was deemed to be due to *old* salpingitis. About nine months later she was examined by Rubin's test to determine the question of the patency of this tube. Oxygen was found to pass freely under low pressure into the abdominal cavity, proving that the tube had again recovered and these adhesions had disappeared.

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Fig. 1. Pregnancy in Fallopian tube, unruptured. Case 1.

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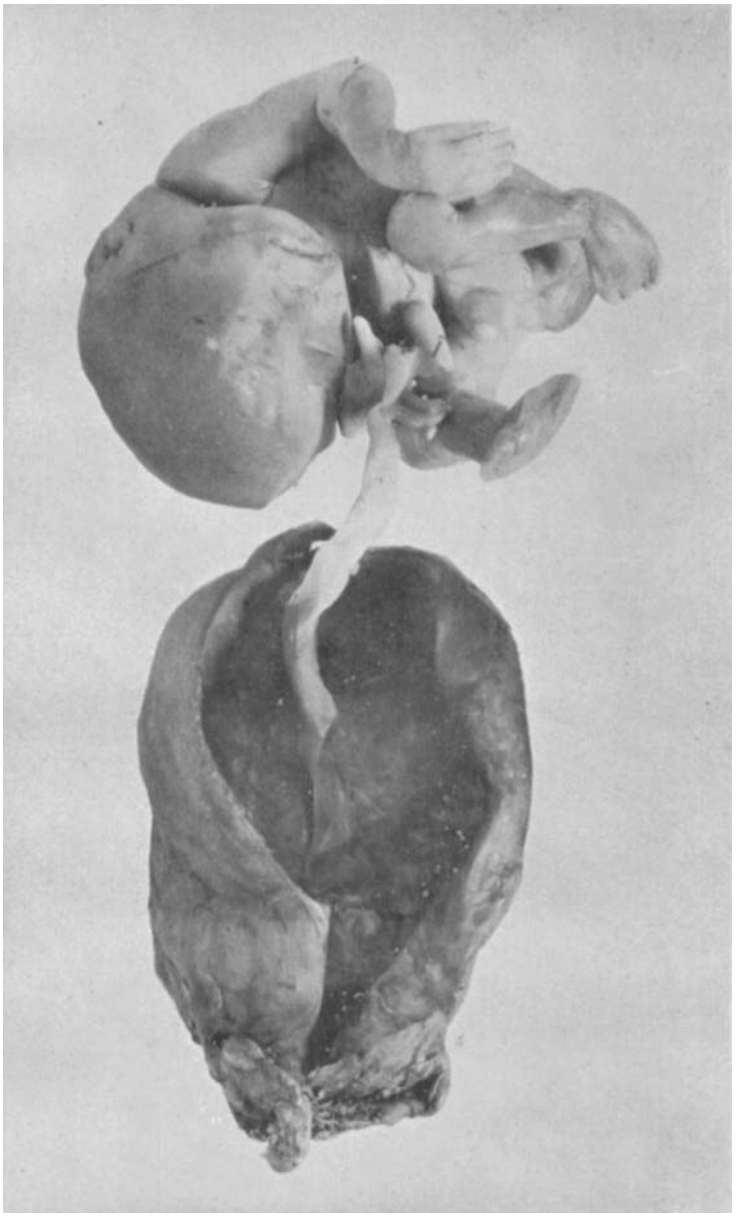


Fig. 2. Pregnancy in unruptured Fallopian tube, laid fully open.

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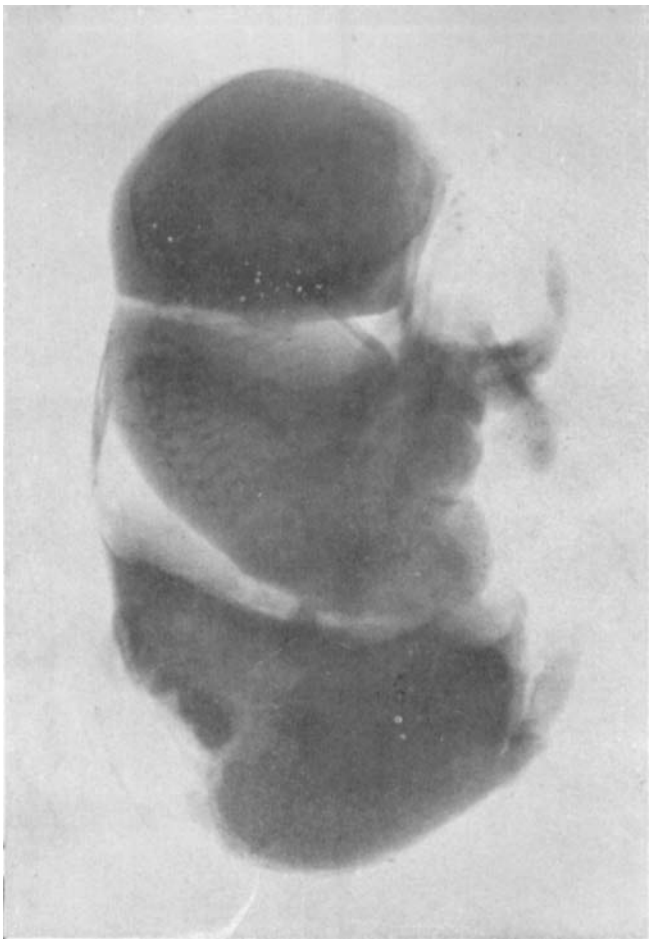


Fig. 3. X-ray of Case 1. Fœtus *in situ*.



Fig. 4. Unruptured tubal mole.

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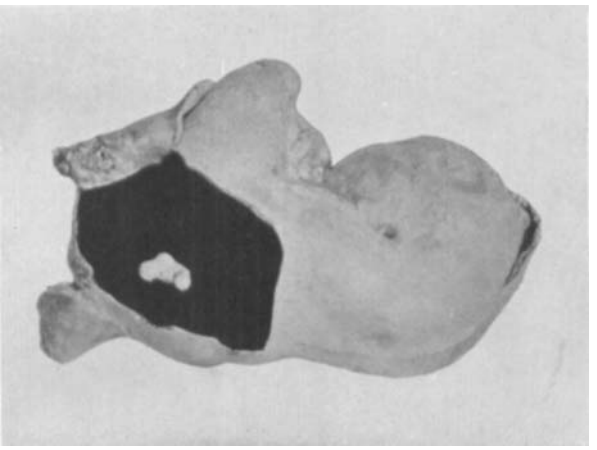


Fig. 5. Specimen laid open to show embryo.

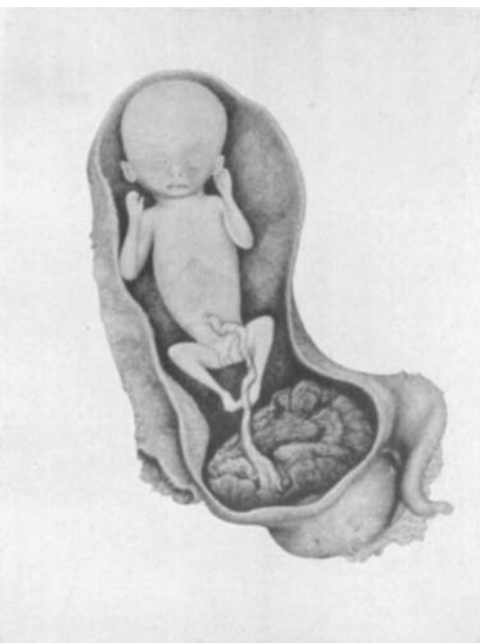


Fig. 6. Rupture into broad ligament. Case 3.

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Fig. 7. Fœtus and placenta after removal.

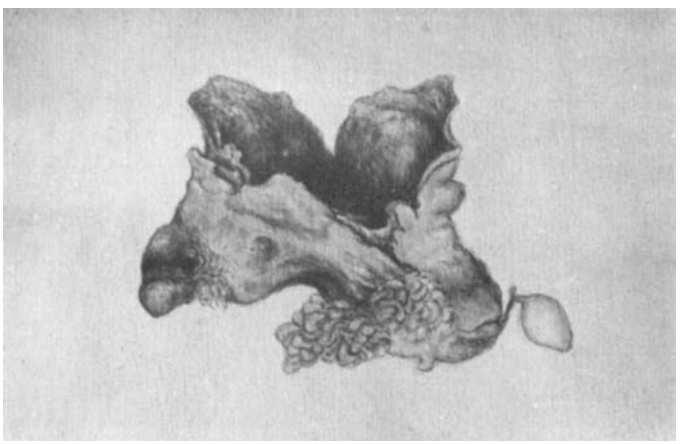


Fig. 8. Rupture of Fallopian tube at ampulla.

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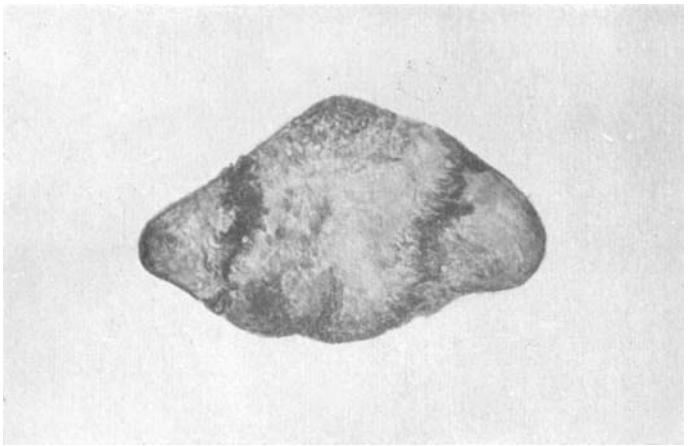


Fig. 9. Ovum unopened.

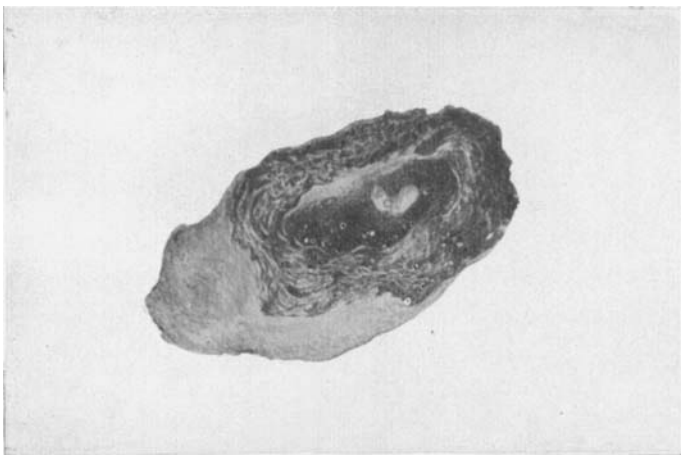


Fig. 10. Ovum opened.

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Terminations.

The following terminations of tubal pregnancies have been noticed :—

Tubal Mole.

Two specimens in my series show that gross evidence of pregnancy has disappeared, leaving the distended tube filled with organized clot. Microscopic sections revealed chorionic villi in the tubal wall. The specimen of Case 2 shows the fœtus still intact, and the tube greatly distended, but not ruptured. (Figs. 4 and 5.)

A tubal mole is often expelled from the tube, either by a process of tubal abortion, or through a rent in the tubal wall. (Figs. 8, 9 and 10.) Rarely it may become a calcified mass as in a case reported by Maxwell.[3]

Tubal Abortion.

Case 4 in the appendix illustrates complete tubal abortion, which as a rule is common in ampullary gestation. In four cases out of eight abortion took place after the eighth week.

Tubal Rupture.

(*a*) *Intraperitoneal.* In one case the whole ovum, containing a small embryo and surrounded by blood-clot, escaped through the rent into the peritoneal cavity. (Figs. 8, 9 and 10.)

(*b*) *Intraligamentous.* In our series of 54 cases there are at least five such lesions. More careful investigations may find this to be not so rare after all. Case 3 shows where the rupture originally took place between the broad ligament with the placental attachment partly on the tube and partly upon the pelvic connective-tissue, but the amnion escaped unruptured, and pregnancy went on to three and a half months before surgical interference took place. The operation was not easy, and there was some difficulty in removing the whole of the placenta which was firmly adherent to the pelvic cellular tisues. (Fig. 6.) This variety of rupture is rarely accompanied by severe hæmorrhage into the peritoneal cavity.

In considering the relative frequency between the two terminations of tubal abortion and tubal rupture accurate estimation cannot be made from such a small number of cases. The figures are :—

Number of cases	54
Tubal abortions	10
Tubal ruptures	22
Other terminations or accurate details not known ...	22

Of these 22, six were cases which went to term and in which the fœtus was dead.

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There is one interesting case in my series, however, which at first partook of the nature of an abortion, and later proceeded to secondary rupture. Such cases, if seen and treated early, will be listed as tubal abortions, whereas in the case quoted, the patient refused operation till the last moment, time was given for secondary rupture to take place, and this case is listed only as tubal rupture.

The Growth and Development of the Fœtus while still Confined within the Fallopian Tube.

This was in a patient from Canton with a very indefinite history, but on opening the abdomen a large mass found in the left iliac fossa, fairly firmly adherent to the uterus on the right, and to the parietal peritoneum and the broad ligament on the left, and particularly to the posterior wall of the pouch of Douglas behind. The right tube and ovary were normal, and there was no evidence of previous hæmorrhage. On separating the tumour it was slightly torn apart, and the placental tissue and some blood-clot exuded from the ruptured spot. However, the tumour was separated from the uterus and broad ligament and removed in one mass. It was found to be a left tubal pregnancy which had not yet ruptured. It contained a living $4\frac{1}{2}$ months' fœtus. The mass was five inches long, largest circumference $1\frac{1}{2}$ inches, smallest $9\frac{1}{2}$ inches, and weighed $1\frac{1}{4}$ lbs. Figs. 1, 2 and 3. (See Appendix, Case 1.)

Symptoms.

From the analysis of our series uterine bleeding occurred in no less than 77.3 per cent. of all the cases of tubal pregnancy. In this connexion it will be interesting to note that the frequency of the presence of the other two classical symptoms is as follows:— Abdominal pain, 90.9 per cent.; history of amenorrhœa, 63.7 per cent.

In a broad ligament rupture the shock is much less marked; the symptoms are less severe and are comparable with those of tubal abortion. See Case 3 in the Appendix.

Cases in which the pregnancy proceeds without interruption.

The case reported by H. R. Vickers[5] gives a good picture of this condition. In this instance the condition was that of a seven months living fœtus, which had developed free in the peritoneal cavity after a previous rupture. In conclusion, he says: "Reconstructing the history of the case, it appears that the patient became pregnant about the third moon, the pregnancy occurring in the right tube. Amenorrhœa followed, but by the sixth moon the sac had grown large enough to require more space, and ruptured the tube; this was accompanied by uterine hæmorrhage. The

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internal hæmorrhage was not very severe, and, though the sac itself was ruptured, that part of the chorion which was destined to form the placenta was not damaged sufficiently to overcome its vitality. The embryo continued to grow, the placenta forming around the site of rupture." This case was fortunately operated upon, and recovered.

In my list there were two cases under the care of J. L. Maxwell, of Formosa, in one of which the fœtal bones were discharged per rectum, and in the other, similar bones were removed from the bladder. J. Preston Maxwell's case had a sinus in the abdominal wall, close to the umbilicus, from which the bones of an arm had been extruded. Other bones were passed per rectum. A fourth case in which the bones were discharged per rectum has recently occurred at Nanking. This process of evacuation may be prolonged for years if not assisted artificially. The ultimate prognosis of these cases is not good, though some may recover.

Diagnosis.

One of the cases we have collected is typical of the kind of difficulty met by the doctor in China. The patient undoubtedly had a tubal rupture, came to the hospital for operation, was given morphine in preparation, which "cured" her, and the family decided that since she was "cured" she must not be operated upon! In this particular case the doctor put a small trocar into Douglas' pouch, and thick black fluid came away. This practice has been advocated as a means of diagnosis, but is not one to be approved.

After Rupture or Abortion.

The hæmatocele may reach above the umbilicus. On two occasions the patients were able to tell us that they could feel the increase in the size of their lumps when the abdominal pain was worse, and its gradual diminution when their general condition improved. This is an important observation, and in one instance the writer was able to rely on that fact alone in making a correct diagnosis.

During the Advanced Stages of Pregnancy.

In Edgar Robertson's case[4] there was a history of 24 months' amenorrhœa with feeling of movements in the tumour, lasting from the fourth to the seventh month. Such symptoms are very suggestive. At the operation the tumour proved to be one of cornual pregnancy which weighed 5 lbs., the fœtus weighing 3 lbs., and the sac 2 lbs. In H. R. Vickers' case[5] the fœtal movements were felt and the fœtal heart was heard beating at 168 per minute.

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Case 2 is interesting because while she was in one of the Peking hospitals she was treated for a miscarriage, and the tumour by the side of the uterus was diagnosed as a pyosalpinx, the removal of which was advised. The patient, however, refused, and went home. A month later, at the Peking Union Medical College, an operation was performed for ectopic gestation. (See Figs. 4 and 5.)

There were at least two cases in my list in which the erroneous diagnosis of fibroids was made before operation. Tumours are to be distinguished by the absence of urgent symptoms at the time of their formation, by their slow growth, sharply circumscribed mass and their mobility. On the other hand, in ectopic gestation, the symptoms of pregnancy may precede the formation of the tumour, and uterine decidua may be passed.

On January 31, 1923, there was admitted into the Peking Union Medical College Hospital a woman, aged 19, married, who had one child, 16 months old. About four months before admission she noticed a lump in the lower abdomen, and two months afterwards she had a sudden acute attack of abdominal pain, which was relieved by Chinese medicine two days later. From that date the patient noted a rapid increase in the size of the abdomen. After 15 days there was a recurrence of the same pain, but not so severe as on the first occasion. The pain was there intermittently till six days before admission, when he had an attack of nausea and vomiting. Amenorrhœa had been present ever since the last child was born, 16 months before, and no history of uterine bleeding was available. A remarkable fact about this case was that the patient said she felt movements within the tumour about a month previously and that this sensation lasted for two weeks.

Physical examination showed that she was thin and anæmic. Her blood count was Hgb. 52 per cent.: R.B.C. 3,240,000, W.B.C. 27,800. Her temperature on admission was 37.5°C., and the pulse 150 in rate. The urine showed a trace of albumen, otherwise it was normal. There was a hard mass arising out of the pelvis, reaching up above the umbilicus, not freely movable, and extremely tender on palpation. On top and to the right of this tumour there were several hard and irregular masses which were not unlike the parts of a fœtus.

Vaginal examination showed extreme pallor of the cervix, but no bulging nor lumps were felt in the pouch of Douglas. The uterus was felt to be on the right of the tumour. A temporary diagnosis of advanced ectopic gestation was made. Just prior to the operation the report from the X-ray examination was returned with the statement that no fœtal bones were made out.

On opening the abdomen a tumour, port wine in colour, and about the size of a seven months' pregnancy, was found. In part

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it was firmly adherent to the pelvic wall and omentum. It turned out to be a case of a malignant teratoma of the ovary with previous hæmorrhages into it. Metastases were found all over the peritoneum, and the fundus of the uterus, including the right tube and ovary, was normal but extremely pale. The interesting features in this case were the misleading history and physical signs. I know of two other cases in which malignant tumours in the pelvis in young women have been mistaken for advanced cases of ectopic gestation, one of these having travelled to Amoy from the Straits Settlements with such a diagnosis.

Cormack, of Peking, had a case in which appendicitis was the diagnosis, because the patient's temperature, pulse and abdominal symptoms were all suggestive of inflammatory trouble in the region of the appendix, but on operation it was proved to be a ruptured ectopic gestation.

Within the last year a case came into the Peking Union Medical College Hospital with the history of an attack of severe pain in the right side of the abdomen low down which had come on suddenly a few hours before. There was a history of two months' amenorrhœa, the uterus was enlarged and at the right side of this organ there was a palpable elastic swelling. At operation this swelling turned out to be a small ovarian cyst, and the real trouble was an attack of subacute appendicitis. The appendix and the cyst were removed and the two months' pregnancy went on without interruption to term.

Treatment.

Five cases have been treated expectantly for a time and then subjected to laparotomy with excellent results. It is well to bear in mind that most cases of hæmatocele, due to an early tubal gestation, will ultimately undergo absorption and recover without operation. Hence, in our advising the patient to undergo the operation, we should not pronounce an absolutely unfavourable prognosis should the patient refuse to follow the doctor's advice.

The following case recently came under the observation of James L. Maxwell. He says: "A former assistant of mine, a very capable man, brought his wife down to me a few months ago with the diagnosis of ruptured ectopic pregnancy. The woman was exceptionally intelligent, having herself had a full midwifery training, and was practising her profession. Her history is this: Age 27, iii-para, youngest child two years old. She was seized with acute pain in lower abdomen when her period had been delayed three weeks beyond time. She was put to bed because she felt very faint; the pain cleared up fairly rapidly. A second similar attack 10 days later, after which the husband brought her to the hospital.

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On admission she was very exsanguinated, abdomen slightly distended, a soft doughy mass present in left fornix and behind uterus, little or no rise of temperature. She was kept absolutely to bed with an ice bag to the lower abdomen. The mass gradually cleared up, leaving a fairly well-defined lump in the left side of pelvis. I saw the patient again to-day and examined her. The condition has completely cleared up, but the uterus is pulled over and bound to the left side of the pelvis."

An operation performed at a later date may be much more difficult, however, because of adhesions and the possibility of the collection of blood not being sterile.

The case reported by Maxwell[2] is one in which the removal of the tumour was impossible and the cavity of the abdomen having been carefully shut off by suture, the tumour was freely opened in front, the edges of the incision being caught up and sutured with silkworm gut to the abdominal wall. The patient made a good recovery.

Another interesting case under the care of Cormack, of Peking, was one of a tubal rupture occurring two days previously. The patient's condition was so bad during the operation that the ruptured tube was only ligatured, without attempting its removal, but the patient recovered.

Obviously if the ovum is still developing, or the tumour increases in size with signs of recurrent hæmorrhage, or symptoms arise indicating that suppuration has taken place in the swelling, the case must be treated by operation at the first opportunity.

Gestation Advanced Beyond the Fourth or Fifth Month.

Robertson[4] reported a case of a full time pregnancy at the right uterine cornu in which the whole sac and the fœtus were removed without much difficulty.

In another case reported by Vickers[5] the pregnancy was eight months and the fœtus was alive and freely movable in the peritoneal cavity. There was no sac, and the placenta was adherent to the posterior surface of the uterus. In this instance, in order to avoid serious hæmorrhage from the placental sinuses, it was decided to remove the uterus and appendages *en masse* with the attached placenta, leaving only the left ovary behind. A tube and gauze drain were left down to the bare area before closing the abdomen. The patient left the hospital quite well.

J. L. Maxwll, of Tainan, Formosa, has had two cases of full time pregnancy. In the first case the fœtus was dead in a well-formed sac, above and mainly in front of the uterus. The sac was marsupialized, and the patient did very well. In the second case the child was living and the placenta spread all over the bowels. The child was removed and the abdomen closed without interfering

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with the placenta. The woman died of some rapid toxæmia too quickly for sepsis and with no evidence of hæmorrhage. The child was greatly deformed in all four limbs and died a day or two later.

Two other unusual cases have been under the care of the same doctor. In one the fœtal bones were discharged per rectum, and in the other bones were removed from the bladder. No further details of the cases were received, and, therefore, the ultimate result was not known.

Mortality and Prognosis.

There were three deaths in this series of 54, making a mortality rate of some 6 per cent., but this is certainly not the correct percentage mortality as the majority of the patients in China have not as yet the possibility of getting to hospitals where modern treatment can be carried out. When more modern hospitals are built in China, and Western medicine has gained the confidence of the people, there is no reason why the results should not be as good as any of the best clinics in the world and the mortality be brought down to below 1 per cent.

In the Peking Union Medical College, during 1921-23, we operated on 10 cases, and every one of these made an excellent recovery.

Conclusions.

1. Ectopic gestation occurs frequently in China.
2. Probably its incidence there is about the same as in the countries of Europe.
3. It is found in all the provinces of the Republic.
4. Its features are the same as in the West, but owing to the reluctance of many patients to come to hospital or submit to operative procedures, a large number of cases never come to light and some are admitted to hospital only after the trouble has been allowed to drag on for some time.
5. When the cases are submitted to immediate treatment the results are as good as those obtained in the West.

Appendix.

Special Case Histories.

Case 1. *Advanced Tubal Pregnancy—Unruptured.*

Mrs. L. L., aged 30, a Cantonese, was first seen at the Peking Union Medical College Hospital on July 28, 1922. Married at 21 years of age, with a normal menstrual history; as far as she knew she had never been pregnant. Some time in April 1922 patient had such severe aching and discomfort in the epigastric region that she went into a Japanese hospital, where she remained for

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a month. About two weeks after admission the patient noticed a mass in the right iliac region which steadily grew larger, spread towards the middle line, and finally into the left iliac region, extending upward as far as the umbilicus. Then the mass gradually became smaller again, until at the time the patient presented herself it had diminished to about half of its maximum size. Frequently there was severe pain in the region of the lump. There was no difficulty in urination. Since April 1922 what she considered to be menstrual periods were more frequent than usual, the duration was increased and the amount greater, but as far as we could ascertain she passed no decidual cast. The patient did not menstruate again after July 24, 1922, but she did pass small amounts of coffee-coloured caseous material, some of which was always found lying in the vagina on examination. There was no purulent discharge, and the patient was in good general condition.

Abdominal examination showed a mass in the lower abdomen with a definite outline, smooth, round, movable, not tender, extending to a level halfway between the symphysis pubis and the umbilicus, and further to the left than to the right. On vaginal examination, the cervix was found to be anteriorly placed and was immediately behind the symphysis. The fundus could be made out, inclined to the right and slightly larger than normal. The *cul-de-sac* and left pelvis were occupied by a round, smooth mass connected with the uterus and fixed in the pelvis. The mass was elastic, tense and tender on deep pressure.

The patient was seen on several occasions between July 28, 1922, and her admission to the hospital, September 12, 1922. She missed her August and September menstrual periods, but the brownish, caseous, vaginal discharge was always found in the vagina. The mass began to grow and reached the umbilicus. Her blood-pressure on admission was 90/65. Laboratory examinations showed a normal urine, a negative Wassermann and blood as follows: Hæmoglobin 65 per cent., R.B.C. 3,660,000, W.B.C. 8,600, differential count, polymorphonuclear leucocytes 78 per cent., lymphocytes and large mononuclears 22 per cent.

On September 14, 1922, the abdomen was opened by the author. A large mass was found in the left iliac fossa, firmly adherent to the uterus and surrounding structures, especially to the posterior wall of the pouch of Douglas. The right tube and ovary were normal, and there was no evidence of old hæmorrhage into the abdomen. On separating the tumour it was slightly torn in part and placental tissue and some blood-clot exuded from the ruptured spot. However, the tumour was removed in one mass from the uterus and broad ligament. It was found to be a left tubal pregnancy which had not yet ruptured. It contained a living $4\frac{1}{2}$

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months' fœtus. The mass was five inches long; largest circumference 10½ inches, smallest 9½ inches; weight 1¼ lbs. (See Fig. 1.)

Patient made an uninterrupted recovery, and left the hospital on October 6, 1922, in good condition.

Case 2. *Tubal Mole simulating Uterine Abortion and Pyosalpinx.*

Mrs. V., aged 31, a native of Kiangsu, was admitted to the Peking Union Medical College Hospital on September 24, 1922. She had been married 16 years, but became pregnant for the first time six years before. This pregnancy resulted in the miscarriage of a three months' fœtus. Following this, she had three normal pregnancies. The three children are living and well, the youngest being two years old. Since the first baby the patient has had more or less constant leucorrhœa, but never profuse. Her last monthly period occurred on June 30, 1922. On August 14, 1922, the patient was suddenly seized with very severe pain in the left iliac region which lasted one day. Two days later the patient had a slight, black, bloody, vaginal discharge which lasted a few days. On August 21, while in one of the Peking Hospitals, patient passed a big black clot, which she was told was a miscarriage, but the specimen was lost and no microscopic examination was made. She was thought to have, in addition, a pyosalpinx, as there was a mass in the left side. Operation for the supposed pyosalpinx was advised but refused, and the patient went home.

On August 29 the patient had another attack of severe pain which started in the left side of the lower abdomen and gradually extended over the whole abomen. This lasted two to three hours, and was associated with nausea and vomiting. On September 18 patient had a fresh, red, bloody discharge for five to six days, then the colour changed to black and the amount became much less.

On September 22 the patient had a third attack of pain in the left iliac region. At the Peking Union Medical College Hospital on September 25 a bimanual examination revealed a uterus normal in size which was pushed to the right by a freely movable, tender mass in the left iliac fossa. The cervix was softer than normal, and there was a slight bloody discharge from the uterus. The rest of the examination and the laboratory findings showed nothing abnormal except a leucocytosis of 11,000.

On September 28 the following operation was performed by the author. A midline incision was made between the umbilicus and the symphysis pubis. There was no free blood present in the peritoneal cavity. The left tube was found to be enlarged and adherent to the surrounding structures, particularly to the posterior wall of the pouch of Douglas. The tube was easily separated and

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removed, leaving a portion of the left ovary intact. On examination it was found to contain a mole situated at the isthmus, the duration of the pregnancy being about six weeks. The rest of the tube was filled with a blood-clot. Figs. 4 and 5.

The patient made an uninterrupted recovery, and left the hospital on October 21, 1922, in excellent condition.

Case 3. *Ectopic Gestation simulating Pyosalpinx.*

Mrs. Y. T. H., aged 33, a native of Hupeh, was admitted to the Peking Union Medical College Hospital on March 20, 1922. She had had five normal pregnancies and no miscarriages. The youngest child was three years old. There had been a profuse leucorrhœal discharge for several years. Menstruation had been regular until the past two months, when she had slight irregular bleeding on two or three occasions. On January 23, 1922, she caught cold and at the same time had slight epigastric pain. This pain continued slightly for four days, and then became severe enough to warrant an injection of morphine. For the next week the pain persisted, but gradually decreased. On February 2 she noticed a mass in the right lower quadrant of the abdomen, the size of an orange, and one in the left lower quadrant, the size of a walnut. The pain now became localized in the lower abdomen and there was slight bleeding from the vagina. From February 2 until admission on March 20 the lump in the right side grew gradually larger and the one in the left side gradually disappeared. The pain persisted, the abdomen was distended, and the patient was very constipated. The afternoon before admission, March 20, the patient had been examined bimanually, and during this examination she was seized with intense pain in the lower abdomen and was brought to hospital in the evening.

On examination, the abdomen was found to be slightly distended. It did not move on respiration, was tympanitic everywhere and tender. There was no evidence of free fluid. Below the umbilicus masses could be felt on both sides extending nearly as high as the umbilicus. On pelvic examination the cervix was found to point downwards, was lacerated, but did not admit the finger. The uterine body seemed somewhat soft, was fixed and blended with the two masses of which the left was the larger. There was dark blood coming from the uterus. Blood examination showed W.B.C. 15,050, R.B.C. 2,850,000, Hgb. 55 per cent. The impression given on admission was one of chronic pelvic inflammation with leakage and peritonitis, but ectopic gestation was also considered.

After ten days in hospital with strict rest and Fowler's position the patient's general condition had improved considerably; the

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pulse-rate was no longer rapid, her abdomen moved on respiration, and the distension had disappeared. She was, therefore, operated upon on April 1 by J. P. Maxwell. Operation revealed a living $3\frac{1}{2}$ months' pregnancy in the left broad ligament. The tube could not be made out as a separate entity. The intestine, small and large, was adherent to the back of the mass and had prevented leakage to any large extent. Slight leakage had taken place, but there was little blood in the peritoneal cavity. The whole of the broad ligament was removed and the cavity narrowed by stitching the large intestine and upper part of the rectum lightly to the back of the uterus. One cigarette drain was put in and removed after 12 hours. Convalescence was smooth. See Fig. 6 and 7.

Case 4. *Ectopic Gestation simulating Fibroids of the Uterus.*

Mrs. P. C., aged 26, a Cantonese, was admitted to the Peking Union Medical College Hospital on July 8, 1921. She had been married nine years and had never been pregnant. Menstruation had always been somewhat irregular, varying in amount, duration and interval. Patient had missed no periods. In May she was seized with severe pain in the lower abdomen, lasting about half an hour. This recurred at intervals for two weeks. Then she began to have slight bleeding from the vagina which lasted about a month, accompanied by aching in the abdomen, radiating to both sides.

Patient was found to be normal except for secondary anæmia (Hgb. 60 per cent., R.B.C. 3,500,000, W.B.C. 5,600), and for a swelling in the abdomen. This lump was in the right lower quadrant and extended from the umbilicus to within a few centimetres above the pelvic brim and over to the left side. This was freely movable, tender, and showed no fluctuation.

On July 12 the author opened the abdomen. The omentum was blood-stained and adherent to a mass arising from the pelvis. This mass, in which an enlarged unruptured right tube and ovary were bound up, was removed. Microscopically, there was great hypertrophy of the mucosa; in one place there was marked hæmorrhage into the wall, this area of hæmorrhage being apparently connected with the lumen of the tube, and at the edge of this hæmorrhage one or two not very healthy looking chorionic villi.

The patient made an uneventful recovery, and was discharged on August 4, 1921, in good condition.

Case 5. *Case of Tubal Mole simulating Pyosalpinx.*

Mrs. C. P., aged 27, a native of Kiangsu, entered the Peking Union Medical College Hospital on October 19, 1922. She had had three normal pregnancies and no miscarriages, the youngest child

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being three years old. Patient had suffered from leucorrhœa since marriage, never very profuse, never foul or blood-tinged. Menstruation had always been regular and painless until about three years ago, when her husband had gonorrhœa. At this time she had pain preceding each period. This gradually decreased in severity and ceased altogether after two years. At the end of July 1922, the patient had a dull throbbing ache in the lower left abdomen, which was severe and almost constantly present. Eight days later, as the pain continued, she consulted a doctor, who pointed out to her that she had a lump, about the size of a hen's egg, in the region of the pain. For the next two months she had intermittent pain. Whenever the pain was severe she could feel the lump; when she was free from pain she could not feel it. Whenever she felt it, it was always the same size. Suddenly, however, in early September, a severe attack of abdominal pain supervened, and she noticed the lump had increased in size. This condition lasted two days; as the pain was relieved the lump became smaller. Since then the patient had felt much better, the pain and lump both having disappeared entirely, as far as the patient was aware, twenty days ago. With the onset of this trouble at the end of July the patient had two days of slight intermenstrual bleeding on two occasions instead of the usual period, after which normal menstruation was resumed.

On examination, the patient was found to be normal except for the following findings: On abdominal palpation a definite lump, the size of an orange, freely movable and not tender, was found in the left iliac fossa, pushing the uterus to the right, and the uterus seemed somewhat enlarged. These findings were confirmed by bimanual examination.

On October 21, J. P. Maxwell opened the abdomen. A large mass was seen on the left side, which was identified as the left tube and ovary. The tube was distended with blood, and was about 3 cm. in diameter and about 14 cm. in length. It was bound down in the pelvis and to the right tube and ovary by rather dense adhesions. In freeing these the tube ruptured and old black clotted blood escaped. Both tubes and the left ovary were removed. In separating the right tube and ovary from the adhesions a large cyst of the right ovary was ruptured, freeing a blood-clot. This cyst was removed.

A microscopic examination showed a large mass of newly-organized tissue with blood extravasation in the wall of the tube. In one place there was a small space containing chorionic villi.

The patient made an uninterrupted recovery, and left the hospital on November 7 in good condition.

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Case 6. *Hæmatosalpinx of One Year's Duration.*

Mrs. H., aged 38, a native of Fukien, entered the Peking Union Medical College Hospital on July 12, 1921. She had had five normal pregnancies and one miscarriage. She had never had leucorrhœa. Menstruation had always been regular until April 1921, when she missed her period. A few days after the time of her May period she had an acute hæmorrhage from the vagina, which lasted about two hours, and was accompanied by abdominal pain. The bleeding and pain continued to a much less extent with occasional exacerbations until she was dilated and curetted, on July 13. She left the hospital improved on July 26.

The following April, 1922, the patient again entered the hospital, having had metrorrhagia and menorrhagia for two months. Patient was put to bed; bleeding decreased greatly, and she was discharged without further treatment on the fourth day after admission.

Five days later, April 9, 1922, patient was again readmitted, having been bleeding a great deal more each day since she was discharged from the hospital. On April 11 the abdomen was opened by the author, and the uterus and left tube and ovary were removed. The uterus was slightly larger than normal, and the left tube was about the size of an apple, dark-brown in colour, and exuding a dark-brown fluid when touched. Microscopic examination of the uterus showed a slight endometritis and some hypertrophy of the remaining portion of glands. The Fallopian tube was a hæmatosalpinx containing old chorionic villi.

The patient left the hospital on May 10, 1922, in very good condition.

Case 7. *Double Ectopic Gestation, Ampullary.*

Mrs. W., æt. 34, a Fukien woman, was admitted into Hope Hospital, Amoy, in June 1913. She had missed two periods, and had been suffering from attacks of pain in the lower abdomen for the past three weeks.

An irregular soft mass, about the size of an orange, could be felt in Douglas' pouch. The cervix was not markedly softened, and there had been irregular uterine hæmorrhage, small in amount for the past month.

The uterus could not be clearly made out apart from the swelling in the pelvis.

J. P. Maxwell opened the abdomen and found Douglas' pouch filled with a mass of old clot, both tubes distended with clot which extruded from the fimbriated extremity in each case. They were bound up with the pelvic mass. Both tubes and one

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ovary were removed. Sections showed chorionic villi in the walls of each of the tubes. No trace of the fœtuses was found. The patient made a good recovery.

Case 8. *A Second Ectopic Gestation with Indefinite Signs and Symptoms.*

Mrs. C. H., Shao, æt. 27, was admitted to the Peking Union Medical College Hospital on February 18, 1924 (Hospital No. 2547). She complained of three attacks of lower abdominal pain in the last 48 hours, all three having come on when she was in bed at night. She had never, as far as she knew, had a pregnancy. Her periods had been regular, and she was now over time two weeks and had been bleeding slightly from the vagina since February 14. There was distinct tenderness and an ill-defined mass in the left fornix. There was also slight general abdominal rigidity. Hæmoglobin 60 per cent.

In 1921, after menstrual irregularity and vaginal bleeding for 50 days, she was operated upon by J. P. Maxwell. A dilatation and curettage was done, followed by a suspension operation. The left tube was found to be distended and closed, and was removed. It proved to be a hæmatosalpinx, and in the wall old chorionic villi were found.

On this occasion she was operated on at once by J. P. Maxwell, and a ruptured tubal gestation found on the right side. It was removed, and the patient made a good recovery.

Case 9. *Ectopic Gestation in an Obstructed Tube following a Suspension Operation.*

Mrs. C. H., Liu, æt. 28, was admitted to the Peking Union Medical College Hospital on September 24, 1923 (Hospital No. 6067). She looked ill. There had been one pregnancy which ended prematurely at the seventh month. This was nine years back, and seven months before admission a suspension operation had been done at another hospital in order to try and secure another pregnancy. Menstruation had been regular up to eight weeks before admission. She then began to bleed from the vagina. This bleeding has been profuse at times. For the last few days she has had pain in the lower abdomen. Her temperature was 38.6°C. Hæmoglobin 60 per cent., and leucocytes 6700. On the 19th there was little to note save that the uterus appeared fixed to the anterior abdominal wall, and there were no lateral masses of any size. On the 24th there had developed a definitely tender, soft mass on the left side. The possibility of ectopic gestation was considered, and especially in view of the hæmoglobin being now

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only 35 per cent., but on the whole it was thought that it would probably turn out to be a tubo-ovarian abscess. On opening the abdomen it was evident that the swelling was a gestation in the outer half of the left tube which appeared to have been drawn with the round ligament into the abdominal wall at the time of the suspension. The gestation had ruptured into the outer part of the broad ligament and had raised the parietal peritoneum of the left side of the pelvis off its bed, the blood having stripped it up. The uterus was detached from the old scar and removed together with the tube and pregnancy, and the parietal peritoneum let down into its place again.

The patient was transfused on the day following operation, and made a good recovery. On account of oozing a cigarette drain was placed down to the bottom of Douglas' pouch on the left side and removed in a few days.

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ILLUSTRATIONS.

Fig. 1. Extrauterine pregnancy in left Fallopian tube, unruptured, opening made by scalpel. Case No. 1.

Fig. 2. Ditto. Fully opened.

Fig. 3. X-ray of same case, *in situ*.

Fig. 4. Tubal mole unruptured. Case 2.

Fig. 5. The same specimen with a window cut out and part of blood removed to show embryo.

Fig. 6. Drawing showing rupture into broad ligament, placenta below, child alive. Case 3.

Fig. 7. Ditto, specimen of child and placenta after removal.

Fig. 8. Drawing showing rupture of Fallopian tube at the ampulla and discharge of ovum into abdomen.

Fig. 9. The ovum from the same case, unopened.

Fig. 10. The ovum from the same case, opened.

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