Ectopic Pregnancy – 5 Years Experience

Rose Jophy, Annamma Thomas, Arun Mhaskar

Department of Obstetrics & Gynaecology, St. John's National Academy of Health Sciences, Bangalore – 560 034.

Summary

This is a retrospective study of patients admitted to St. John's Medical College Hospital with ectopic pregnancy from January 1996 to December 2000. There were 93 patients with ectopic pregnancy during this 5- year period. The aim is to evaluate whether the recent advances in diagnostic technology could pick up ectopic pregnancies early enough to manage them conservatively. The study has also brought forth the age and parity distribution, the main risk factors, the clinical findings on admission, the operative findings and a comparison of period of amenorrhoea with the site of ectopic pregnancy

Introduction

The incidence of ectopic pregnancy has increased since the last two decades, the cause being attributed mainly to an increase in sexually transmitted diseases and the resulting tubal damage. However, there is a profound decrease in maternal mortality. This can be explained by the advances in early diagnostic technologies in the past 20 years, like the advent of sensitive assays of β hCG and the development of transvaginal ultrasound and Doppler studies. Treatment itself has evolved from surgical emergency into conservative surgical, medical or even into expectant management.

Material and Methods

93 patients were admitted to our hospital with diagnosis of ectopic pregnancy from January 1996 to December 2000. The case files of all these patients were carefully analyzed under different headings of age, Parity, h/o abortions, MTPs, IUCDs, LSCS, infertility, tubectomy, tuberculosis, previous ectopics and PID. The clinical findings, ultrasonography reports, and haemoglobin percentage on admission were also analysed. The treatment modality was reviewed and in cases of surgical management, the site of ectopic and the amount of haemoperitoneum were also noted.

Observation

Over the period of 5 years, we had 93 patients with ectopic pregnancy giving an incidence of 9.54 per 1000 live births as shown in Table 1a.

Table 1a.
Incidence of Ectopic Pregnancy

Year	No. of total live births	No. of ectopic Pregnancy	Incidence per 1000 live births
1996	1892	14	7.4
1997	2007	13	6.5
1998	1992	17	8.5
1999	1948	20	10.2
2000	1904	29	15.2
Total	9743	93	9.54

Primigravidas were 23.6%, 2nd gravidas 32.2%, 3rd gravidas 18.2% and 4th gravidas 13.9%. As parity increases, there is a decrease in incidence of ectopic pregnancy.

Table 1 b – Ectopic Pregnancy vs Parity

Parity	Number	Percentage
G1	22	23.6
G2	30	32.2
G3	17	18.2
G4	13	13.9
G5	4	4.3
G6	3	3.2
G7	3	3.2
G8	0	0
G9	1	1.1

Out of 93 patients, 28 patients (30%) were of age group less than 25 years and 40 patients (43%) were belonging to the age group between 26 and 30 years. Above 30 years, the incidence was low, i.e only 26%.

Table 1 c – Age vs Ectopic

Age	Number	Percentage
<25	28	30
26-30	40	43
31 – 35	19	20.4
>36	6	6.45

Table II – Risk Factors in Ectopic Pregnancy

Risk Factors	Number	Percentage
None	30	32.2
H/o PID	32	34.4
H/o Abortions	24	25.8
H/o MTP	18	19.35
H/o IUCD	20	21.5
H/o Infertility	14	15.1
H/o tubectomy	5	5.4
H/o tuberculosis	3	3.2
Previous ectopic	3	3.2
LSCS	7	7.5

Table II shows the risk factors in our patients. We did not find any risk factors in 32.2% of our patients. Among the main risk factors, PID stands first, 34.4%. The other contributors of tubal damage were IUCD usage, 21.5%, tubectomy, 5.4%, tuberculosis, 3.2%, previous ectopics 3.2% and previous LSCS 7.5%. There were 14 patients (15.1%) with h/o infertility, 24 patients (25.8%) with h/o spontaneous abortions and 18 patients (19.35%) with h/o MTP.

Out of 93 patients, 20 patients had no h/o amenorrhoea, of whom 15 had the ectopic at the isthmic region and 5 had at the ampullary region of the tube. 28 patients had 31 to 45 days of amenorrhoea, of whom 16 had ectopic pregnancy at the isthmic and 12 had at the ampullary region of the tube. 26 patients had 46 to 60 days of amenorrhoea, of whom only 4 had at the isthmic region and the rest 22 had the ectopic at the amullary region. As the period of amenorrhoea increases, ectopic pregnancy is seen more at the ampullary site. With more than 2 months of amenorrhoea, 14 patients had ectopic pregnancy at the ampullary region and only 2 patients had at the isthmic region. During this 5 year period, we had one histopathologically proved ovarian pregnancy, one cornual and one heterotopic pregnancy.

Table IV – Clinical Findings in Ectopic Pregnancy

Symptoms & Signs	Number	Percentage
Abdominal pain	86	92.4
Spotting PV	62	66.6
Giddiness	29	31.2
Shock	9	9.7
Tenderness	78	83.9
Distension	46	49.5
Cx excitation	52	55.9
Mass in the fornix	43	46.2
USG – Adnexal mass	62	66.6
Free fluid	58	62.4
Hb% - < 5 gm	21	22.6
5 – 8 gm	45	48.4
> 8 gm	27	29.0
Haemoperitoneium		
Nil	11	11.8
<500	22	23.2
500 – 1000	29	31.2
1000 – 2000	20	21.5
2000 – 3000	11	11.8

Table III – Incidence by Location and Period of Amenorrhoea

Period of Amenorrhoea	Isthmic	Ampullary	Ovarian	Cornual	Heterotopic
No amenorrhoea	15	5	0	0	0
31 – 45 days	16	12	0	0	0
46 – 60 days	4	22	0	0	0
61 – 90 days	2	14	1	0	1
> 90 days	0	0	0	1	0

This table shows the clinical findings on admission, 92.4% of patients came with h/o acute abdominal pain and 66.6% had spotting PV also. 31.2% gave h/o giddiness and 9 patients were brought in shock of whom one patient was in irreversible shock and subsequently she died. This was the only death due to ectopic pregnancy during this 5-year period.

Tenderness over the lower abdomen and in the fornices were the common signs in majority (83.9%) of patients. The classical sign of cervical excitation was present in 56% of patients. Ultrasonography diagnosed complex adnexal mass in 66% and free fluid in 62%. Haemoglobin percentage on admission was less than 5gm% in 22.6%, 5-8 gm% in 48.4% and >8 gm% only in 29% of patients. Haemoperitoneum was present in 88% of patients. There was no Haemoperitoneum in 12% of patients. Most of our patients (85%) were referred from outside with diagnosis of ruptured ectopic pregnancy. So our treatment modality was mainly surgical. Out of 93 patients 83 had salpingectomy, 6 patients had salpingostomy, 3 patients were treated with methotrexate and one patient had expectant management. The patient on expectant management was monitored with βhCG level and came down to normal in 8 weeks time.

Discussion

Over the past twenty to twentyfive years there is a remarkable change in incidence, epidemiological factors, diagnostic methods and management protocol of ectopic pregnancy. This study shows an increase in incidence over the years from 1996 to 2000; from 7.4/1000 live birth to 15.2/1000 live births as shown in table Ia. Various studies from India & abroad show an increased incidence of ectopic pregnancy. There is no uniformity of denominator in reporting the incidence of ectopic pregnancy in different studies. So it is difficult to compare the exact incidence of various studies. The denominator varies from thousand women between 15-44 years of age, thousand live births, to thousand total pregnancies (including live births, still births, spontaneous & induced abortions). The ICMR multi centric case control study in (1990) reported rates of ectopic pregnancy as 3.12 per 1000 pregnancies or 3.86 per thousand reported live births from 32 participating hospitals. D'mello et al (1988) reported an incidence of 1:214 pregnancies in 1988. The incidence of ectopic pregnancy in United States has been increasing steadily during the past 3 decades, from 4.5/1000 pregnancies in 1970 to 19.7 / 1000 pregnancies in 1992. In Norway it is increased from 12.5 to 18 per thousand pregnancies during 1979 to 1993. (Storcide et al 1997).

According to ICMR multicentric case control study (1990) of ectopic pregnancies, majority of women were young (mean age 28.01 4.9 years) and had low parity, (mean 28.0 + 4.9 years). This study also presents younger age and lower parity distribution, being 73% of them under 30 years of age and more than 50% of them gravida 2 or less, change in life style, early sexual activity, extra marital sex etc. can cause pelvic inflammation causing damage to the lining-epithelium of fallopian tube. Pelvic inflammatory disease following gonococcal, chlamydial, and other bacterial infections cause 3.3 to 6 fold increased risk of ectopic pregnancy. Relative risk based upon ICMR multicentric case control study (1990) was 6.4. There is an increased risk of ectopic pregnancy in nulliparous women undergoing infertility management. (Chow et al 1987). For nulliparous women, conception after at least one year of unprotected intercourse is 2.6 times more likely to be tubal. (Marchbanks et al 1985). Many cases of Chlamydia Salpingitis are indolent, cases may go unrecognized causing tubal damage and subsequent tubal pregnancy. Brunham et al (1986) has brought forth a strong association between Chlamydia infection and tubal pregnancy with serologic tests for Chlamydia. We identified 32% of our patients having no etiological factors. Probably an unnoticed chlamydial infection causing alteration in tubal motility may be the cause of ectopic pregnancy in these young patients. Documented history of PID was obtained in 34.4% of our patients. All these points bringforth the same fact into light that the recent change in sex-life, can cause pelvic inflammation and tubal damage in younger age groups causing more incidence of ectopic pregnancies in young nullt or low parity women. Therefore it is advisable to rule out chlamydial infection while investigating for infertility.

In this study the incidence of ectopic pregnancy was decreasing from 3rd gravida onwards, 3rd gravidas 18.2%, 4th gravidas 13.9%, 5th gravidas 4.3%, 6th gravidas 3.2% & 7th gravidas 3.2%. There was one 9th gravida with ectopic pregnancy and no 8th gravidas with ectopic pregnancy as shown in Table 1b. In this study we found decreased incidence of ectopic pregnancy with increasing age. Six patients (6.45%) above 36 years had ectopic pregnancy in our study. However it can not be concluded that as age increases incidence of ectopic pregnancy decreases. In the present era of nuclear families, the number of children is limited to one or two. Most women complete families before the age of 35 years and use effective contraceptive measures. So the number of intrauterine as well as extrauterine pregnancies are rare after the age of 35 years. Pulkkinen (1987) stated that aging results in progressive loss of myoelectrical activity along the fallopian tube, which may explain the increased incidence of tubal pregnancy in

perimenopausal women. We need an age-specific data of pregnancies both intrauterine and tubal to support this statement.

The other etiological factors contributing to the alteration of tubal motility in our study were tubectomy, tuberculosis, previous ectopics and use of intrauterine contraceptive devices. Among tubectomy procedures, electrocoagulation causes more tubal pregnancies (Mc. Cousland 1980). This is due to increased possibility of tubal recanalization and uteroperitoneal fistula formation. In our country, majority of women opt for postpartum sterilization and pomeroy's method by minilap is the procedure of choice and interval sterilization by laparoscopic application of fallop ring. In postpartum sterilization, there is an increased chance of tubal recanalization and occurrence of tubal pregnancies. Even though we had five tubectomised patients with ectopic pregnancy the type of procedures they had undergone were not clear from their records.

Incidence by location, fallopian tube accounts to 98.3% of all ectopic pregnancies (Chow et al 1987) of which ampulla having 79.6%, isthmus 12.3%, fimbrial end 6.2% and the remaining 1.9% at the interstitial region. Ectopic nidation outside the fallopian tube is very rare, only 1.4% abdominal, 0.15% ovarian and 0.15% cervical. (Breen 1970). This study shows similar pattern of distribution of location of ectopic pregnancy. Amenorrhoea is not an essential symptom to diagnose ectopic pregnancy. When there is no amenorrhoea, or less period of amenorrhoea the possibility of ectopic at the isthmial region is more. In cases of ectopic pregnancy at the isthmial region, rupture occurs earlier with greater amount of haemoperitoneum.

Romero et al (1988) highlighted the value of transvaginal sonography in case of ectopic pregnancy. With the presence of a complex adnexal mass ectopic pregnancy was seen in 83% of cases. In our study, sonography could diagnose complex adnexal mass in 66% and free fluid in 62%. But haemoperitoneum was present in 88% of patients. At the time of sonography haemoperitoneum might have been very minimal, and increased in amount while shifting the patient to the operation theatre. That may be the reason sonography was unable to pick up all the cases with haemoperitoneum. Since majority of our patients were referred from outside with established signs of ruptured ectopic pregnancy, they needed emergency laparotomy and radical surgical approach ie salpingectomy and blood transfusions as life-saving measures.

Conclusion

There is an increase in the incidence of ectopic pregnancy and a decrease in maternal mortality due to ectopic pregnancy during the past two decades. The treatment modality also have evolved from radical to conservative surgery and even to medical and expectant management. But the paradox noted in this institution, is that eventhough the early diagnostic tools available, we had to manage most of our patients as surgical emergencies, as they were brought late in the trial, with established diagnosis of ruptured ectopic pregnancy. It is therefore important that all the physicians should be sensitive to the fact that in reproductive age group any women presenting with pain in lower abdomen, diagnosis of ectopic pregnancy should be entertained irrespective of presence or absence of amenorrhoea, whether or not she has undergone sterilization.

References

1. Breen J L. Am. J. Obstet Gynecol. 106: 1004, 1979.
2. Brunham RC, Binns B, McDowell J. Paraskevas M. Obstet Gynecol 67:722, 1986.
3. Chow W. H, Dabing J R, Cates W Jr. Greenburg RS. Epidemiol Rev. 9:70, 1987
4. D'Mello, Manorama Rao HT, Raj AD, Pinto PI. J. Obstet Gynecol Ind 38:687, 1988
5. ICMR Task force project J. Obstet Gynecol Ind 40:425, 1990
6. Marchbanks PA, Coulam C B, Annegers J F. Fertil steril; 44:258, 1985.
7. Mc Cousland A. Am. J. Obstet Gynecol ; 136:97, 1980
8. Pulkkinen M O, Talo A. Clin. Obstet Gynecol 30; 164, 1987.
9. Romero R. Kadar N, Castro D, Jeanty P, Hobbins JC , De Charney AH, Am J. Obstet Gynecol 158:52k, 1988.
10. Storcide O, Veholmen M, Eide M, Bergsjo P, Sandvei R. Acta Obstet & Gynecol Scand 76; 345, 1997