



A Retrospective Study on Risk Factors and Clinical Presentation of Ectopic Pregnancy

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Abstract

Introduction: The objectives are to study the incidence, clinical presentations and risk factors of all cases of ectopic pregnancy that presented to our centre over a period of five years.

Method: A retrospective study was done on all cases of ectopic pregnancies who were admitted to the O&G dept. of Institute of Medical Sciences and SUM Hospital, under Siksha 'O' Anusandhan University, Bhubaneswar from January 2009 to December 2013. Information was obtained from the case notes, theatre and labour ward registers.

Results and Discussion: A total of 200 cases of ectopic pregnancy were diagnosed. The total no. of deliveries which took place during the study periods were 6084. The incidence of ectopic pregnancy in the present study was 3.2%. Risk factors were present in 35% of cases. Majority of the cases were ampullary pregnancies (66.5%). Ectopic pregnancy presented with diverse symptoms. Majority of the cases (39%) presented with pain abdomen. Abdominal pain is due to peritoneal irritation as most of the cases had rupture ectopics at the time of presentation. Death occurred in 3 cases which were mainly due to delay in referral.

Conclusion: The incidence of ectopic pregnancy in our centre was 3.2%. The most common identifiable risk factor was PID.

Keywords: PID, Ampulla, infertility, abortion, ectopic.

Introduction

Ectopic pregnancy is still one of the main causes of maternal mortality and morbidity ^[1]. Recognition of high risk cases, early diagnosis with the use of transvaginal sonography, serum beta-HCG, and laparoscopy have significantly improved the management of ectopic pregnancy. Any sexually active woman presenting with

abdominal pain and vaginal bleeding after an interval of amenorrhoea should be provisionally diagnosed as an ectopic pregnancy until proved otherwise. The incidence of ectopic pregnancy has quadrupled in the past two decades ^[2]. Several risk factors like tubal sterilisation, previous ectopic pregnancy, intrauterine devices, infertility, PID and prior abortions are some of the causative

factors in the development of ectopic pregnancy. The rise in incidence of ectopic pregnancy is multi factorial: Change in life style & sexual behaviour; increased incidence of PID due to polygamy & Polyandry; increase in facility for diagnosis; increase in health education awareness etc. This study was carried out to know the risk factors and clinical presentations associated with ectopic pregnancy to comprehend the treatment modalities.

Material and Methods

This is a retrospective study on all the cases of ectopic pregnancy who were admitted to the Obstetrics and Gynaecology department of institute of Medical Sciences and SUM hospital, Bhubaneswar, Odisha, covering the period from January 2009 to December 2013. Each record was scrutinized for age, parity and marital status. The other information extracted included risk factors, clinical presentations, intraoperative findings and outcome of ectopic pregnancies. A total of 200 cases of ectopic pregnancy were diagnosed. The total number of deliveries which took place during the study period were 6084.

Results

This study was undertaken in the department of Obst. & Gynaec. of Institute of Medical Sciences and SUM hospital, Bhubaneswar, Odisha from January 2009 to December 2013. The incidence of ectopic pregnancy in the present study is 3.2%. A majority of the cases (34%) were in the age group 26-30 years [Table-1].

As regards to parity 60% cases were in the group P0-P1, 39.5% were P2-P3 and one case was ≥ P4. Most of the cases were married at the time of presentation (97.5%) [Table1]. Risk factors were present in only 35% of cases. The common risk factor was PID. 7.5% cases had ectopic pregnancy following treatment for infertility. Three cases had previous ectopic pregnancies. Sterilization reversal was observed in 3.5% cases and in 5% cases tubal ligation had been done. One case had Koch’s abdomen [Table 2].

A majority of the cases were ampullary pregnancies (66.5%). 11% cases were in the isthmus. Tubal abortion was seen in 5% cases. There was one case of ovarian pregnancy and one case of heterotrophic pregnancy. 49% had left sided ectopic pregnancy and 47.5% had right sided ectopic pregnancy [Table 3].

Majority of the patients presented with pain in the abdomen (39%). 20% cases were in a state of shock at the time of admission. Two cases of chronic ectopic presented with retention of urine [Table 4].

Tenderness on cervical movement was present in 75% cases. Ultrasound revealed a ruptured ectopic pregnancy in 67.5% cases, an unruptured ectopic pregnancy in 5% cases, and an adnexal mass in 25% cases [Table 5].

The postoperative period was uneventful in majority of the cases. Three cases resulted in death. Ten cases needed ICU admissions [Table 6]. Cervical and abdominal pregnancies were not observed in the present study.

Table – 1 Socio – Demographic Profile

Age Distribution	Number	Percentage (%)
< 25 years	55	27.5
26-30 years	68	34
31-35 years	42	21
36-40 years	35	17.5
Parity		
P0 — P1	120	60
P2 — P3	79	39.5
≥ P4	1	0.5
Marital Status		
Married	195	97.5
Un Married	5	2.5

Table – 2 Risk Factors

RISK FACTORS	Number	Percentage (%)
PID	22	11
Previous abortions	10	5
Previous ectopic pregnancy	3	1.5
Infertility treatment	15	7.5
Koch’s abdomen	1	0.5
IUCD use	1	0.5
OCPill use	1	0.5
Tubal ligation	10	5
Sterilization reversal	7	3.5

Table – 3 Site of Ectopic Pregnancy

SITE OF ECTOPIC PREGNANCY	Number	Percentage (%)
Ampulla	133	66.5
Fimbria	13	6.5
Isthmus	22	11
Cornual	19	9.5
Tubal abortion	5	5
Ovary	1	0.5
Heterotrophic	1	0.5
SIDE OF ECTOPIC PREGNANCY		
Right Side	95	47.5
Left Side	98	49

Table – 4 Symptoms In Patients With Ectopic Pregnancy

Presenting Complaints	Number	Percentage (%)
Abdominal Pain	108	54
Abnormal Vaginal Bleeding	50	25
Shock	40	20
Retention of Urine	2	1

Table – 5 Type of Ectopic Pregnancy (Usg & Intra-Operative Findings)

	Number	Percentage (%)
Ruptured	135	67.5
Unruptured	10	5
Chronic	50	25
Tubal abortion	5	2.5

Table – 6 Complications

COMPLICATIONS	Number	Percentage (%)
Severe Anaemia	70	35
Shock	40	20
Death	3	1.5
ICU Admission	10	5

Discussion

Ectopic pregnancy still contributes significantly to the cause of maternal mortality and morbidity. The incidence of ectopic pregnancy in our study was 3.2%. The incidence in this study is higher as compared to other studies. The increased incidence in our study may be due to its tertiary status. Also the high incidence of suspicion and better diagnostic facilities may be contributory. The incidence of ectopic pregnancy varies from country to country. There is currently an increase

in the incidence of ectopic pregnancy globally. The incidence varies from 1 in 300 to 1 in 150 deliveries ^[1]. The increase in the incidence of ectopic pregnancy is associated with advances in assisted reproductive technology, tubal surgeries and female operative sterilization and earlier diagnosis with more sensitive methods of cases that otherwise could have resolved without causing any symptoms [Arup et al, 2007].

There were more number of cases in the age group 26-30 years. Our findings were similar to the findings of Igwegbe et al ^[2]. The possible reason for this finding is that in recent years, the age at first conception has increased, which ultimately contributes to the increased incidence ^[3]. Age has long been suspected to play a role in ectopic pregnancy risk, but studies have provided conflicting results ^[4]. In a study by Bouyer et al 34% cases were in the age group 30-34yrs ^[4]. There was a significant difference in the findings between our study and the findings of a study by Bouyer et al ^[4]. Al-Turki et al ^[5] also showed that majority of the patients (61.1%) were below the age of 30 yrs. Hamura et al ^[6] showed a majority of the cases (95%) were aged >25 yrs. 60% cases in our study are either nulliparous or Primi parous. The rest 40% were multiparous. The prevalence of ectopic pregnancy is mostly related to nulli parity ^[1]. A study by Gaddagi et al ^[7] concluded that 27% cases were nulliparous, 10.8% were primiparous and 62.2% were multiparous. Hamura et al ^[6] found that 15% women were nulliparous, 56% were Para one or para two. In a study by Igwegbe et al ^[2] multiparous patients were the largest (54.8%). These findings were quite different from that of our study. The gestational age at presentation could not be known since documentation of data was insufficient. Most of the women were married (97.5%). A study by Hamura et al ^[6] also showed an almost similar figure (93%).

Risk factors were found in only 35% cases. The commonest risk factor was PID. 11% cases had macroscopic evidence of PID at surgery. A study by Gaddagi et al ^[7] had almost similar result in

which 8.1% cases of ectopic pregnancy were due to PID. Our findings were different from the findings of Hamura et al ^[6] in which 43% cases had macroscopic evidence of PID at the time of surgery. The importance of infectious factors in ectopic pregnancy is well documented. Salpingitis and pelvic inflammatory disease increase the risk of ectopic pregnancy 6-10 fold ^[1]. It is likely that PID represents an important risk factor for tubal ectopic pregnancy in observations made by certain authors. In other studies ^[8,9] Igwegbe et al ^[2] showed previous induced abortions (37%) were the commonest risk factor, followed by pelvic infections (35.5%). But in our study only 5% cases had previous abortions. There are conflicting reports regarding the role which induced abortions play in the risk of ectopic pregnancy. The results concerning prior spontaneous abortions differ among studies. Spontaneous abortions may have a casual effect possibly mediated by infection. Holt et al ^[10] reported that induced abortions does not increase the risk of ectopic pregnancy. Prior induced abortions significantly increase the risk of ectopic pregnancy ^[1]. Three cases (1.5%) in our study had previous ectopic pregnancies. In a study by Gaddagi et al ^[7], 2.7% cases had previous ectopic pregnancy and in a study by Rose et al (2002), the incidence was 3.2% which is almost similar to our study. There are 10-15% chances of repeat ectopic pregnancy ^[1]. This is because tubal disease is nearly always bilateral and because there is a strong tendency for ectopic pregnancy to occur first on one side and later on the other side ^[11]. 7.5% cases of ectopic pregnancy occurred following infertility treatment. The incidence of ectopic pregnancy following infertility treatment is much higher as compared to spontaneous pregnancies. The association between infertility and ectopic pregnancy is complex as it can be a consequence of infertility as well as a cause. One case had ectopic pregnancy with IUD in situ. IUD prevents intrauterine pregnancy effectively but tubal implantation to a lesser extent. There is a relative increase in tubal pregnancies (7 times

more) should pregnancy occur with IUD in situ ^[1]. Tubal surgeries (tubal ligation and sterilization reversal) accounted for 8.5% cases. There is 15-50% chance of being ectopic if pregnancy occurs following tubal surgeries ^[1]. The risk of ectopic pregnancy after sterilization is greatest when laparoscopic electro destruction and partial salpingectomy are carried out ^[12]. Among 10,685 women studied, the risk of ectopic pregnancy within 10 yrs. after sterilisation was about 7 per 1000 procedures ^[12].

The tubes remained the commonest site of ectopic pregnancy in our review, the ampulla being commonly affected. Between 93 and 98% of ectopic pregnancies are located in the fallopian tube. Of these in turn 75% are located in the ampulla, 13% in the isthmus and 12% in the fimbriae. Ampulla was involved in 66.5% of cases in our study. This is similar to the findings of a study by Igwegbe et al ^[2] in which ampulla was the most commonly affected site of the tube. In studies by Gaddagi et al ^[7], Chow et al (1987) and Rose et al (2002), ampulla was also the most common site of ectopic pregnancy. There was one case of ovarian pregnancy in this study which was ruptured at the time of presentation. Ovarian pregnancies are rare. Only about 0.15%-3% of ectopics occur in the ovary ^[13]. Ovarian pregnancy accounts for 20-30% of all ectopics in IUCD users. There was one case of heterotrophic pregnancy in the present study. Only a few cases of heterotrophic pregnancies are reported (Aliyur et al, 2008, Pratt et al 1988). The once extremely rare condition of heterotrophic pregnancy is now more common with the advent of in-vitro fertiliser and embryo transfer. The incidence is about 1 in 8000 pregnancies at present ^[1]. There was no case of abdominal or cervical pregnancy in our study.

Abdominal pain was the most common presenting symptom in our study (54%). Abdominal pain was the most common presenting symptom in a study by Igwegbe et al ^[2]. These findings are similar to the findings of other studies ^[14]. Abdominal pain is due to peritoneal irritation and is not unusual since most of the patients presented with ruptured

ectopic. The pain could also be caused by tubal miscarriage and bleeding through the fimbrial end of the tube into the peritoneal cavity ^[15]. Ectopic pregnancy could present with diverse symptoms as shown in this study. Vaginal bleeding was observed in 25% cases. Orji et al ^[16] in a study have shown that about 10-20% of ectopic pregnancies may present without vaginal bleeding. There are no specific symptoms or signs that are pathognomonic of ectopic pregnancy. The absence of vaginal bleeding contributes to the late presentation and the consequent rupture ectopic pregnancy. Vaginal bleeding was observed in 35.8% of patients with ectopic pregnancy in a study by Igwegbe et al ^[2]. 43.2% of cases presented with vaginal bleeding in a study by Gadaggi et al ^[7]. 20% cases were in a state of shock at the time of presentation. Gaddagi et al ^[7] reported 40.5% cases in a state of shock. In a study by Hamura et al ^[6] 1/3rd of the women had shock on arrival. Two cases of chronic ectopic presented with retention of urine in our study.

Ectopic pregnancies were ruptured in 67.5% cases seen at presentation. These findings are almost similar to the findings of a study by Igwegbe et al ^[2] in which majority of the cases (80.6%) were ruptured ectopics. The findings in this study are also similar to the findings by Gaddaggi et al ^[7] in which 78.3% cases were ruptured ectopics at the time of presentation.

The post-operative period was uneventful in a majority of the cases. Ten cases required ICU admissions for various reasons. Death occurred in three cases (1.5%). All the three cases were referred ones. They were already in a state of shock on arrival at the hospital. Delay in referral was the main cause of death in these patients. The maternal mortality rate as published by numerous hospital based studies lie between 1% and 3% of all cases of ectopic pregnancy ^[2]. Early diagnosis before rupture is important in reducing mortality as well as preserving the potential for future fertility through conservative management ^[23].

Conclusion

The incidence of ectopic pregnancy in our centre was 3.2%. This increased incidence may be due to its tertiary status. All the cases were diagnosed with a high index of clinical suspicion and the USG findings corroborated to the diagnosis. The most common identifiable risk factor was pelvic inflammatory disease. Efforts should be directed at prevention and adequate treatment of PID and sexually transmitted infections. Early diagnosis before tubal rupture is important in reducing the morbidity and mortality associated with ruptured ectopic pregnancy. In vulnerable population the clinician should be "ectopic minded" for early diagnosis. According to authors' view over diagnosis of ectopic pregnancy is a reality but under diagnosis is a crime.

Conflict of Interest: None

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