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Ectopic Pregnancy - A rising Trend

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Abstract

Introduction: Ectopic pregnancy remains the leading cause of maternal death in early pregnancy. This retrospective analysis was done to determine the incidence, clinical features, risk factors, treatment, and morbidity and mortality associated with ectopic pregnancy in a tertiary care center.

Objective: To know the age group, parity, risk factors, clinical presentation, intervention required, and outcome of the ectopic pregnancy.

Materials and Methods: This retrospective study was conducted over a period of 1-year from January 1 to December 31, 2014 in Department of Obstetrics and Gynecology at Indira Gandhi Government Medical College, Nagpur, Maharashtra. A total of 52 cases reported during this frame with ectopic pregnancy and were admitted at our hospital through emergency or outpatient department. Data were collected in a preconceived format. Data were collected, tabulated and analyzed.

Results: Total numbers of vaginal deliveries were 2601 during the study period. Of which 52 (1.99%) were diagnosed as ectopic pregnancy. The mean age for this study was 29.1 ± 5.42. Previous abdominal/pelvic surgery/lower segment Cesarean section (32.69%), previous abortion/medical termination of pregnancy (32.69%), pelvic inflammatory disease (25%) and ovulation induction (23.07%) were major contributing factors responsible for incidence of ectopic pregnancy. The pain was a most consistent symptom in 86.53% women. A classical triad of ectopic pregnancy (pain, amenorrhea and bleeding per vaginum) seen in 53.84% women. The incidence of tubal ectopic was maximum, i.e., 50 (96.20%) cases out of 52 cases. Among tubal ectopic pregnancy the most common site was ampulla (53.84%). 44 (86.61%) cases were of ruptured ectopic pregnancies. Partial salpingectomy (65.38%) done in maximum women. No mortality and acute renal failure were found in our study among 52 patients.

Conclusion: Proper evaluation of pregnancy with associated risk factors and early diagnosis will help preserving tube and in turn her fertility and thus help in decreasing morbidity and mortality.

Key words: Ectopic pregnancy, Partial salpingectomy, Ultrasonography, Urine pregnancy test

INTRODUCTION

An ectopic pregnancy is a challenge for the obstetrician and gynecologist due to its bizarre clinical presentation. The diagnosis of ectopic pregnancy is complicated by wide spectrum of clinical presentations, from asymptomatic cases to acute abdomen, and hemodynamic shock.[1]

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An ectopic pregnancy is assuming greater importance because of its increasing incidence and its impact on women's fertility.[2,3] Ectopic pregnancy remains the leading cause of maternal death in early pregnancy.[4] With respect to management of ectopic pregnancy, there has been a tremendous technical advance. The early diagnosis and treatment of this condition over the past two decades have allowed a definitive medical management of unruptured ectopic pregnancy even before there were clinical symptoms in these high risk women.[5,6]

Ectopic pregnancy is one of the commonest causes of first trimester maternal death in developed countries and only follows induced abortion in sub-Saharan Africa.[7] There is considerable regional variation in its incidence

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and globally it has been on the rise over the past decades. Worldwide, ectopic pregnancy complicates 0.25-2.0% of all pregnancies.[7] In Europe and North America, the incidence is estimated at 2% of live births. In the developing world, however, data are few and often out of date. Nonetheless, ectopic pregnancy accounted for 0.5-2.3% of all live births in Africa from the 1960s to the mid-1980s.[8]

An ectopic pregnancy is the cause of pregnancy-related deaths. Its incidence is increasing and has been risen from 4.9/1000 pregnancies in 1970 to 9.6/1000 pregnancies in 1992.[9] The reason for this increase has not been fully elucidated, but the possible contribution of pelvic inflammatory disease (PID), ovulation inducing drugs, previous abdominal-pelvic surgeries and intra-uterine contraceptive device use has been cited as contributing factors.[10] The diagnosis of ectopic pregnancy has become more frequent during the last decades, but the incidence of ectopic pregnancy rupture has declined. This declined is due to quantitative human chorionic gonadotropin measurements, minimally invasive surgeries, and transvaginal ultrasonography (USG).[11] Early diagnosis reduces the risk of tubal rupture and allows more conservative medical treatments to be employed.[12]

This retrospective analysis was done to determine the incidence, clinical features, risk factors, treatment, and morbidity and mortality associated with ectopic pregnancy in a tertiary care center.

Aims and Objectives

1. To know the age group, parity, and risk factors with respect to the ectopic pregnancy
2. To know the clinical presentation and intervention required in ectopic pregnancy
3. To know the outcome of the ectopic pregnancy.

MATERIALS AND METHODS

This retrospective study was conducted over a period of 1-year from January 1 to December 31, 2014 in Department of Obstetrics and Gynecology at Indira Gandhi Government Medical College Nagpur, Maharashtra. It is a tertiary care center getting referrals from nearby cities and other hospitals. A total of 52 cases reported during this frame with ectopic pregnancy and were admitted at our hospital through emergency or outpatient department. Data were collected in a preconceived format. The case sheets of patients with ectopic pregnancy were traced through labor ward registers and operation theatre registers. Information regarding total number of deliveries during study period, details of demographic characteristics, presenting clinical symptoms and signs, parity, use of contraception, diagnostic tool used, detail obstetric history, risk factors for ectopic pregnancy, site of ectopic pregnancy, genital infections, line of management as well as morbidity and morbidity were obtained. Relevant investigations included complete blood picture, blood group, urine pregnancy test (UPT), and ultrasound. Based on thorough evaluation, type of management was decided. Data were collected, analyzed and tabulated.

Inclusion criteria's: All women with confirmed ectopic pregnancies.

Exclusion criteria: None.

RESULTS

Total numbers of vaginal deliveries were 2601 during the study period. Of which 52 (1.99%) were diagnosed as ectopic pregnancy. In all cases, urine pregnancy was done for provisional diagnosis. USG helped in 44 cases in diagnosing ectopic pregnancy. Gestational age ranges between 4 and 14 weeks, and the most frequent gestational age was around 6-8 weeks. Right sided ectopic (29 patients) were more common than the left side.

Table 1 depicts that maximum number of cases were above the age of 25, which is around 69.22%. This shows the maximum incidence of ectopic pregnancy in higher age group. The mean age for this study was 29.1 ± 5.42. The maximum incidence of ectopic pregnancy in the higher age group and with nulliparous.

Table 2 shows that previous abdominal/pelvic surgery/lower segment Cesarean section, previous abortion/medical termination of pregnancy (MTP), PID, ovulation induction, and use of intrauterine device were major contributing factors responsible for incidence of ectopic pregnancy.

Table 3 shows pain was most consistent symptom in 86.53% women. A classical triad of ectopic pregnancy (pain, amenorrhea and bleeding per vaginum) seen in 53.84% women.

Table 4 depicts that incidence of tubal ectopic was maximum which was 50 (96.20%) cases out of 52 cases of ectopic pregnancy. Among tubal ectopic pregnancy the most common site was ampulla (53.84%) followed by fimbrial (17.30%), isthmus (11.53%), cornual/interstitial (7.6%) and tubal abortion (5.7%). Two cases were at the extra tubal site, i.e., one was ovarian ectopic, and other was in the rudimentary horn of the bicornuate uterus.

Table 5 shows that 44 (86.61%) cases were of ruptured ectopic pregnancies, out of which amount of

Table 1: Demographic parameters

Age group (years)	Number of cases (%)	Gravida	Number of cases (%)	Parity	Number of cases (%)
<20	01 (1.9)	1	12 (23.07)	0	22 (42.30)
20-25	15 (28.84)	2	13 (25)	1	10 (19.23)
26-30	15 (28.84)	3	12 (23.07)	2	11 (21.15)
31-35	13 (25)	4	12 (23.07)	3	09 (17.30)
>35	08 (15.38)	>4	03 (5.7)	>3	00 (00)

Table 2: Distribution of cases according to risk factors associated with ectopic pregnancy

Risk factor	Number of cases	Percentage
Age>35 years	08	15.38
Tubal surgery/tubal ligation	05	9.6
Previous abortion/MTP	17	32.69
Previous ectopic pregnancy	03	5.7
PID	13	25
H/O tuberculosis	02	3.8
Oral contraceptive pill use	04	7.6
Intrauterine device	10	19.23
Ovulation induction	12	23.07
Previous abdo-pelvic surgery/LSCS	17	32.69

LSCS: Lower segment Cesarean section, MTP: Medical termination of pregnancy, PID: Pelvic inflammatory disease

Table 3: Distribution of cases according to presenting signs and symptoms

Sign/symptoms	Number of cases	Percentage
Pain	45	86.53
Bleeding per vaginum	34	65.38
H/O amenorrhea	42	80.76
Classic triad	28	53.84
Shock	27	51.92
Abdominal tenderness	37	71.15
Abdominal distension	27	51.92
Abdominal mass	10	19.23
Cervical tenderness	43	82.69
Mass felt through fornices	35	67.30

hemoperitoneum <500 ml found in 11 (21.15%) cases and ≥500 ml of hemoperitoneum in 33 (63.46%) cases.

Table 6 depicts that partial salpingectomy (65.38%) done in maximum women.

Table 7 gives an idea about the morbidity associated with ectopic pregnancy. Blood transfusion (≥2 pints) needed in 30 (57.69%) cases. 11 out of 52 patients required more than 10 days post-operative hospital stay. Among 5 patients with wound complication, 2 cases had burst abdomen, and 3 had wound gape. 7 patients needed immediate intensive care unit admission in the post-operative period. Out of 52 cases 27 (51.92%) cases required general anesthesia, 24 (46.15%) cases required spinal anesthesia and one required no anesthesia which was managed by a medical line of treatment. No mortality and acute renal failure were found

Table 4: Distribution of cases according to site of ectopic pregnancy

Site of ectopic pregnancy	Number of cases	Percentage
Ampulla	28	53.84
Isthmus	06	11.53
Fimbrial	09	17.30
Cornual/interstitial	04	7.6
Ovarian	01	1.9
Rudimentary horn	01	1.9
Tubal abortion	03	5.7
Heterotrophic/abdominal	00	00

Table 5: Distribution according to condition of tube and amount of hemoperitoneum

Condition of ectopic pregnancy	Number of cases	Percentage
Ruptured	41	86.61
Un-ruptured	08	15.38
Tubal abortion	03	5.7
Hem peritoneum <500 ml	11	21.15
Hem peritoneum ≥500 ml	33	63.46
No hem peritoneum	08	15.38

Table 6: Distribution according to line of management

Line of management	Number of cases	Percentage
Linear salpingectomy	01	1.9
Partial salpingectomy	34	65.38
Complete salpingectomy	10	19.23
Salphingo-oophorectomy	02	3.8
Milking	03	5.7
Uterine/corneal/horn reconstruction	02	3.8
Medical line of treatment	01	1.9

Table 7: Morbidity and mortality associated with ectopic pregnancy

Indicators	Number of cases	Percentage
Blood transfusion (≥1 pints)	30	84.61
Post-operative hospital stay (>10 days)	11	21.15
Post-operative wound complications	05	9.61
Require ICU admission	07	13.46
Require general anesthesia	27	51.92
Acute renal failure/UTI	00	00
Mortality	00	00

UTI: Urinary tract infection, ICU: Intensive care unit

in our study among 52 patients which gives information that early diagnosis and treatment can prevent severe morbidity and mortality in ruptured ectopic pregnancy.

DISCUSSION

The incidence of ectopic pregnancy was 1.99% of vaginal deliveries which is comparable to a similar study carried

by Khaleeque et al.[13] (1.3%). UPT and USG were done in 44 (84.61%) for confirmation which is comparable to study carried by Shetty and Shetty[14] (UPT - 87.1%, USG - 77%). Most frequent gestational age was around 6-8 weeks which is comparable to study carried by Khaleeque et al.[13] Right sided ectopic (55.76%) was more common then left in present study which is comparable to studies by Khaleeque et al.[13] (60%). Most common age group in this study was 20-30 years (57.68%) which is comparable to study by Khaleeque et al.[13] (57.68%). In present study, average age of patients was 29.1 ± 5.42. 12 (23.07%) patients were primigravida and rest 40 (76.93%) were multigravida in present study with similar results in study carried out by Khan et al.[15] (primi - 24.70% and multi - 75.30%). The incidence of nulliparous (42.30%) cases found higher compared to other studies such as in Gaddagi and Chandrashekhar[16] (27%) and Singh et al.[17] (20%). The reason for the disparity in results was increasing the incidence of infertility and abortion. Previous ectopic pregnancy and tubal surgery are strongest risk factors associated with the occurrence of ectopic pregnancy.[18] In present study, previous ectopic pregnancy found in 5.7% with comparable results in study carried by Yakasai et al.[19] (4.95%) which is consistent with the hypothesis that women with previous ectopic pregnancy has greater proclivity toward a subsequent ectopic pregnancy.[20] Tubal surgeries were carried out in 9.6% in present study which shows disparity among studies carried by Singh et al.[17] (40%) and Shetty and Shetty[14] (3.2%) due to variation in sample size. In present study, H/O previous abortion/MTP found in 32.69% cases with similar to study by Singh et al.[17] (32%). PID was found in 25% cases suggesting strong evidence that PID is responsible for the ectopic pregnancy. Similar results are seen by Yakasai et al.[19] (31.68%). History of tuberculosis found in 3.8% cases. In present study, 19.23% cases were using an intrauterine device (IUD) as a method of contraception. Combining oral contraceptive pills and IUD, 26.83% cases had ectopic pregnancy which is comparable with Khan et al.[15] (21.17%). Ovulation induction resulted in an incidence of ectopic pregnancy around 23.07% cases comparable to Gaddagi and Chandrashekhar[16] (16.21%). Previous abdominopelvic surgeries including caesarean sections were responsible for 32.69% of ectopic pregnancy similar to result by Khan et al.[15] (27.05%). Most common presenting symptom was pain in abdomen which was seen in 86.53% cases followed by history of amenorrhea (80.76%) were similar with Shetty and Shetty[14] (pain = 80.6%, amenorrhea = 77.4%). Bleeding per vaginum found in 65.38% cases which is comparable with a study by Yakasai et al.[19] (64.36%). Classical triad found in 53.84% cases which is comparable to Singh et al.[17] (60%). In present study, 27 (51.92%) cases presented to the hospital in shock. On clinical examination, it is found that abdominal tenderness present in 71.15% cases which is consistent with a study carried out by Gaddagi and Chandrashekhar[16] (70.3%). Abdominal distension found in 51.92% of patients. On abdominal palpation, abdominal mass was felt in 19.23% cases which is also seen in study carried out by Gaddagi and Chandrashekhar[16] (16.2%). Cervical motion tenderness noticed in 82.69% cases which is comparable with Gaddagi and Chandrashekhar[16] (75.7%). Adnexal mass felt in 67.30% cases which is comparable with Gaddagi and Chandrashekhar[16] (70.3%). In the present study, tubal pregnancy found in 90.27% cases which is comparable to studies carried out by Yakasai et al.[19] (89.11%). Most of the patients had ampullary ectopic (53.84%) pregnancy which is consistent with studies from Khaleeque et al.[13] (58.9%). The incidence of isthmic pregnancy was similar to study carried out by Khaleeque et al.[13] (7.7%). Fimbria (17.30%) found the second most common site of tubal pregnancy with a similar result of Khaleeque et al.[13] (15.4%). One case (1.9%) was with ovarian ectopic pregnancy similar to the single case found in study carried out by Singh et al.[17] (4%). Incidence of corneal/interstitial pregnancy was comparable to Khaleeque et al.[13] (10.3%). In the present study 5.7% cases had tubal abortion and one case was of ruptured horn pregnancy. Eight cases (15.38%) cases were of unruptured ectopic pregnancy. In the present study, salpingectomy required in 84.61% cases which is similar to that found in a study carried out by Yakasai et al.[19] (89.10%). Linear salpingectomy is done in 1.9% cases similar to study by Yakasai et al.[19] (1.9%). Salphingo-oophorectomy required in 3.8% cases which is comparable to the result of a study by Khaleeque et al.[13] (2.8%). The result of milking of the tube (5.7%) is similar to Gaddagi and Chandrashekhar[16] (5.4%). Medical line of the treatment with injection methotrexate was given in 1 (1.9%) patient similar to study by Khan et al.[15] (1.9%). One patient required horn excision and one patient of corneal pregnancy needed uterus reconstruction. 84.61% patients required intra or post-operative period which is comparable to study carried by Udigwe et al.[21] (94.4%). Post-operative wound infection found in 9.61% cases which is less compared to study by Khaleeque et al.[13] (25%). Out of 52 cases 27 (51.92%) cases required general anesthesia, 24 (46.15%) cases required spinal anesthesia. 21.15% patients were discharged after a ≥10 days stay. Fortunately, no mortality was reported in our study and study carried out by Shetty and Shetty[14] and Udigwe et al.[21]

CONCLUSION

In developing countries, a majority of hospital-based studies have reported ectopic pregnancy case fatality rate of around 1-3%, 10 times higher than those reported in developed countries. There is a rising trend in ectopic pregnancy due to early diagnosis by the availability of more sensitive methods such as hormonal test, transvaginal

sonography and laparoscopy. It is the most important cause of maternal mortality and morbidity in the first trimester. Proper evaluation of pregnancy with associated risk factors and early diagnosis will help preserving tube and in turn her fertility and thus help in decreasing morbidity and mortality.

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