A STUDY OF ECTOPIC PREGNANCY

by

ARVIND N. SARAF,* M.D., D.G.O., D.F.P.

and

RAJEE S. IYER, M.D., D.G.O., D.F.P.

Ectopic pregnancy has always been the centre of clinical interest to gynaecologists and abdominal surgeons alike because of its varied clinical manifestations. As differential diagnosis of acute abdominal emergencies in females one has to keep in mind the condition and while reviewing ectopic pregnancies from time to time intricacies of the problem involved are brought out.

Material

From 1st January 1963 to 31st December 1966 there were 86 cases of ectopic pregnancies, including abdominal pregnancies, at K.E.M. Hospital, Bombay. During the same period there were 18,155 pregnancies giving an incidence of ectopic pregnancies as 1:211. Beacham *et al* (1955) give it as 1:139 and Stromme *et al* (1962) 1:214. Marchetti *et al* give the same as 1:219.

Age Incidence

In the present series, the oldest patient was 41 years old and the youngest was 18 years old. The commonest age group was between 26 to 30 years.

*Tutor, Dept. of Obst. & Gynec., K. E. M. Hospital, Parel, Bombay 12.

Paper read at the 14th All-India Obstetric and Gynaecological Congress held at Nagpur on 26/28th November 1967.

Parity

Thirteen cases were nulliparae while 72 were parous patients. One patient had history of 4 repeated abortions without a living child.

Infertility

There were 36 cases with history of primary or secondary infertility giving an incidence of 41.8 per cent which is very significant.

Previous operations: Two patients had undergone ventrisuspension, 2 had appendicectomy, and 2 had a history of previous ectopic pregnancies. It is interesting to note that one patient had undergone puerperal Madlener's sterilisation in the past and developed ectopic pregnancy later on.

Clinical Symptoms

Table 1 shows the various presenting symptoms in our cases. The chief symptoms were amenorrhoea, pain in lower abdomen and abnormal bleeding per vaginam.

TABLE I
Symptomatology

	Symptoms	No. of cases
1.	Pain in abdomen	69
2.	Bleeding per vaginam ..	51
3.	Amenorrhoea	50
4.	Fainting attacks	16
5.	Pressure symptoms:	4
	Dysuria ..	2
	Tenesmus ..	2

(1) *Amenorrhoea:* Fifty patients presented with amenorrhoea out of 86 cases. Three patients had lactational amenorrhoea of from 6 to 10 months duration. This finding is important because Iffy (1961) has stressed that occurrence of ectopic pregnancy during lactational amenorrhoea is unusual.

(2) *Pain in lower abdomen:* It is a very important symptom and was present in 80.2 per cent of our cases. Its presence should always arrest our attention and make us think of the possibility of ectopic pregnancy. Its character varies from dull ache to sharp, severe stab-like pain. The pain is always due to some bleeding either in between the muscle fibres or into the lumen of the fallopian tube causing its distension or bleeding into peritoneal cavity leading to peritoneal irritation. A small number of cases also complain of shoulder pain due to irritation of the diaphragm, but we had no case complaining of shoulder pain.

(3) *Bleeding per vaginam:* Abnormal vaginal bleeding is usually but not invariably present, but it is not a prominent symptom. Amount of vaginal bleeding is small but excessive blood loss per vaginam does not exclude the possibility of ectopic pregnancy.

Clinical Findings

Twelve patients were admitted in a state of shock. The presence of lower abdominal pain and tenderness and pelvic findings of mass or fullness, tender on palpation, in a collapsed patient suggests the diagnosis of ectopic pregnancy unless proved otherwise. In such cases a laparotomy is performed even without waiting for colpopuncture after resuscitating the patient.

Per abdomen, tenderness was present in 28 cases and tenderness and guarding were present in 14 cases. A mass palpable in lower abdomen was present only in 7 cases.

Tenderness on vaginal examination in the fornices or on movement of the cervix was present in all patients. In addition, a mass was palpable per vaginam in 57 cases or 66.5 per cent.

Diagnostic Procedures

Haemoglobin per cent, R.B.C. and W.B.C. count, E.S.R. and blood grouping and cross matching are routine important investigations. Low haemoglobin percentage and/or falling haemoglobin concentration on successive occasions is significant. Leucocytosis and raised E.S.R. are associated with pelvic infection but can be present in an ectopic pregnancy, as in 25 cases in the present series. Colpopuncture is a very important diagnostic measure. It was positive in all cases where it was done, except two. In one patient, the needle punctured the rectal wall so there was no blood on aspiration. In the other case, there were adhesions in the pouch of Douglas resulting in doubtful positive result.

Culdoscopy was tried in 3 cases of ectopic pregnancies. One had intact tubal pregnancy while the other two had haematosalpinx. Pregnancy test and dilatation and curettage were not tried for diagnostic purposes because of the doubtful value of pregnancy test, and in the presence of ectopic pregnancy curettage can be dangerous because it may cause rupture of

ectopic pregnancy and profuse bleeding. This occurred in one of our cases who was thought to be a case of dysfunctional haemorrhage.

Diagnosis:

In 66, or 76.9 per cent, of patients ectopic pregnancy was correctly diagnosed while in 9 patients it was considered as a differential diagnosis. Out of 3 cases of abdominal pregnancies, 2 cases were clinically diagnosed as abdominal pregnancy, while in one patient the clinical diagnosis was concealed accidental haemorrhage. In this patient abdominal pregnancy was kept in mind as a differential diagnosis. Three patients of ectopic were diagnosed as dysfunctional haemorrhage. One of them was taken up for dilatation and curettage and the patient collapsed on the table. At this time ectopic pregnancy was suspected and laparotomy subsequently confirmed the diagnosis.

In 4 patients the clinical diagnosis was tubo-ovarian mass. Two of these had hydrosalpinx formed in the other tube, while in 1 case there was associated fibromyoma of the uterus.

In 2 patients impacted fibromyoma was diagnosed but they turned out to be cases of old ectopic pregnancy with pelvic haematocele.

Anaesthesia

General anaesthesia was given in 63 patients, spinal anaesthesia was given in 21 patients, while in 2 patients local anaesthesia was used. Although general anaesthesia was the anaesthesia of choice, spinal was given where the patient's general condition was good.

Operative Findings

Location of ectopic pregnancy was mentioned in detail in 38 cases out of 86 patients and is shown in Table 2. Implantation was most frequent in the distal two-thirds of the tube. In two patients with pelvic haematocele the tube was so disorganised that exact location of ectopic was not possible.

TABLE II

Site of ectopic pregnancy

Ampulla and infundibulum ..	22
Isthmus	6
Interstitial	5
Abdomen	3
Cornual	2
Total	38

Table 3 shows the condition of fallopian tubes having ectopic pregnancy. Marchetti *et al* (1946) reported that tubal abortion was commonest i.e. 53.2 per cent, while tubal rupture was 24.1 per cent.

TABLE III

Condition of fallopian tube bearing ectopic pregnancy

Tubal rupture ..	16	(38.0 per cent)
Intact unruptured ectopic	1	
Tubal abortion ..	17	(40.4 per cent)
Haematosalpinx ..	8	
Total ..	42	

Operative Treatment

This is shown in Table 4. Total salpingectomy is the operation of choice. Conservative operation on the tube is done where the affected tube is the only one present. Partial salpingectomy with salpingostomy was done where the other tube was removed by previous operation.

Where the other fallopian tube was blocked due to previous in-

TABLE IV

Operative treatment

Total salpingectomy	60
Salpingo-oophorectomy	6
Partial salpingectomy + salpingostomy	2
Total salpingectomy + salpingostomy other tube	2
Bilateral salpingectomy	7
Salpingectomy and sterilisation ..	4
Hysterectomy	3
Excision of rudimentary horn ..	2
Total ..	86

fection, salpingostomy was performed. Salpingo-oophorectomy was performed where the ovary and tube were adherent and difficult to separate. In multiparae who did not desire further childbearing tubal sterilisation was performed. Hysterectomy was performed in three cases. Two patients who had bilateral tubo-ovarian masses, and whose general condition permitted, underwent hysterectomy. One other patient had abdominal pregnancy. The placenta was implanted on the side of the uterus and on the broad ligament on one side. After removing the baby, the placental bed started bleeding so a hysterectomy had to be performed. In two patients appendicectomy was performed where it was chronically inflammed. In one patient an interstitial fibromyoma was removed.

Post-operative complications

There were only two patients who had complications after operation. One had pyrexia due to B. coli pyelitis which cleared after appropriate antibiotic therapy. The other patient developed post-operative basal pneumonia which responded to breathing exercises and streptomycin and penicillin.

Mortality

There was one death out of 86 patients, i.e. 1.1 per cent. The patient underwent the operation normally. Post-operatively, the ligature on the mesosalpinx slipped and there was profuse internal haemorrhage. The patient died before any operative intervention. After reviewing current literature, Eastman and Hellman (1966) state that out of 2,475 ectopic pregnancies there were 3 deaths or 1 death out of 826 ectopic pregnancies. They say that by correct diagnosis, proper blood transfusion and prompt operative treatment the mortality could be reduced still further. Mitha (1966) from Bombay has given 2.9 per cent mortality in her cases.

Comments

The incidence of ectopic pregnancies was similar to those quoted by others. Lower abdominal pain, tenderness, abnormal vaginal bleeding and amenorrhoea were important features.

In 3 patients there was lactational amenorrhoea. Iffy (1961) writes that patients with ectopic pregnancy do not conceive before their first post-partum period. His theory is that pregnancy in a fallopian tube occurs from ovulation before the missed period. The fertilised ovum is unable to suppress the subsequent menstrual period. This bleeding halts the progress of the ovum in the tube or it even expels the ovum in the fallopian tube.

In our cases incidence of infertility

was 41.8 per cent. Iffy states that two factors are responsible for closer association of infertility and ectopic gestation, one, tubal narrowing and the other, is, delayed ovulation. The first factor initiating ectopic pregnancy is well known. The delayed ovulation is due to hormonal dysfunction. The fertilised ovum from delayed ovulation is unable to suppress subsequent menstruation.

Posterior colpopuncture is the most important investigation. But in an occasional case exploration is justified where clinical symptoms and signs are suggestive but colpopuncture does not show blood in the peritoneal cavity.

Culdoscopy is becoming an important diagnostic tool in cases of ectopic pregnancy, while pregnancy tests and dilatation and curettage are less frequently tried. A patient having a small tender mass in the lateral fornix with a history of missed period is an ideal case for culdoscopic examination to exclude ectopic pregnancy. The case is too early to develop abdominal pain, vaginal bleeding, and attacks of giddiness. If operated at this time. the patient is in optimum condition of health, and conservative operation on the fallopian tube is possible.

Mortality of 1.1 per cent in our cases is considerable when compared with recent statistics (1 death in 826 ectopic pregnancies) given by Eastman and Hellman. Early diagnosis, sufficient blood transfusion and improved technique can considerably reduce the mortality.

Summary

1. A study of 86 cases of ectopic pregnancy during 3 year period at K.E.M. Hospital is presented.

2. Clinical features, operative findings and treatment are discussed.

3. Occurrence of ectopic pregnancy during lactational amenorrhoea in three patients is stressed in view of Iffy's hypothesis of aetiology of ectopic pregnancy.

4. Importance of culdoscopic examination in early cases of ectopic pregnancy is stressed.

5. There was 1.1 per cent avoidable mortality in the present series.

Acknowledgement

We are extremely grateful to Dr. B. N. Purandare, M.D., F.R.C.S.E., F.C.P.S., F.I.C.S., F.R.C.O.G., F.A.M.S., Chief of Department of Obstetrics and Gynaecology, K.E.M. Hospital and Dr. V. N. Purandare, M.D., F.R.C.S. for allowing us to study their cases. We thank Dr. S. V. Joglekar, M.S., F.C.P.S., Dean, K.E.M. Hospital for allowing us to present the hospital material.

References

1. Beacham, W. D., Webster, H. D. and Beacham, D. W.: Am. J. Obst. & Gynec., 71: 830, 1961.
2. Eastman, N. J. and Hellman, L. M.: William's Obstetrics, ed. 13, New York, 1966, Appleton-Century-Crofts, p. 557.
3. Iffy, L.: J. Obst. & Gynec. Brit. Comm. 68: 441, 1961.
4. Marchetti, A. A., Kuder, K. and Kuder A.: Am. J. Obst. & Gynec. 52: 544, 1946.
5. Stromme, W. B., McKelvey, J. L. and Adkins, C. D.: Obst. & Gynec. 19: 294, 1962.