ECTOPIC PREGNANCY

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The term 'ectopic pregnancy' includes all pregnancies which occur outside the uterine cavity and is, therefore, a more inclusive one than 'extra-uterine pregnancy,' which by definition excludes angular (interstitial) pregnancy and pregnancy in a rudimentary horn of a bicornuate uterus.

Ectopic pregnancy received only scant attention in the medical literature of the mediaeval and renaissance periods, and it fell to Parry (1876) to grasp the full significance of the condition and to realize that it was amenable to surgical treatment. This realization coincided with the great strides being made in abdominal surgery, and Tait performed his first laparotomy for the condition in 1883. This patient died, but during the next five years he performed 42 laparotomies for ectopic pregnancy with but two deaths (Tait, 1888).

Since the days of Tait the condition has continued to cause both diagnostic and therapeutic difficulty, and, therefore, a review of 98 cases treated at the Middlesex Hospital between the years 1930 and 1950 was considered worthwhile.

The fact that only 98 cases of ectopic pregnancy could be found over a 20 year period in a large general hospital suggests that the condition is not common. Our 98 cases represent an incidence of ectopic pregnancy to term intra-uterine pregnancy of about one in 200. This figure agrees very closely with that quoted by Eastman (1950), but is very much lower than the incidence of one in 50 pregnancies described by Ingraham (1949).

Aetiology

It remains a firm belief that fertilization of the ovum takes place in the ampullary portion of the Fallopian tube. Why, then, is ectopic pregnancy such a relatively uncommon condition? It must be admitted that the answer to this question is not completely known, but remembering the mode of fertilization of the ovum, it is reasonable to assume that ectopic pregnancy may occur under any condition in which retardation or arrest of the onward movement of the fertilized ovum is possible or likely. These conditions may be listed as follows:

1. Obstruction of the Fallopian tube from without.
2. Obstruction of the lumen of the tube.
3. Destruction of the tubal ciliated epithelium.
4. Fibrosis of the muscle of the Fallopian tube.
5. Congenital tubal abnormalities.
6. Tubal endometriosis.

Inflammatory tubal changes causing tubal fibrosis, obstruction or epithelial damage may follow salpingitis or pelvic peritonitis from any cause. Tubal abnormalities such as accessory ostia or congenital diverticula predispose to ectopic pregnancy, as does tubal endometriosis, where decidua may form in the affected tube, thereby encouraging tubal implantation of the ovum. Inflammatory tubal changes and the associated risk of ectopic pregnancy can often be suspected from the history, whereas congenital tubal abnormalities, and most cases of tubal endometriosis, are pathological diagnoses and can only interest the clinician in retrospect. When all is said and done, there are no apparent aetiological factors in a large proportion of cases of ectopic pregnancy. In the series here presented, only 20 gave a positive history of previous pelvic inflammation.

TABLE I
HISTORY IN 98 CASES OF ECTOPIC GESTATION

Previous Abortion	..	..	..	..	9	} 20
Previous Ectopic Pregnancy	..	..	..	..	5	
Previous Salpingitis	..	..	..	..	1	
Previous Appendicitis	..	..	..	..	2	
Recent Salpingostomy	..	..	..	..	1	
Recent Tubal Insufflation	..	..	..	..	1	
Graffenburg Ring Present	..	..	..	..	1	} 78
Negative History	..	..	..	..	78	

Siegler (1945) found residua of pelvic inflammatory disease in 78 per cent. of 127 cases. Beacham (1948) in New Orleans and Buss (1950) and his colleagues in Cape Town found a very high incidence of ectopic pregnancy which they related to the frequency of salpingitis and pelvic inflammation in a large coloured population.

TABLE 2
AGE DISTRIBUTION OF 98 CASES OF ECTOPIC GESTATION

Under 20 years	..	..	..	..	..	0
21-30 years	..	..	..	..	..	42
31-40 years	..	..	..	..	..	51
Over 41 years	..	..	..	..	..	5

This age distribution does not in itself call for comment, but it must also be noted that 51 of these cases were nulliparous, a much higher incidence than that reported by Siegler (1945) (24.5 per cent.) or Gioanni and Wirtz (1949) (26.6 per cent.).

Mortality

The mortality from ectopic pregnancy has diminished with the advent of antibiotics, improved methods of anaesthesia and wider use of blood transfusion. There were no deaths amongst the 98 cases here reported, and other workers such as Echols (1934) and Leff and Winson (1947) have also reported large series without a death. There is no room for complacency, however, as Siegler (1945) submits a mortality of 3.9 per cent. in 127 cases.

Symptoms and Diagnosis

Fig. 1 shows the various courses that an unruptured ectopic pregnancy may take. They are separated into the 'rare,' the 'uncommon,' and the 'common.' A full understanding of these possibilities is essential to the clinician. Without this understanding symptoms and signs which are confusing at the best of times become quite unintelligible. If the condition of ectopic pregnancy in its various pathological varieties is borne in mind in every case of obscure abdominal or pelvic disorder in women, the erroneous diagnoses will be reduced to a minimum.

The Fallopian tube is a totally unsuitable site for the development of a pregnancy beyond a very limited time, and for this reason tubal pregnancy reaching term is indeed a rare occurrence; no case occurred in the series reported.

Secondary abdominal pregnancy is not quite so rare. This series contains one such case, and the usual reported incidence is about 1 per cent. of all ectopics. At some time relatively early in pregnancy the Fallopian tube ruptures, freeing the embryo and its membranes, which then gain attach-

FIG. 1.—The natural history of ectopic pregnancy.

ment at some other intraperitoneal site, and development continues. This incident may pass unnoticed, and attention is not called to the condition until spurious labour develops. Painful uterine contractions occur near term, and after a variable period of time the foetus dies. Laparotomy at this stage will lead to extraction of a dead foetus. The problem then arises: What is to be done with the placenta? It is probably attached to the bowel or its mesentery and attempted removal would lead to catastrophic bleeding. In these circumstances it is best to divide the umbilical cord as near to the placenta as possible and to leave the placenta alone.

Mrs. L.O., aged 33, was admitted to the Middlesex Hospital on October 15, 1935. She was at term and foetal death had apparently occurred between three and four weeks previously. The foetus was presenting by the breech, and five unsuccessful attempts had been made to induce labour. Examination and intra-uterine exploration under anaesthesia revealed the true diagnosis, and a dead foetus was removed from the peritoneal cavity. The placenta was seen to be attached to the mesentery of the small bowel and was left undisturbed. The patient made an uninterrupted recovery.

This treatment is approved by most authorities, but Nicodemus and Carrigg (1940) point out that if the placenta can be removed without risk of bleeding, then recovery is most likely to be smooth and uncomplicated. They also affirm that the largest number of maternal deaths occur in those cases in which marsupialization or drainage has been carried out.

Laparotomy performed subsequently in some of these cases has proved that placental absorption can occur. Cases are on record in which the condition has passed unrecognized at the time, to be diagnosed perhaps many years later when laparotomy reveals a partially absorbed and calcified foetus lying in the peritoneal cavity.

It is possible to diagnose secondary abdominal pregnancy before spurious labour or foetal death have occurred. There are many reports of this having been done, and the important diagnostic points appear to be abnormal and unstable foetal positions associated with undue ease of palpation of the foetus lying free in the peritoneal cavity. The diagnosis can be confirmed by exploration of the uterine cavity with a sound or by hysterosalpingography. In these circumstances, laparotomy at term, extraction of the foetus and the management of the placenta as suggested above, would be the best line of treatment to adopt (Roques and Winterton, 1937).

Suter and Wichser (1948) state that about 25 per cent. of all ectopic pregnancies diagnosed after the fifth month of pregnancy will result in living babies. They sound the warning, however, that

one-third of these infants will have major or minor deformities and only one-half of them will survive eight days or more.

A diagnosis of ectopic pregnancy in the early stages before tubal rupture or leakage has occurred is possible, but has rarely been made in our experience. A short period of amenorrhoea accompanied by vague abdominal pain situated in one or other iliac fossa might prompt a pelvic examination at which a small tender mass in one or other lateral fornix might be detected. In these circumstances it is unlikely that more than a suspicion of the condition will be aroused.

Sudden tubal rupture with little or no warning constitutes the type of ectopic pregnancy described in many of the standard textbooks. It is certainly very dramatic when seen but fortunately constitutes only a small proportion of any series. The history is short, and may be one of amenorrhoea accompanied by slight vaginal bleeding. There is sudden collapse with well-marked signs of shock, severe abdominal pain and obvious evidence of severe intraperitoneal bleeding. The diagnosis is obvious, the only doubt about the case being the eventual outcome for the patient.

TABLE 3
LENGTH OF HISTORY OF 98 CASES OF ECTOPIC PREGNANCY

Under 24 hours	..	24			
24 hours-7 days	..	15	(1 becoming suddenly acute)		
Over 7 days	..	51	(3	"	"
Uncertain	..	7			

One full-time secondary pregnancy is excluded.

A glance at the above table shows that only about 25 per cent. of all cases have a history of less than 24 hours, and it is from this group that the dramatic cases of sudden tubal rupture are drawn. It is as well to remember that in a small proportion of the cases with a short history the diagnosis is made before tubal rupture has occurred. Those cases in which tubal leakage, suggested by a long history, becomes a sudden severe rupture should also be remembered. It is this latter occurrence that constitutes one of the soundest arguments for early surgery in all cases in which an ectopic pregnancy has been diagnosed. Four such cases occurred in the series here presented, two of them in circumstances which it is well to notice. Determined palpation of a leaking or partially ruptured tube may convert it into a freely bleeding completely ruptured one, with serious and perhaps disastrous results.

Mrs. R.G. was known to be three months' pregnant and on January 9, 1950, at 1 a.m., she summoned her general practitioner. She had been bleeding slightly for five days and was suffering from severe abdominal

pain. Her doctor suspected a ruptured ectopic pregnancy and arranged for an ambulance to take her to hospital. She was seen in the casualty department at 4.30 a.m., where the casualty officer examined her and considered that there was very little wrong. She was sent home by ambulance but when she arrived home the ambulance attendants realized that she was gravely ill and brought her straight back to hospital. By this time it was 7 a.m., and her condition on admission was grave. She was severely shocked and pulseless, but the rapid transfusion of two pints of blood supported her sufficiently for laparotomy and removal of the ruptured right Fallopian tube to be carried out. The peritoneal cavity was full of fresh blood and blood clot. A post-operative blood transfusion hastened an uneventful convalescence.

The other case in which acute were superimposed upon chronic symptoms occurred after examination of a patient in hospital by house officer, registrar and consultant. Baird (1950) draws attention to the fact that such sudden bursting of the Fallopian tube with severe bleeding may also occur whilst an obscure case is being examined under anaesthesia.

About 10 per cent. of cases of ectopic pregnancy present with sudden tubal rupture and severe intra-

peritoneal bleeding and it is in this group that deaths are most likely to occur.

The most usual course for an ectopic pregnancy is that of tubal leakage proceeding to peritubal haematocoele, pelvic haematocoele, tubal mole or tubal abortion (Fig. 1). By tubal abortion is meant extrusion of the ovum from the fimbriated end of the tube after bleeding around it has separated it from the wall of the tube. This is a diagnosis which will probably only be made at laparotomy and occurred eight times in our series. How often this condition occurs and escapes diagnosis is pure guesswork, but it has been suggested that it is more common than is realized and is perhaps responsible for many of the incidents of amenorrhoea followed by some irregular bleeding and abdominal pain seen in practice. The incidence of tubal abortion and the other sites of implantation of ectopic pregnancy in our series is seen depicted in Fig. 2.

A tubal mole results when the ovum has been detached from the wall of the tube by bleeding and dies. The tube does not rupture, nor does ex-

FIG. 2.—Situation of 89 cases of ectopic pregnancy.

trusion of the ovum from the fimbriated end of the tube occur; symptoms subside and the diagnosis is only made at laparotomy. Only three such cases were encountered in our series (Fig. 2).

In the majority of cases of ectopic pregnancy a moderate degree of intraperitoneal bleeding occurs; if it is limited in amount the blood clots in the vicinity of the rent in the tube, forming a peritubal haematocoele. Somewhat heavier bleeding will cause spill into the pouch of Douglas where clotting occurs—pelvic haematocoele. In rare cases the tube leaks from the area enclosed between the two layers of the broad ligament and a haematoma is formed.

In most of these patients the history extends over a period exceeding 24 hours and diagnosis may not be easy. In the series here presented a correct pre-operative diagnosis was made in only 71 patients (Fig. 3); in 27 cases a variety of diagnoses were made for a variety of reasons.

Study of Table 4 shows that a large number of these incorrectly diagnosed cases suffered no delay in treatment. Nine cases were recognized as acute abdominal emergencies of obscure aetiology and

TABLE 4
INCORRECT DIAGNOSES IN 27 CASES OF ECTOPIC PREGNANCY

Acute Abdominal Emergency	9	} 27
Abortion	5	
Pelvic Tumour	5	
Fibroids	3	
Pleurisy	1	
Salpingitis	1	
Appendicitis	1	
Twisted Pedicle of an Ovarian Cyst	1	
Carcinoma of Body of Uterus	1	

in two more cases a diagnosis of torsion of the pedicle of an ovarian cyst and acute appendicitis demanded urgent surgery. In the remainder of these cases there was very real doubt. The history was long and the symptoms were vague and variable. Slow leakage from the tube occurred and a peritubal or pelvic haematocoele formed. As these cases may at any stage become acute, accurate diagnosis is an urgent necessity.

The acute cases are usually diagnosed correctly, and Atlee (1947) found only 12 incorrect diagnoses

ECTOPIC PREGNANCY - 98 Cases.

FIG. 3.—Diagnosis and symptoms of 98 cases of ectopic pregnancy.

in a series of 100 cases; he stresses the fact that only two of these incorrect diagnoses were in acute cases. Beacham (1948), in a very large series of cases, reported that a correct diagnosis was made in 44 per cent. up to 1920, 62 per cent. from 1921 to 1936 and 82 per cent. from 1937 to 1946. He attributed the rising accuracy of diagnosis to increased alertness to the possibility of the condition.

When a correct diagnosis is made without delay, it has almost invariably been made on the presence of abdominal pain, slight vaginal bleeding and the detection of an adnexal mass. Eighty-five of our cases presented with abdominal pain and bleeding and in 25 of these a mass was detected (Fig. 3). Leff and Winson (1947) found this triad present in 63 per cent. of their patients, 83 per cent. having pain and bleeding only. In only a proportion of cases will there be a suggestion of early pregnancy; 31 of our patients gave a history of amenorrhoea or 'a period overdue' (Fig. 3). In many cases symptoms arise before a period could be missed, and then the diagnosis may be further obscured by the appearance of irregular and persistent vaginal bleeding.

The presence of unclotted blood in the peritoneal cavity may give rise to two very suggestive diagnostic points, firstly referred pain over the tip of the shoulder due to irritation of the under surface of the diaphragm and secondly bluish discolouration around the umbilicus known as Cullen's sign (Cullen, 1918). This sign has not been seen by us and only occurred once in the series reported by Way (1949). Shoulder tip pain occurred in 12 of our cases but many authors find a much higher incidence, Way (1949) quoting a figure of 60 per cent. for his series. It is interesting to note that occasionally this pain may be aggravated or even produced in the first instance by raising the foot of the bed and allowing the blood to run towards the diaphragm.

A pelvic haematocoele may cause rectal discomfort and in six of our patients severe tenesmus was present. In two of our patients a pelvic haematocoele caused acute retention of urine, a possibility referred to by few other authors.

Some degree of abdominal pain is present in almost 100 per cent. of cases, and it is well to remember that it may be due to one of several causes:

1. Acute pain due to sudden tubal rupture.
2. Dull pain due to slow tearing of the tube.
3. Colicky pain of tubal peristalsis (tubal abortion).
4. Peritoneal irritation including shoulder tip pain.
5. Pain elicited by palpation.

Slight vaginal bleeding from the uterine decidua membrane is also present in a large number of

cases. Occasionally the decidua may be shed intact, as happened in two of our patients. Histological examination of the membrane may show a very marked decidual reaction and no chorionic villi, a finding very suggestive of ectopic pregnancy. Arguing from this, some workers have advocated histological examination of endometrium obtained by curettage as a means of making a diagnosis in obscure cases. Romney (1950) examined 115 endometrial linings from cases of ectopic pregnancy and found that only 19.1 per cent. showed a decidual reaction. These figures indicate that the examination has only limited value, but in difficult and unusual cases which have been submitted to uterine curettage with a diagnosis of abortion, the curettings obtained should be examined microscopically.

In doubtful cases, direct inspection of the Fallopian tubes by peritoneoscopy or culdoscopy has been advocated, although we have no personal experience of either. Falls (1950) has written in favour of culdoscopy, but Schauffler (1945) has stated that he has not been impressed by the procedure and recommends aspiration of the pouch of Douglas by means of a needle and syringe. This procedure may be of value as long as it is realized that a negative result does nothing to rule out the possibility of ectopic gestation (Decker, 1947). As far as peritoneoscopy is concerned, it seems to hold very few advantages over laparotomy and is nearly as dangerous. Hysterosalpingography would appear at first examination to be a foolhardy procedure in cases of ectopic gestation, but Nielsen (1947) has had considerable experience with the procedure and finds it free from danger. He uses a water soluble contrast medium and describes a characteristic uterine atony and several possible tubal appearances:

1. Tube fills, showing filling defect.
2. Tube fills, but no defect.
3. Tube partly fills.
4. Tube not filled.

He points out that 50 per cent. of cases fall into group (1), and in such circumstances a correct diagnosis should be made. He recognizes sepsis, severe bleeding and intra-uterine abortion as contra-indications to the procedure. We have had experience of the procedure in only two cases and in both a positive and correct diagnosis was made on the presence of a tubal filling defect (Fig. 4). The dangers of the procedure appear to have been over-exaggerated.

Other ancillary methods of diagnosis are of very limited value. The detection of acid haematin in the circulation may be of value in obscure cases, and Pommerenke (1936) makes a claim for the detection of circulating bilirubin. We have had no personal experience of these methods but would

FIG. 4.—Hysterosalpingogram from a case of ectopic pregnancy showing uterine displacement and circular filling defect in the right Fallopian tube indicated by arrows.

not think that they were sufficiently valuable to warrant routine use. Many cases show a moderate degree of leucocytosis and raised erythrocyte sedimentation rate. Biological tests for pregnancy are of strictly limited use in diagnosis as there tends to be a very high percentage of negative results. Goldberger (1934) found 32 per cent. negative in 44 cases of ectopic pregnancy.

The differential diagnosis of ectopic gestation is very much dependent upon the stage of pregnancy at which the case is first seen and is best considered perhaps under the following four headings:

1. Before rupture.

In these circumstances the diagnosis is difficult, but awareness of the possibility goes a long way towards solving the problem.

2. Sudden tubal rupture.

(a) Ruptured follicle or ruptured corpus luteum.

(b) Acute appendicitis.

(c) Perforation of a hollow viscus.

(d) Haemorrhagic pancreatitis.

(e) Torsion of the pedicle of an ovarian cyst.

3. Tubal leakage.

(a) Salpingitis.

(b) Appendicitis with abortion.

(c) Torsion of the pedicle of an ovarian cyst.

(d) Ovarian cyst with pregnancy.

(e) Abortion.

(f) Fibroid and pregnancy.

4. With pelvic haematocoele.

(a) Retroverted gravid uterus.

(b) Salpingitis and pelvic abscess.

(c) Fibroid in the posterior uterine wall and pregnancy.

(d) Incarcerated ovarian cyst and pregnancy.

Study of this scheme shows that many of these differential diagnostic possibilities may be grouped under a general heading of 'acute abdominal emergency,' and as such demand urgent surgery. In other cases accurate diagnosis becomes a matter of urgency. Some of the conditions listed above demand conservative treatment and will not be helped by an unnecessary laparotomy. Ectopic gestation in its 'milder' forms may become acute and dangerous and, therefore, use must be made of ancillary means of diagnosis.

Treatment

The management of advanced tubal and secondary abdominal pregnancy has already been considered.

All authorities are agreed that once the diagnosis of ectopic pregnancy has been made immediate surgery is called for. In the more slowly developing cases of tubal leakage associated with peritubal or pelvic haematocoele, laparotomy and removal of the *whole* of the affected tube is probably the treatment of choice.

TABLE 5

OPERATIVE TREATMENT OF 98 CASES OF ECTOPIC PREGNANCY

Removal of Affected Tube Only	48
Removal of Affected Tube and Ovary	11
Partial Salpingectomy (Salpingostomy in two Cases)	13
Complete Bilateral Salpingectomy	6
Partial Bilateral Salpingectomy (Salpingostomy in One Case)	2
Removal of Affected Tube and Myomectomy	3
Removal of Affected Tube and Appendicectomy	2
Removal of Affected Tube and Ovarian Cystectomy	3
Uterus also Removed	6
Laparotomy and Removal of Blood Clots	3
Laparotomy on Secondary Abdominal Pregnancy at Term	1

Removal of the ovum from within the affected tube or removal of the involved part of the tube only has been followed sufficiently often by a further pregnancy in the same tube to discourage most surgeons from attempting such conservative surgery. There is no indication for removing the associated ovary.

Whether other pelvic abnormalities discovered at the time of operation should be corrected or left to some future occasion has caused much argument in the past. It is, of course, impossible to generalize, but provided that the patient's general condition is good it would not seem that there was any contraindication to whatever other surgical procedure appeared necessary.

The cases of sudden tubal rupture with heavy bleeding present special features. The loss of blood into the peritoneal cavity may be so great that clinical shock is profound and the blood pressure unrecordable. These cases are amongst the gravest of clinical problems and demand the most expert handling.

The first problem to be faced is whether time should be spent on resuscitation before attempting to open the abdomen and control the ruptured vessel or whether the abdomen should be opened without delay. It would be a brave man indeed who would open the abdomen of a gravely shocked patient in the absence of any resuscitative measures, but it may be that transfusion is unable to keep pace with the intraperitoneal blood loss until the bleeding vessel is secured. In these desperate, but fortunately rare, cases the soundest line of treatment is probably to attempt laparotomy and

clamping of the bleeding point at the same time that transfusion is being carried out. Once the vessel has been secured restorative measures may be intensified without fear of increasing the bleeding. Under these conditions the dictum 'get in, stop the haemorrhage and get out' is certainly a very sound one and surgical manipulations should be reduced to a minimum.

In the less severe cases it is wise to wait a short while for improvement in the general condition following rapid transfusion and then to open the abdomen and control the bleeding point. Under these conditions the best treatment is probably removal of the affected tube and the larger blood clots. Further interference is unlikely to serve any useful purpose.

Recovery of the blood from the peritoneal cavity and intravenous return to the patient after filtration may have been of some value in the past but it is doubtful whether there is a place for it in modern surgery. Matched blood is free from the risks of contamination. If blood is not available, intravenous dextran will support the circulation until such time as blood becomes available. Very exceptionally auto-transfusion might be usefully employed, but if the blood has been shed for some time (more than 36 hours) there seems to be a real risk of severe transfusion reactions.

Two further suggestions for treatment remain to be mentioned. Blumberg (1947) suggested the use of deep X-rays thereby sparing the patient a laparotomy. He stated that the ovary can seldom be saved at laparotomy and, therefore, there is no contraindication to a dose of 400 r, which is probably sufficient to kill the ovum. Like the seed in the parable, this suggestion, mercifully from the patient's point of view, has apparently fallen by the wayside.

Draa and Baum (1951) suggest that ectopic tubal pregnancies might be removed vaginally through a posterior colpotomy incision. This procedure has not commended itself to many surgeons.

Prognosis

The follow-up in our series was, unfortunately not complete. Out of 98 cases, 60 were traced and the result of this investigation is shown in Table 6.

TABLE 6
SUBSEQUENT HISTORY OF 98 CASES OF ECTOPIC GESTATION

Total Number of Cases	98
Traced	60
Subsequent Normal Delivery	11
Subsequent Stillbirth	1
Subsequent Ectopic Gestation	4
Subsequent Miscarriage	1
Negative History	43
Untraced	38

It is impossible to draw any conclusion from these figures except to say that normal pregnancy may well occur after an ectopic gestation and another ectopic gestation is far from rare.

A study of the literature throws very little more light on the problem. Way (1949) was only able to trace 58 cases out of 85 suitable for review and of these three had had another ectopic pregnancy and 11 patients shared 13 intra-uterine pregnancies. Masani (1949) states that from various surveys that have appeared in the literature, 30 to 40 per cent. are likely to conceive at a later date, and the recurrence rate of ectopic pregnancy is about 4 per cent. These figures are in accord with our findings, but Schumann (1921) quotes a one in eight chance of recurrent ectopic pregnancy.

In view of the limitations of most follow-up investigations we can probably do no better than agree with Eastman (1950) when he states that there is one chance in three of subsequent pregnancy occurring in a patient who has had an ectopic pregnancy and of these subsequent pregnancies approximately one in ten terminates in another ectopic. He points out that this is 30 times the usual incidence of this complication.

Summary

1. Ninety-eight cases of ectopic gestation occurring during a 20-year period are presented.

2. The aetiology is discussed, with special reference to previous pelvic inflammation.

3. The various pathological types are listed and special attention is paid to the way in which they present clinically.

4. It is noted that although the diagnosis may not always be obvious, in about one-third of the obscure cases an acute abdominal emergency is present which demands urgent surgery.

5. A correct diagnosis was made in 77 per cent. of our cases. Acute sudden tubal rupture with profuse bleeding is very seldom misdiagnosed.

6. Although various ancillary diagnostic methods are presented, it is stressed that accurate diagnosis depends primarily upon an accurate history and full clinical examination.

7. Once a diagnosis has been made laparotomy is essential and complete removal of the involved Fallopian tube is the treatment of choice. Whether or not other intra-abdominal disease is corrected at the same time depends upon the patient's general condition at the time of laparotomy.

8. There were no deaths in this series and with modern anaesthesia, transfusion and antibiotics the death rate should be very low in any series but depends very largely upon accurate diagnosis and prompt treatment.

9. Follow-up in this series is incomplete, but it is suggested that following ectopic gestation a patient stands one chance in three of becoming pregnant again, and in one in ten of these subsequent pregnancy will be ectopic.

I wish to thank the consultant staff of the Middlesex Hospital for permission to report this series of cases and especially Mr. F. W. Roques and Mr. W. R. Winterton for allowing me to quote their case previously reported and for their interest in this paper.

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NOTE: In the article by R. S. Smith published in June, 1953, entitled 'Searching the Medical Literature' it was stated that the latest volume indexes to appear for the *Abstracts of World Medicine* were those for 1950. In fact, the indexes for 1951 had already appeared. We regret this error and the Editor of *Abstracts of World Medicine* states that it is his aim to reduce the delay in publishing the indexes still further.