

A clinical analysis of ectopic pregnancies at tertiary health care hospital

¹Preetha F Nayakar, ²Ashwini Veeresh, ³Ambika HE, ⁴Prashanth S, ⁵Manjula B

¹Post Graduate Student, Department of Obstetrics & Gynecology, Shimoga Institute of Medical Sciences, Shivamogga, Karnataka, India

²Assistant Professor, Department of Obstetrics & Gynecology, Shimoga Institute of Medical Sciences, Shivamogga, Karnataka, India

^{3,4}Associate Professor, Department of Obstetrics & Gynecology, Shimoga Institute of Medical Sciences, Shivamogga, Karnataka, India

⁵Scientist B, Manjula B, Multidisciplinary Research Unit, Shimoga institute of Medical Sciences, Shivamogga, Karnataka, India

Corresponding Author:

Prashanth Shivappa (drprashya@gmail.com)

Abstract

Background: Ectopic pregnancy (EP) is one of the life-intimidating emergencies in pregnancy leading to maternal morbidity and mortality. Early diagnosis of ectopic pregnancy presents a challenging problem and is considered an emergency as it shows high mortality risk and its early detection and management are necessary to prevent maternal mortality and morbidity.

Aim and Objectives: To evaluate the cases of ectopic pregnancy at a tertiary health care center and to determine the incidence, risk factors, clinical presentation, management, and morbidity associated with ectopic pregnancy.

Methodology: We conducted a prospective study on 37 patients with ectopic pregnancies at Shivamogga Institute of Medical Sciences a tertiary care center from August 2020 to August 2021. The primary outcome measures studied were the incidence of ectopic pregnancy, their risk factors, mortality and morbidity in those pregnant women.

Results and Discussion: The incidence of ectopic pregnancy in this study is 0.49%. The common age and parity affected were 26-30 years (59%) and para 1 (46%). The most common risk factors were previous LSCS (49%) followed by abdominal tubectomy, laparoscopic tubectomy and recanalization. The ampulla region (59.5%) was the most common site of ectopic pregnancy. Majority of cases presented with a ruptured ectopic (70.27%) and unruptured accounted for -29.72%. In our study Salpingectomy (78.37%) was the common surgical procedure performed. Around 83.77% of women received a blood transfusion. No maternal mortality occurred during this period due to ectopic pregnancy.

Conclusion: Ectopic pregnancy is a life-threatening condition occurring in women. Worldwide the incidence of ectopic pregnancy is increasing, which will increase maternal morbidity, mortality, and fertility. Early diagnosis and management will reduce the risk of maternal morbidity and mortality due to ectopic pregnancy.

Keywords: Amenorrhea, ectopic pregnancy (EP), maternal mortality

Introduction

An Ectopic pregnancy (EP) is one in which the fertilized ovum becomes implanted in a site other than the normal uterine cavity. Hospital-based studies reported that the incidence of EP varies from 1-3% ^[1]. The main causes and risk factors for EP will be pelvic inflammatory disease (PID), previous ectopic pregnancy, scarring from pelvic surgery, intrauterine device usage, smoking at the time of conception, tubal ligation reversal, sexually transmitted infection, use of fertility drug and maternal age ^[2]. According to the Sample Registration System (SRS) report by the Registrar General of India (RGI) the maternal mortality ratio from 2016 to 2018 was 113 per 100,000 live births ^[3]. The maternal mortality rate (MMR) varies from as 3.5-7.1% due to EP ^[4]. The morbidity and mortality will be high if it is not diagnosed and treated properly at the earliest. Generally the EP present with symptoms such as abdominal pain, vaginal bleeding, amenorrhea and other vague complications. Majority of cases presented with signs and symptoms which are similar to the other diseases affecting the abdominal organs. Therefore proper management of EP needs early diagnosis, resuscitation, timely treatment, and follow-up. In the present study, we determine the incidence, risk factors, clinical presentation, management, morbidity & mortality in our study population.

Material and Methods

This is a prospective study conducted in the department of obstetrics and Gynecology, McGann Hospital, Shimoga Institute of Medical Sciences, Shivamogga, and Karnataka, India for one year from August 2020 to August 2021. All Ectopic pregnancies admitted to the department of OBG during the study period were included after obtaining informed consent. The primary outcome measures incidence of EP, their risk factors, mode of diagnosis, management modality, complications, need for blood transfusion, morbidity and mortality were recorded. The result and data were analysed using SPSS software.

Results

During our study period, 37 cases presented with ectopic pregnancy out of 7577 pregnancies. The incidence was found to be 0.49%. The majority of cases were within the 26-30 years age group (59.5%) followed by 21-25 years (24.3%), 31-35 years (8.1%), and 36-40 years (8.1%). The highest parity was found to be Para 1(45.9%) followed by Para 2 (32.4%), nullipara (10.8%), para 3(8.1%), and para 4 (2.7%) in our study (Table 1). Out of 37 cases, the majority of cases presented with amenorrhea, abdominal pain, and vaginal bleeding. In our study, the EP was noted on the right side (54.1%) and the left side (45.9%). The commonest site of ectopic gestation was an ampullary region of the fallopian tube (59.5%) followed by an isthmic region (35.1%) and the least common site was the fimbrial and rudimentary horn of the bicornuate uterus (2.7%). Risk factors were associated in 27 cases out of 37 cases of EP. The previous history of lower segment Caesarean section (48.64%) was the most common risk factor associated with EP followed by abdominal tubectomy (16.21%), laparoscopic tubectomy (5.4%), and recanalization (2.7%). Among 37 cases the ruptured cases (70.3%) were highest than unruptured (29.7%) as operative findings to conduct laparotomy. As a part of treatment, the most common surgical procedure done was salpingectomy (78.4%) followed by partial salpingectomy (18.9%) and removal of horn with hysterectomy (2.7%) in our study (Table 1). Table 2 represents the blood transfusion requirement in EP cases. Out of 37 cases, 31 cases required blood transfusion. One unit of transfusion is required for 45.9% of cases, two units of transfusion are required for 32.4% of cases, and three-unit of transfusions are required for 5.4% of case.

Table 1: Baseline clinical features of cases

Age (years)	N=37	Percentage (%)
21-25	9	24.3
26-30	22	59.5
31-35	3	8.1
36-40	3	8.1
Parity		
Nullipara	4	10.8
Para 1	17	45.9
Para 2	12	32.4
Para 3	3	8.1
Para 4	1	2.7
Side of Involvement		
Right	20	54.1
Left	17	45.9
Site of EP		
Ampullary	22	59.5
Isthmus	13	35.1
Fimbrial	1	2.7
Rudimentary horn of bicornuate uterus	1	2.7
Risk factors (prior H/O)		
Previous LSCS	18	48.6
Abdominal tubectomy	6	16.2
Laparoscopic tubectomy	2	5.4
Recanalisation	1	2.7
None	10	27.1
Operative findings on Laparotomy		
Ruptured *	26	70.3
Unruptured	11	29.7
Type of surgical treatment		
Salpingectomy	29	78.4
Partial salpingectomy	7	18.9
Removal of horn with Hysterectomy	1	2.7

Table 2: Number of Blood Units Transfused

Number of units (Packed cells)	N=37	Percentage (%)
0 units	6	16.3%
1 units	17	45.9%
2 units	12	32.4%
3 units	2	5.4%

Discussion

In medical science, ectopic pregnancy is a clinical acumen and challenge to all medical practitioners. Delay in management with misdiagnosis leads to awful medical complications and leads to maternal death.

In our study, the incidence of ectopic pregnancy is 0.49% which was similar to Prem Singh *et al.* study [5] whereas, in recent studies contacted in tertiary health care hospitals, the incidence of EP varies from 0.5 to 4.5% [6, 7, 8, 9].

In India, the majority of women marry and finish childbearing at an early age and fewer pregnancies are seen in 20-30years of life. In the present study, 26-30 years age group cases

(59.5%) were more than in other age groups as in Supriya *et al.* [8], Chanu *et al.* [5] and Parmar *et al.* [10].

Different studies show different associations between ectopic pregnancy and parity. Some studies reported that Multigravida is the highest affected [8, 11], whereas some have shown Primigravida [12], [13]. Concerning parity, the highest percentage of cases was para 1 (45.9%) and the least percentage of cases was para 4 (2.7%) which was similar to other studies from Chanu *et al.* [5], Chitra *et al.* [11] and Verma *et al.* [14]. Out of 37 cases, the majority of cases presented with amenorrhea, abdominal pain and vaginal bleeding was noted which is similar to Malik *et al.* [15]. We distributed the study population according to different risk factors; the previous LSCS (48.6%) shows the highest percentage as in Barik *et al.* [16]. and Sreelatha *et al.* [17] among their study population.

In our study population, 70.3% of cases had ruptured ectopic pregnancies as in Barik *et al.* [16] and Yadav *et al.* [18]. Right-sided EP was common (54.1%) as shown in other studies by Barik *et al.* [16]. and Ranji *et al.* [19].

The most common site of EP was the ampullary junction (59.5%) followed by the isthmus region (35.1%), which was similar to the studies of Barik *et al.* [16] and Yadav *et al.* [18]. The rudimentary horn of bicornuate uterus site is uncommon and it was the least common representing 2.7% of our study population.

The majority of cases were of ruptured ectopic pregnancies with hem peritoneum hence salpingectomy (78.4%) and partial salpingectomy (18.91%) were performed. 1 case corneal ruptured ectopic pregnancy, hysterectomy was done because of uncontrolled bleeding, Similar study Dasari *et al.* [20] also reported that salpingectomy was the most commonest operative procedure performed for ruptured EP (85.3%).

A large number of cases required blood transfusion. In our study, 83.7% of the cases needed blood transfusion Dasari *et al.* [20] also reported need for the blood transfusion as 88.8%. This may be due to several clinical complications and the presence of a high number of ruptured cases.

In our study, maternal death was not occurred as in Barik *et al.* [16] and Dasari *et al.* [20], this is due to the effort of good clinical team with early referral, prompt diagnosis and better facilities in our health care hospital with blood bank services.

Limitations: The sample size is small.

Conclusion

For women in the reproductive group, ectopic pregnancy is un common and it is one of the life-threatening conditions worldwide. It may be due to risk factors and clinical complications due to the previous laparotomy as in our study. Early diagnosis, timely referral with proper medical facilities will reduce the maternal and mortality associated with ectopic pregnancy. Early diagnosis & proper management definitely reduces the morbidity and mortality associated with ectopic pregnancy.

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Ethical approval

Obtained from Institutional Ethics Committee, Shimoga Institute of Medical Sciences, Shivamogga. Ref. No: SIMS/IEC/519(e)/2020-21.

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