Original Research Article

A study of incidence, risk factors of ectopic pregnancy and it's outcome with efficient management at peripheral tertiary care centre in Maharashtra

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Abstract

Background: Ectopic pregnancy is one of the few medical conditions that can be managed expectantly, medically or surgically. However, in the developing world it has been estimated that 10% of women of ectopic pregnancy ultimately die from the condition. Ectopic pregnancy still accounts for 4% to 10% of pregnancy-related deaths and leads to a high incidence of ectopic site gestations in subsequent pregnancies. It's prevalence in India is 1-2% but it accounts for 3.5-7.1% of maternal deaths. **Objectives:** The aim of this study was to determine and evaluate the incidence, clinical presentation, risk factors, and to find the management outcomes of ectopic pregnancies at Dr. S.C.G. Medical College, Vishnupuri, Nanded- 431 606, a tertiary care centre in Maharashtra **Materials and Methods:** This was a retroprospective study of ectopic pregnancies managed in Dr. S.C.G. Medical College, Nanded during the study period (January 1,2016 to December 31,2016). The medical records of the patients managed for ectopic pregnancy during the period under were reviewed. **Observations and Results:** The incidence of ectopic pregnancy was0.53%. Majority of patients 64.5% were in the age between 21 to 30 years. We encountered maximum cases in three and more issues 35.6% (21 cases).Tubal surgery was commonest predisposing factor and ampulla was commonest site (37.29%).Majority of cases underwent unilateral salpingectomy (74.6%).Classical triad was present in almost half of the patients. There were 55 (93.2%) ruptured cases of which 42 were hemoperitoneum. We did not encounter a single mortality. Out of total 55 ruptured pregnancies, 50% were within 7 weeks of gestation. Ampulla was commonest site for ruptured pregnancy with 36.36% cases. **Conclusion:** By reducing and identifying the risk factors and diagnosing the patient clinically or by USG at the earliest and treated with efficient surgical management and postoperative care.we can improve the prognosis so far as the morbidity,and mortality.

Key Words: ectopic pregnancy, Nanded.

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INTRODUCTION

Ectopic pregnancy is the implantation of a fertilized egg in a location outside of the uterine cavity, including the fallopian tubes, cervix, ovary, cornual region of the uterus, and the abdominal cavity which may cause massive haemorrhage, infertility, or death.[1] An ectopic pregnancy starts out in the unruptured state, which is when the mass is still small enough to fit in the fallopian tube. However, if left untreated for too long, the mass will continue to grow until it eventually gets so large that it will rupture the tube. All these treatments are forms of abortion and woman's chances of survival are very less if

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she does not abort.[2] Diagnosis of ectopic pregnancy has improved significantly due to advances in ultrasound technology, rapid and sensitive serum hormone assays, the development of EPUs and an increased awareness and understanding of the associated risk factors. Despite this, around half of the women with an eventual diagnosis of ectopic pregnancy are not diagnosed at their first presentation. Early diagnosis reduces the risk of tubal rupture and allows more conservative medical treatments to be employed. Currently, diagnosis in unruptured ectopic pregnancy is achieved using a combination of transvaginal ultrasonography and measurement of serum β-hCG concentrations. A laparoscopy or laparotomy can also be performed to visually confirm an ectopic pregnancy.[3] As per WHO reports the estimated worldwide prevalence of ectopic pregnancy is 1-2% and in India as per the statistics for ectopic pregnancy the number varies to 2, 74,099.The incidence of ectopic pregnancy among all pregnancies varies from 0.25-2.0% worldwide[4] and can occur in any sexually active woman of reproductive age. Ectopic pregnancy was reported in 0.91% of pregnant women (with no maternal deaths) in a study done at tertiary care centre in South India.[5]However the number tend to be more as there is a severe discrepancy is prevailing in Indian maintenance of statistics especially about gynecological diseases. Ectopic pregnancies have increased over the past 30 years, comprising at least 2% of all pregnancies. Contributory causes to ectopic pregnancy include pelvic inflammatory disease, tubal surgeries, sexually transmitted diseases, infertility, tubal abnormalities, intrauterine devices, and in utero exposure to diethylstilbestrol. Treatment of ectopic pregnancy has evolved to permit tubal salvage to maintain fertility. While methotrexate has proven efficacious in the medical treatment of ectopic pregnancy, human chorionic gonadotropin testing and vaginal ultrasound can aid in the timely diagnosis of 90% of ectopic pregnancies.[6] Chronic ectopicpregnancy is often an enigma and a correct diagnosis is frequently not made until exploratory laparotomy. Hemodynamic stability, chronicity of symptoms, and a high incidence of false-negative pregnancy tests and culdocentesis results are clinical characteristics distinguishing it from the more common acute ectopicpregnancy. Dense adhesions and occasional abscess formation are surgical features that characterize the chronic ectopicpregnancy[7]. Ectopic pregnancy is one of the few medical conditions that can be managed expectantly, medically or surgically. However, in the developing world it has been estimated that 10% of women admitted to hospital with a diagnosis of ectopic pregnancy ultimately die from the condition. Ectopic pregnancy is a considerable cause of maternal morbidity, causing acute symptoms such as pelvic pain and vaginal bleeding and long-term problems such as infertility.[8] Ectopic pregnancy still accounts for 4% to 10% of pregnancy-related deaths and leads to a high incidence of ectopic site gestations in subsequent pregnancies. Ectopic pregnancy accounts for 3.5-7.1% of maternal deaths in India.[5] This study was an attempt to estimate the burden of ectopic pregnancy in this tertiary care institute and to identify the risk factors so that the patients with risk factors to be effectively screened and diagnosed which will help to prevent the future complications.

MATERIALS AND METHODS

This was a retroprospective, cross sectional study of ectopic pregnancies managed in Dr. S.C.G. Medical College, Vishnupuri, Nanded- 431 606, a tertiary care centre in Maharashtra during the study period (January 1,2016 to December 31,2016). The medical records of the patients managed for ectopic pregnancy as well as the total birth record and gynaecological admission records during the period under was reviewed, and data were collected. Out of 11208 emergency admission there were 59 cases of ectopic pregnancies in which 55(93.36%) presented as ectopic ruptured pregnancies, presented as early diagnosis, either with ultrasonography or clinical findings.

OBSERVATIONS AND RESULTS

Table 1: Distribution of cases according to age

Age group (years)	Number of cases	Percentage (%)
<20	8	13.5
21-25	19	32.25
26-30	19	32.25
31-35	8	13.5
35-40	5	8.5

Table 2: Distribution of cases according to parity

Parity	Number of cases	Percentage (%)
Nulliparous	14	23.75
One issue	10	16.9
Two issues	14	23.75
Three and more issues	21	35.6

Table 3: Distribution of cases according to predisposing factor

Predisposing Factors	Number of cases	Percentage (%)
Pelvic Inflammatory disease	0	0
Infertility treatment	0	0
Previous Ectopic pregnancy	1	1.7
Tubal Surgery	12	20.35
Lower Segment Cesarean Section	0	0
IUCD insertion	0	0

Table 4: Distribution Of Cases According To Site Of Ectopic Pregnancy

Site Of Tubal Ectopicpregnancy	Number Of Cases	Percentage (%)
Cervical	2	3.39
Ampulla	22	37.29
Isthmus	19	32.20
Cornual	13	22.03
Ovarian	3	5.09
Total	59	100

Table 5: Distribution of cases according to Type of Surgery done to the patient

Procedure	Number of cases	Percentage
Milking	0	0
Partial Salpingectomy	7	11.8
Total Unilateral Salpingectomy	Right 27	45.8
	Left 17	28.8
Bilateral Salpingectomy	2	3.4
Salpingoophorectomy	2	3.4
Oophorectomy	4	6.8

Table 6: Distribution of cases according to presenting signs and symptoms

Sign/Symptoms	Number of cases	Percentage
Pain	58	98.3
Bleeding per vaginum	29	49.15
H/O amenorrhea	59	100
Classic triad	28	47.45
Shock	2	3.4
Abdominal tenderness	0	0
Abdominal distension	1	1.7
Abdominal mass	0	0
Cervical tenderness	59	100
Mass felt through fornices	0	0
Colpopun	0	0

Table 7: Distribution according to condition of tube and amount of hemoperitoneum

Condition of ectopic pregnancy	Number of cases	Percentage
Ruptured	55	93.2
Un-ruptured	1	1.7
Tubal abortion	0	0
Hemoperitoneum <500 ml	42	71.2
Hemoperitoneum ≥500 ml	13	22
No hem peritoneum	1	1.7
Not Mentioned	3	5.1

Table 8: Morbidity and mortality associated with ectopic pregnancy

Indicators	Number of patients (N=59)	Percentage (%)
Blood transfusion (≥1 point)	53	89.8
Post-operative hospital stay (>10 days)	0	0
Post-operative wound complications	0	0
Require ICU admission	2	3.4
Require general anesthesia	6	10.2
Acute renal failure/UTI	0	0

Table 9: Gestational age at rupture for specific sites (N=55)

Site	7 Weeks	8-12 Weeks	>12 Weeks
Cervical	1 (1.82%)	1(1.82%)	0 (0 %)
Ampulla	10 (18.18%)	8 (14.55%)	2 (3.64%)
Isthmus	15(27.27%)	3(5.45%)	0 (0 %)
Cornual	0(0%)	3 (5.45%)	9(16.36%)
Ovarian	2(3.64%)	1(1.82%)	0(0%)
Total	**28(50.91%)**	**16(29.09%)**	**11(20%)**

Table 10: Diagnostic methods

Method	Number	Percentage
Pregnancy test	59	100%
Ultrasound	59	100%

We conducted the study over a period of 1 year. The total numbers of emergency admission were 11208.The total number of ectopic pregnancies turned out to be 59. It gave an incidence of 0.53%. The highest numbers of patients, 64.5% were in the age between 21 to 30 years(32.25% each for age group21-25 years and 26-30 years) (Table 1). There were 8(13.5%) pregnancies below the age of 20 years. We encountered maximum cases in three and more issues 35.6% (21 cases), having one issue and nulliparous was 23.75% each (Table 2).Tubal surgery was the most common predisposing factor It was present in 12 cases and 1 had history of previous ectopic pregnancy. In the rest of the cases the predisposing factor was not known (Table 3). We encountered majority of ectopic pregnancies in ampullary and isthmic (37.29%, 32.20%) region respectively (Table 4). Majority of cases underwent unilateral salpingectomy (74.6% Rt- 45.8 and Lt-28.8) followed by Partial salpingectomy and Oophorectomy (11.8% and 6.8% resp.).No case was treated by milking (Table 5). All 59 patients presented H/O amenorrhea, Cervical tenderness as chief complaints while 58 of them associated with pain. Classical triad was present in (28) of the patients while only 2 were suffered from shock. Bleeding per vagina encountered in almost half (49.15%) for variable period. (Table 6).Out of total 59 ectopic pregnancies, 55 (93.2%)were ruptured of which 42 were Hemoperitoneum <500 ml. One unruptured EP was found which presented without hemoperitoneum (Table 7). Of all patients, 53(89.8%) were given blood transfusions (≥1 point). Six patients required general anaesthesia and 2 required ICU admission for the management. In this series we did not encounter a single mortality. (Table 8) Out of total 55 ruptured pregnancies, 28(50%) were within 7 weeks of gestation. Ampulla was the most common site for ruptured pregnancy with 20(36.36%) followed by isthmus 18(32.73%) cases. There were 2 cervical and 2 oarian ruptured ectopic pregnancy cases reported. (Table 9) The urine for pregnancy test was found to be reactive in all of cases. We used ultrasound as a routine in evaluation of ectopic pregnancy in all cases. It was conclusive enough to show the site of pregnancy (Table 10).

DISCUSSION

Ectopic pregnancy is a common obstetrical disorder in early pregnancy all over the world that remains an important cause of maternal mortality and morbidity. In UK (CMSO 1990) ectopic pregnancies occurs as1in 300 intrauterine pregnancies, 12.5 per 1000 deliveries and constitute 11.5% of the maternal mortality. In India the incidence of ectopic pregnancy reported by the Indian council of medical research (ICMR 19990) task force in their multicentric case control study was 3.12 per 1000 pregnancies or 3.86 per 1000 live births in the hospital reported pregnancies.[9,10]In our study group the incidence of ectopic pregnancies was 5.3 per 1000 deliveries.The incidence of ectopic pregnancy was 1.99% of vaginal deliveries in a study by Wakankar and Kedar[23]. A study conducted at BPKIHS, Nepal in which they found incidence was 2.92%of total gynecological admissions. In US based studies the incidence turned to be 1.9% of reported pregnancies.In our study 64.5% were in the age between 21 to 30 years (32.25% each for age group21-25 years and 26-30 years) which was coparable to 72.5% in a study by Porwal Sanjay *et al.*[11]. Same age group seems to be affected in a Mumbai based study[12].We found 23.75% of sufferers to be primigravida which was contrast to Kolkata based study that revealed the primigravida to be most of the cases[13].All patients brought to us had tachycardia while two were in a condition of shock. Majority had anemia and received blood transfusion. The same pattern seen in a Kathmandu based study[14]. Almost 50% of reported EP case was within 7 weeks of gestation in the study whis contrast to study by Porwal Sanjay *et al.*[11] in whichmore than 4/5th (85%) of cases had 6 to10 weeks amenorrhea and only 15% presented with amenorrhea more than 10 weeks. We encountered majority of ectopic pregnancies in ampullary and isthmic (37.29%, 32.20%) region respectivel. A study byPorwal Sanjay *et al.*[11]found ampullary portion of tubes (40%) and isthmus(32.5%) to be most common sites. Priti S Vyas *et al*[10] also found 42.5% ectopic pregnancies in ampullary portion and 22.4% in isthmic portion of the tubes. The vaginal bleeding of variable period was found in 67.5% of cases almost same as in a Kolkata study[13], Porwal Sanjay *et al.*[11] and Nepal study[14].The classic triad of bleeding per vaginum, amenorrhea and pain abdomen found in 47.25% similar to 53.84% cases in the study by Wakankar and Kedar[23]and 45$^{\%}$ cases in Porwal Sanjay *et al.*[11]. It gives an importance of early diagnosis of ectopic pregnancies. In our study, the most common factor was tubal surgery but in the study byPorwal Sanjay *et al.*[11] predisposing factors were PID (47%),Infertility (22.5%),Tubal surgeries(10%),Previous ectopic pregnancies (5%).Also in study by Bandana Pradhan *et al.*[22]pelvic inflammatory disease was the most common etiology for ectopic pregnancy(29%), followed by intake of ovulation inducing drugs(25%), and history of induced abortion(23%).Majority of cases underwent unilateral salpingectomy (74.6% Rt- 45.8 and Lt-28.8) followed by Partial salpingectomy and Oophorectomy (11.8% and 6.8% resp.).No case was treated by milking The most common procedure in cases was totalsalpingectomy(45%),salpingoophorectomy in 32.5% of cases, in study of Porwal Sanjay *et al.*[11] the same finding described by Chinurgia in current trends[15]. All cases used UPT and ultrasound in our study while almost 50% were diagnosed clinically which were later confirmed by USG. Currently ultrasound and serum biomarkers are used by clinicians for early diagnosis. A study by Bandana Pradhan *et al.*[22] shows that confirmation of ectopic pregnancy (51%) was by clinical diagnosis, and by pregnancy tests, and 49% was by ultrasonography. There was no mortality in our study similar to the study of Wakankar and Kedar[23]

CONCLUSION

To conclude patients having clinical features of ectopic pregnancy on ultrasound scan as positive adnexal mass with or without gestational sac, with or without fetal heart, or presence of adnexal mass along with hemoperitoneum, along with positive pregnancy test,assures diagnosis of ectopic pregnancy. So by reducing and identifying the risk factors and catching the patient by ultrasonographic examination at the earliest at 6 week and critical case of ruptured ectopic which diagnosed clinically and treated with efficient surgical management and postoperative care can make it possible to improve the prognosis so far as the morbidity and mortality and fertility are concern [16-21].

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