

Ectopic pregnancy: Study of incidence and its risk factors at a tertiary care centre

Shruti Manchanda

Assistant Professor, Department of OBG, Surat Municipal Institute of Medical Education and Research, Surat-395010, Gujarat, INDIA.
Email: shruthimanchanda123@gmail.com

Abstract

Background: Ectopic Pregnancy is a life-threatening emergency commonly encountered by medical practitioners where diagnosis can often be missed. Any woman in the reproductive age group, presenting with lower abdominal pain or vaginal bleeding must raise the suspicion of an ectopic pregnancy to prevent mortality and morbidity. **Aim:** To evaluate the incidence and risk factor of Ectopic pregnancy at a tertiary care centre. **Methods:** This was a prospective study carried out from January 1998- April 1999 at a tertiary care hospital. Women who presented in the OPD and emergency department with clinical features of ectopic pregnancy and in whom diagnosis was confirmed during the clinical assessment and investigations were included in the study. **Results:** A 100 confirmed cases of ectopic pregnancy included for this study. The incidence of ectopic pregnancy in relation to the total number of deliveries was 1:78. The maximum number of cases 80% were seen in the age group 21-30 years. Higher incidence of ectopic pregnancy was found in women of 1-3 parity i.e. 66% while > 3 para 8% and nullipara 26%, Chronic ectopic pregnancy was found in 58% of the cases. The infertility (28%), inflammatory disease at tube (20%) and previous tubal surgery (20%) were the major predisposing factors. **Conclusion:** To prevent the morbidity and mortality the emphasis should be on early diagnosis i.e. in un ruptured stage. With gradually increasing availability of sonography, laparoscopy and blood transfusion facilities, conservative preferably laparoscopy surgery should be performed in patients and future fertility in patients who desire to have a child can be preserved. **Key words:** ectopic pregnancy, incidence, risk factors, laparoscopy

*Address for Correspondence:

Dr Shruti Manchanda, Assistant Professor, Department of OBG, Surat Municipal Institute of Medical Education and Research Surat-395010, Gujarat, INDIA.

Email: shruthimanchanda123@gmail.com

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INTRODUCTION

"Ectopic pregnancy" is like a fire alarm to the gynecologist and remains a dramatic gynecologic emergency and a persistent diagnostic challenge. The term "Ectopic Pregnancy" is derived from "NK-TOPUS" i.e. out of place. Thus it embraces all varieties of gestation- outside the uterine cavity. It is well recognised as a life-threatening emergency in early

pregnancy. The incidence of EP is around 1-2% in most hospital based studies.¹⁻⁶ Although the incidence of ectopic pregnancy is rising, the complications morbidity and mortality associated with it have been decreasing. This decline may be related to improved diagnostic techniques and improved management and care. Today Laparoscopy has opened up a new field of accurate diagnosis as well as surgery in these cases. Moreover non invasive diagnostic techniques like abdominal and transvaginal ultrasonography, radioimmunoassay of beta sub unit of HCG are very useful in diagnosis or ectopic pregnancy in its early stage.⁷⁻⁹ So the aim of the study is to compare the incidence of ectopic pregnancy in different age groups and parity and to evaluate the risk factors of it

MATERIAL AND METHODS

This study included 100 patients detected to have ectopic pregnancy in a Municipal Hospital of Mumbai. Approval of the Institutional ethics committee was obtained before

the start of the study. After the diagnosis of ectopic pregnancy was established, the following patient data were recorded.

1. Age
2. Parity
3. History of risk factors of ectopic pregnancy including —
 - a. Pelvic inflammatory disease
 - b. Contraceptive usage IUD / OC Pills
 - c. Abortions -- spontaneous MTP
 - d. Prior tube surgery
 - e. Assisted reproductive technology
 - f. Ovulation induction

g. Infertility

The diagnosis of ectopic pregnancy was based on history, clinical evaluation and following investigations:

- i. Hemoglobin, Blood Grouping and Urine pregnancy test.
- ii. Abdominal paracentesis.
- iii. Serum Beta HCG.
- iv. Ultrasonography
- v. Diagnostic Laparoscopy

Data was entered in MS excel spreadsheet and analysed using SPSS software version 19.0. Data was compiled as frequency and percent.

RESULTS

The present study is based on the evaluation of the different parameters in the patients of ectopic pregnancy admitted to a Municipal Hospital of Mumbai from January 1998- April 1999 . Based on our study, Incidence of ectopic pregnancy in the present series in relation to the total number of deliveries is 1: 78 during 16 months period. The total number of deliveries was 7832 during the study period.

Table 1: INCIDENCE OF ECTOPIC PREGNANCY IN RELATION TO VARIOUS AGE GROUPS

AGE GROUPS IN YEARS	NO OF CASES	PERCENTAGE
16-20	6	6
21-25	34	34
26-30	46	46
31-35	10	10
36-40	4	4

As shown in Table No 1, Maximum cases are seen between age group 26- 30 years i.e. 46% and in 21-25 years i.e. 34% (total 80%) in age groups (21-30 years). 10% incidence is found in age groups 31-35 years while age groups 16-20 years and 36-40 years have 6% and 4% respectively. Maximum incidence of ectopic pregnancy was present in multiparous women. Parity between 1-3 constitutes 66% of the incidence and greater than 3 constitutes 8%. Out of 26 cases in Nulliparous, 20 cases are of infertility

Table 2; INCIDENCE OF ECTOPIC PREGNANCY IN RELATION TO PERIOD OF AMENORRHEA

PERIOD OF AMENORRHEA(WEEKS)	NO OF CASES	PERCENTAGE
4-6	26	26
7-9	32	32
10-12	4	4
No history of amenorrhoea	36	36
Lactation amenorrhoea	2	2

Table No. 2 shows most of the cases are terminated during 4-12 weeks of gestation In 36 cases of ectopic pregnancy there is no history of amenorrhoea Regarding types of ectopic pregnancy, Out of 100 cases 58 cases (58%) were of chronic type and 34 cases (34%) of acute.Type 22 cases of chronic ectopic pregnancy presented with an acute onset.

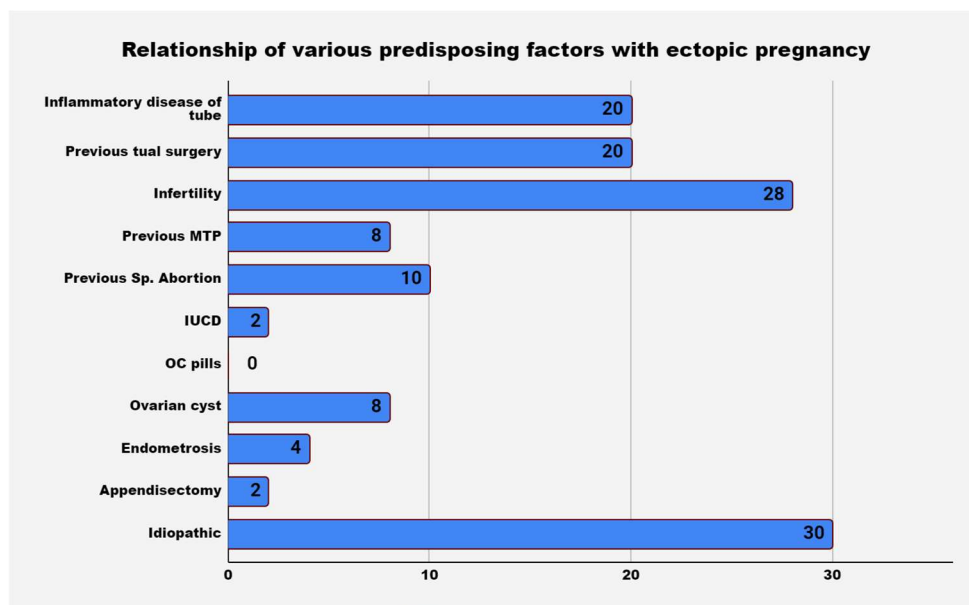


Figure 1: shows the incidence of various factors associated with ectopic pregnancy

In 70 cases out of 100 cases of an ectopic pregnancy some factor leading to or associated with ectopic pregnancy was found.

Infertility is associated with Maximum number of Cases (28) of which 12 cases is secondary infertility while the rest 16 are primary infertility

Table 3: showing the various factors associated with primary infertility and ectopic pregnancy

Sr. no	FACTORS ASSOCIATED WITH PRIMARY INFERTILITY AND ECTOPIC PREGNANCY	NO. OF CASES	PERCENTAGE
1	Inflammatory disease of the tube	20	36
2	Tuboplasty	4	7
3	Ovulation Induction	16	28
4	Assisted reproduction	4	7
5	Endometriosis	8	14
6	Ovarian cyst	8	14
7	No associated factors	16	28

Only in 8 out of 28 cases no associates' factor with primary infertility and ectopic pregnancy was found. Maximum cases 36% were associated with inflammatory disease of the tube, which causes primary partial tubal occlusion. Following this is associated ovulation induction with clomiphene. 4 cases each of endometriosis and ovarian cyst were also found to be associated with ectopic pregnancy. An unfortunate case was a patient who had four associated factors. These were endometrial tuberculosis with complete treatment taken tuboplasty (fimbrioplasty) done previous ectopic pregnancy and in vitro fertilization done. Inflammatory disease of the tube and previous tubal surgery were the next common risk factors constituting 20% each. Previous spontaneous abortion 10% previous MTP 8% ovarian cyst 8% followed next in succession. Only 2 cases with IUCD insertion, had ectopic pregnancy (Table 3).

DISCUSSION

The present study is carried out to make a detailed analysis of 100 cases of ectopic pregnancy admitted in a Municipal Hospital of Mumbai during the period of January 1998- April 1999. The results and other clinical aspects of ectopic pregnancy are compared with other studies. Incidence of ectopic pregnancy varies widely with different studies. The highest incidence amongst other series is seen in Tsai HD and associates (1995) 1:52¹⁰. In the present study, the incidence was maximum i.e 1:78 compared to previous studies which showed the rate of ectopic pregnancy was low.¹¹⁻¹³ The probable causes of rising incidence is due to:

1. Increased number of intrauterine contraceptive device users.
2. Reconstructive tubal surgery
3. Increased tubal sterilization operations.

4. Facility of Assisted reproduction like IVF-ET, GIFT.
5. Increased incidence of sexually transmitted disease and pelvic inflammatory disease.
6. Increase cases of medical termination of pregnancy.

And moreover, due to increased facilities of prompt and suitable diagnosis of ectopic pregnancy.

In our study, the highest incidence of ectopic pregnancy was observed during 21 to 30 years of age. It may be due to maximum number of conception occurring during the period.¹⁴ Incidence of various risk factors associated with ectopic pregnancy in various studies. Regarding risk factors, the most common etiological factor is chronic salpingitis observed in earlier studies which varied from 27 to 47.5%. However in the present series its rate is comparatively low only 20%. The probable reason is most of the cases are referred who come along with ectopic pregnancy for the first time and their past history about salpingitis is difficult to obtain due to ignorance and illiteracy. The second most common associated factor is infertility and is commonly due to salpingitis, total adhesive and partial tubal occlusion. Present study showed that previous tubal surgery was another major factor with 20% incidence. Amongst those tubal sterilization operation, our study showed 14% of the cases. Previous studies by Wilis Shiela and Mohanambal (1983) showed 13% ectopic pregnancies after tubal sterilization¹¹. Tatum and Schmidt showed 16% incidence of ectopic pregnancy after tubal sterilization.¹⁵ 24 of the ectopic pregnancy cases had history of tuboplasty done of which one was tubal recanalisation after tubal sterilization surgery and other was fimbrioplasty for primary infertility. Incidence of ectopic pregnancy occurring after tuboplasty is 7.7% from a study by M B Doyle *et al.*, (1991)¹⁶ while it was 4% in another study by Wilis Shiela and Mohanambal.¹¹ Present study showed 2% of patients had history of tubal surgery done for previous ectopic pregnancy. G Lavy, M P Diamond, A H De Cherney have reported an incidence of 12% after previous tubal surgery for ectopic pregnancy¹⁷. The reason for such low incidence is probably poor follow up of the patients to the hospital. Previous MTP and spontaneous abortion are responsible for 8% and 10% of the cases in present study. Wilis Shiela and Mohanambal also found 8% incidence after previous MTP.¹¹ Intrauterine contraceptive Device also increase the Occurrence of ectopic pregnancy 4.2% of the patients with ectopic pregnancy had intrauterine device in a study made by. G Lavy. *et al.*¹⁷ It is also suggested that the use of progesterone only as an oral contraception has increases the rate of ectopic gestation, no case had a history of using oral contraceptive pills¹⁸ The natural in

vitro fertilization embryo Transfer Registry reported 5% ectopic pregnancy rate in 1987 after assisted reproduction 4% of the present cases had endometriosis and also infertility. Melwyn D Mellow *et al.*, reported 5% ectopic pregnancy cased with history of appendectomy¹⁸. Kamala Khera had reported 3%.¹⁹ While in the present study it was 2%. Increased incidence following appendectomy operation is due to spread of infection and adhesions formation which may involve the fallopian tube. In present series the incidence is 2% which was comparable to the above series. Future studies are required to assess clinical utility of these markers.

CONCLUSION

In spite of its rising incidence, ectopic pregnancy has become much less dangerous than it used to be, thanks to the availability of highly sensitive pregnancy tests, abdominal and particularly vaginal sonography and above all high degree of suspicion among doctors in the diagnosis of ectopic pregnancy. Most of the time, due to lack of transport and non-availability of blood transfusion, maternal morbidity and mortality still remains high. For the same reason in most of the cases, conservative surgery is not possible. To prevent this kind of morbidity and mortality the emphasis should be one early diagnosis i.e. in the unruptured stage. With gradually increasing availability of sonography, laparoscopy and blood transfusion facilities, conservative preferably laparoscopy surgery should be possible in almost all patients and future fertility in patients who desire to have a child can be conserved

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