

A REVIEW OF 102 ECTOPIC PREGNANCIES

by

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Ectopic pregnancy is an interesting and tricky problem which has been approached from many angles. Much has been done to bring about a favourable outcome through better anaesthesia, availability of blood banks and improvement in the surgical techniques.

The purpose of presenting a review of 102 cases of ectopic pregnancy is to correlate several varied clinical signs and symptoms in arriving at the diagnosis. I feel that analysis of all

ber 1964. During this period there was a total of 34,032 full term deliveries and 3282 abortions, giving a ratio of 1:333 and 1:32.2 respectively. Schumann has given his incidence as 1:303, Beacham (1950) 1:126, (1955) 1:139, Upadhaya as 1:293-200 full-term deliveries.

Maximum age period of ectopic incidence in this series as shown in Table I is between 21 to 30 years. This earlier incidence corresponds to earlier child-bearing in India.

TABLE I

Present Series		Average						
Age in years	No.	Average years	Soisson & Moran	Kohl	Beacham	Arms-trong	Jonn-son	Prid-dle.
16 - 20	13							
21 - 25	38							
26 - 30	37	25.5	27.8	27.6	26.35	27.28	27	28.2
31 - 35	11							
36 and above	3							
Total	102							

patients in whom diagnosis was made initially and of all the patients in whom diagnosis was not suspected but proved after further observation is of value.

There were 102 cases of ectopic gestation observed and treated at Cama & Albless Hospitals, Bombay, from 1st January 1959 to 31st Decem-

ber 1964. Thirty-five patients were nulliparous and 67 were parous. In this parous group 25 were primiparae, 19 second parae, 10 third parae, whereas 7 and 6 belonged to fourth and fifth parity respectively.

Ectopic pregnancy and infertility are often associated and closely related to each other. A prolonged period of sterility is said to precede an ectopic pregnancy. In this series there were 19 cases of primary sterility, varying from 4 to 13 years. Nine

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of these were investigated for sterility. There were 13 cases of secondary sterility. Six of these had one-child sterility and 5 cases followed abortions. There were 15 cases who gave history of previous abortions prior to ectopic pregnancy. In Beacham's third series of 426 cases of ectopic pregnancy 34.6% gave history of abortion.

Past history of previous operations and diseases of pelvic organs is of significance, because of the condition of pelvic organs which may lead to ectopic gestation. There were 9 cases of old pelvic inflammation and 14 had history of dilatation and curettage and Rubin's test done on them. Twenty of the patients had history of previous abdominal operations. Laparotomies were done in 9 cases, caesarean section in one, ventral suspension and appendectomy in 7 cases and ovarian cystectomy in one case. One patient on whom ventral suspension and appendectomy was done in 1955 had an ectopic pregnancy in 1961. Eight months later, she was admitted again with ruptured ectopic gestation on the right side. This time a corpus luteum was found over the left ovary. It is difficult to decide whether the ventral suspension was responsible for the causation of 2 ectopics, or there was previous tubal damage or the second ectopic was due to external transmigration of the ovum.

Clinical aspects of Ectopic Gestation

Manifestations of an unruptured tubal pregnancy are not characteristic. Correct diagnosis is rarely arrived at. Almost all the symptoms and

signs produced by tubal pregnancy are caused by ultimate rupture of tubal wall or abortion, with resultant haemorrhage into the peritoneal cavity. Hence symptoms and signs of tubal pregnancy as described are nothing but the clinical description of tubal gestation which has been disturbed.

In the present study it was found that only a certain proportion of cases of tubal pregnancy presented a typical textbook picture of amenorrhoea, bleeding per vaginam, fainting attacks, abdominal pain, tenderness and adnexal mass. But in the majority of cases symptoms were so varied, complaints so mild and physical signs so vague that it was not unusual for the clinical features to be misinterpreted. Various signs and symptoms of ectopic gestation in the present series have been reviewed in Tables II and III, and compared with those of other authors.

I would like to point out that some of the symptoms and signs which, if not kept in mind, are likely to mislead one to a wrong diagnosis. In the present series, as depicted in Table II, 86 patients had pain in abdomen as their chief complaint. Amount of pain complained of was variable, and depended on factors like pain threshold of individual, location, pathology, duration of ectopic pregnancy and amount of intraperitoneal bleeding. In some cases where the patient complained of upper abdominal pain, one was unlikely to think of pelvic pathology. One patient in this series complained of pain in the right hypochondrium, was believed to be having biliary colic and hence diagnosis was missed.

TABLE II
Symptoms

Symptoms Present series	No.	Soisson & Morán (50)	Beacham's 3rd series (426)	Johnson (245)	Priddle (136)	Arms- trong (481)
1. Pain	86					
acute	58 ()					
chronic	28 ()	98.0%	65.2%	87.0%	90.0%	96.4%
not noted	3					
2. Amenorrhoea	75	98.0%	90.0%	27.4%	81.0%	—
3. Vaginal bleeding	80	90.0%	32.9%	44.9%	61.0%	87.9%
4. Anbrexia	41	—	—	51.0%	11.0%	—
5. Syncope	34	20.0%	15.0%	44.0%	31.0%	—
6. Dysuria & rectal tenesmus	24	—	—	15.1%	2.0%	25.8%
7. Shoulder pain	10	—	—	13.9%	.077%	12.20%
8. Fever	29	—	—	—	—	—

TABLE III
Physical Findings

Present series signs	No.	Armstrong (481 cases)	Johnson (245 cases)
1. Shock	14	80	—
2. Abdominal tenderness	72	446	104
3. Abdominal mass	27	—	—
4. Rigidity & spasm	38	176	33
5. Abdominal distension	17	—	25
6. Tenderness on moving cervix	55	—	—
7. Adnexal mass	64	324	188
8. Cul-de-sac mass	44	406	48
9. Enlarged uterus	28	—	99

Several types of menstrual irregularities are met with during ectopic pregnancy. There may or may not be a period of amenorrhoea. In this study, 75 patients gave history of amenorrhoea exceeding 4 weeks, the average being 6 weeks. In 3 advanced abdominal pregnancies duration of amenorrhoea was 11, 10 and 7 months respectively. Vaginal bleeding before or after admission was present in 80 cases. In few cases there was history of abnormal menstruation. Two cases having menstrual irregularities had dilatation and curettage

done elsewhere and later were admitted in this hospital for ectopic pregnancy. One case had a dilatation and curettage in our hospital for a similar complaint, patient collapsed within 3 hours showing signs of internal haemorrhage. On immediate laparotomy ruptured ectopic was detected.

Another important sign which helped in clinching the diagnosis was rising pulse during period of observation. It was detected in 32 cases. We found it to be one of the most characteristic signs of tubal rupture and it

has also been emphasised by Wore and Winn.

Progressive anaemia was noted in 48 cases. Sudden fall in haemoglobin percentage and red blood cell count, without much change in the clinical picture, proved to be of great value to us. Eastman too has found this as an important sign of blood loss. Excruciating pain on moving the cervix was present in 55 cases. This was one of the most important diagnostic physical signs, even in the absence of a palpable adnexal mass.

Correct diagnosis as shown in Table IV, was made in 78 cases on admission. There were 121 cases of suspected ectopic gestation and wrong diagnosis was made in 19 cases. One hundred and fourteen cases were operated upon. Of these, 100 cases were definitely ectopic, while, in the remaining 14 cases, 13 had some other pelvic pathology as depicted in Table IV, giving conventional clinical picture of ectopic gestation, while one case revealed no pelvic pathology at all.

Clinical similarity between tubal abortion or rupture and rupture of corpus luteum cyst was first recognised by Helban in 1915. Eastman states that the pre-operative diagnosis of ruptured tubal pregnancy is shown at operation to be wrong in about 20% of cases. Among all the ectopic pregnancies detected at operation pre-operative diagnosis is something otherwise in about 20% cases.

Diagnosis of ectopic pregnancy was made in almost all the cases by clinical examination and vigilant observation. Examination under anaesthesia was done in only 6 cases. Culdocentesis was done in 14 cases, but was positive in 9, negative in 2 and false positive in 3 cases. In these last 3 cases, laparotomy revealed ruptured corpus luteum cyst in 2 and twisted ovarian cyst in one. Beacham, Collins *et al.*, Armstrong and his colleagues have found colpopuncture and colpotomy as invaluable diagnostic measures. Caldwell (1956) Parkar (1957) and Luci (1953) advocated routine colpotomy. Cherny,

TABLE IV
Diagnosis

Total suspects of tubal ectopics	121		
Correct preoperative diagnosis	78		
Wrong diagnosis	19		
		Pelvic inflammation	15
		Threatened abortion	1
		Ovarian cyst	5
Mistaken diagnosis	14		
		Normal pelvis	1
		Ovarian cyst	3
		Broad lig. fibriod	3
		Ruptured corpus luteum cyst	2
		Hydrosalpinx	1
		Pelvic inflammation	3
		Pelvic abscess	1
Not diagnosed	2		

George — Wilbanks and Peter advocate colpotomy not only to establish diagnosis but in many instances to do the necessary surgery for ectopic operation through the same incision. Culdoscopy, radiography for haemoperitoneum done by Pierre Porcher, Guston cloud and Simon (1961), hysterosalpingography done by Nusset, Netter and Dupay (1961) have been advocated but none of these were tried in the present study as no facilities are available to us. These investigations serve merely as corroborative evidence to confirm diagnosis in doubtful cases. Moreover urgency of the condition is such that there is no time to think of doing any elaborate procedure and the treatment is not modified by these investigations. Primary diagnosis should always be made on clinical examination only. However, if there is any doubt regarding diagnosis of an adnexal mass in association with the history suggestive of tubal pregnancy, conservatism in the form of vigilant observation in a hospital is justified and period of such watchfulness should be individualised.

On admission blood group, Rh and haemoglobin percentage total and differential white blood count were carried out as a routine in most of the cases in this series but total white cell count and erythrocyte sedimentation rate were found to be of no significance in this study. There were 5 cases having haemoglobin less than 30 per cent while there were 29 with haemoglobin between 30 and 50%.

Clinical types of ectopic pregnancy encountered in the present study are shown in Table V. There were 50 cases who came to us as acute ecto-

TABLE V
Clinical Types of Ectopics

Clinical types	No.
Tubal	84
Acute	47
Subacute	29
Chronic	18
Advanced secondary abdominal pregnancy	2
Accessory uterine horn	1
Ovarian	3
Postmortem diagnosis	1
	2
Total	186

pics, but only 14 cases were in a state of shock. Ten cases were operated upon within 2 hours of admission, 20 cases were observed between 2-6 hours, 27 cases between 6-24 hours and 31 were operated after observation of 24 to 72 hours. There were 14 cases, including 2 cases of advanced abdominal pregnancy and 2 which were not diagnosed, which were kept under observation for more than 72 hours. Initial diagnosis was not made as ectopic in these cases.

Management

Ectopic pregnancy should be treated promptly and surgically. As many as 14 cases were admitted in a state of shock or developed it thereafter. It has been proved that an essential part of treatment is replacement of blood loss, but some think that unless the bleeding tube is clamped, blood transfusion is secondary only to operation in reducing maternal mortality. Blood transfusion was given to 48 cases, 32 patients did not require any blood while in 22 cases it is not recorded.

General anaesthesia was used in 52 cases, spinal in 44 cases; five patients

had spinal as well as general, whereas 6 patients who were severely shocked were operated upon under local anaesthesia. No record is made in 4 cases.

On laparotomy, rupture of pregnant tube was noted in 50 cases, tubal abortion in 35 cases and tubal mole in 7 cases. There were 2 cases of advanced abdominal pregnancy and 3 cases of accessory horn pregnancy; rupture was found in 2, and one case with history of 7 months' amenorrhoea had concealed accidental haemorrhage requiring hemihysterectomy. In one case pregnancy occurred in the right ovary. Two cases of tubal rupture were diagnosed on postmortem examination.

Surgical Procedures

Forty-eight cases had total salpingectomy and 15 cases had partial salpingectomy done. Salpingo-oophorectomy was performed in 31 cases. Excision of horn was done in 3 cases, while in both cases of advanced secondary abdominal pregnancy, sac was excised along with subtotal hysterectomy in one case. Subtotal hysterectomy was also done in the case of rupture of angular pregnancy as suturing was not feasible. Secondary to primary procedure, there were

a number of other operations performed as shown in Table VI.

In all cases of ectopic pregnancy, a complete salpingectomy should be carried out. It is unwise to leave behind a partial tube as a potential site for a second ectopic on the same side. These segments do not remain patent and lose peristaltic action. Jeffcoate (1955) believes in salpingectomy with ipsilateral oophorectomy so that chances of future pregnancy are enhanced, because all the subsequent ova will originate from the ovary having its oviduct adjacent to it and chances of repeat ectopic due to external transmigration are nullified. Bender in 1955, also produced statistical evidence that the fertility was in fact higher following salpingo-oophorectomy rather than salpingectomy alone.

There are many authors namely Pentii (1961) William Stromme, Mc Kelvey, Douglas and Michel Mints who have reported cases concerning conservative surgical treatment in tubal pregnancy. Different forms of operations as exeresis tubae either after tubotomy or expressio ovi or resectio tubae with anaestomosis, salpingotomy and insertion of polyethylene by post-operative hysterosalpingography. They feel that by

TABLE VI

Surgical Procedures	No.	Additional Surgery	No.
Total salpingectomy	48	Plication round ligament	12
Partial salpingectomy	15	Ovarian cystectomy	4
Salpingo-oophorectomy	31	Appendectomy	2
Excision horn	3	Salpingectomy	6
Excision sac	2	Salpingolysis	2
Subtotal hysterectomy	1	Excision hydrosalpinx	1
Not operated	2	Subtotal hysterectomy	1
Total	102	Total	28

conservative surgery tubal pregnancy can be followed by uterine pregnancy though there are few instances of recurrence of ectopics. The success of these operations depends on complete haemostasis and asepsis which can hardly be expected in acute emergency operation for ectopic. Many disagree with this. They advise complete removal of gravid tube. Conservative surgery should only be done if the gravid tube is the only tube present.

The place of additional surgery like appendicectomy along with operation of ectopic gestation is a disputable point. In the presence of gross bleeding it is inadvisable to undertake appendicectomy even in the hands of good surgeons. Similarly removal of an infected salpinx from the opposite side is dangerous for fear of peritoneal spill in the presence of excellent culture medium. In cases of slow leaking ectopics where the general condition of the patient is good, appendicectomy can easily be done. In this series it was carried out in 2 cases of subacute ectopic where patients were in a good state.

Mortality and Morbidity

There were very few complications in these cases. Temperature was elevated from 100-102 degree F in 15 cases, persisting not more than 24-36 hours, probably due to absorption of peritoneal blood. Eight cases had wound sepsis and one patient had a gaping wound which healed by secondary intention. There was one case who developed thrombophlebitis after venesection. One patient had temperature of 104F with urticarial rash all over body, whether due to

penicillin or blood reaction it is difficult to say.

There were 3 cases in a state of severe shock at the time of operation and required nor-adrenalin drip for 24-48 hours to maintain their blood pressure. One of these 3 patients subsequently conceived and delivered normally.

In this series there were 3 maternal deaths, giving an overall mortality of 2.9%. In two cases there was failure of diagnosis. One case was under treatment as biliary colic and another patient was being treated conservatively as acute appendicitis. Both these patients collapsed with signs of internal haemorrhage and were diagnosed on post-mortem examination. Third case of this series died on the 7th post-operative day, after developing rash and hyperpyrexia.

Follow up

Unfortunately follow-up is not satisfactory. One patient came back with a repeat ectopic. Ten cases had normal vaginal deliveries. One case of advanced secondary abdominal pregnancy required lower segment caesarean section for breech presentation. Four patients had 5 abortions and one patient had threatened abortion at the 3rd month but delivered normally at term. One patient had an abortion of 3 months' gestation, 5 months after left salpingectomy for ectopic. She conceived soon after and delivered vaginally; right salpingectomy was done for puerperal sterilisation in January 1965.

Conclusion and Summary

1. One hundred and two cases of

- ectopic gestation are reported.
2. Relation of age, parity, sterility and reference to incidence is reviewed.
 3. Symptom-complex and physical findings are discussed.
 4. One hundred and fourteen cases of suspected ectopic were subjected to laparotomy, and 78 cases had correct preoperative diagnosis at the time of laparotomy.
 5. Ectopic gestation often presents a classical picture, but in many diagnosis is made at the time of laparotomy.
 6. In all cases Rh factor and blood group should be known and availability of blood is mandatory.
 7. Laboratory tests should be done for the evaluation of general condition of the patients but are not essentially reliable.
 8. Operation should be performed without delay.
 9. Factors leading to fatality are:
 - i. Failure of diagnosis.
 - ii. Delay in surgery.
 - iii. Delay in adequate blood replacement.
 - iv. Patient's delay in seeking medical aid.
 - v. Too extensive elective surgery at time of laparotomy.

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