

Analysis of Metacyesis (EP) in a Tertiary Care Institute

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Abstract: ***Objective:** This study aims at determining the incidence, demographic profile, risk factors, clinical features and treatment modalities of metacyesis (EP). **Study Design:** Retrospective observational study. **Place and Duration of Study:** Obstetrics and Gynaecology Department, Rajiv Gandhi Medical College, Kalwa, Mumbai, from 1st March 2022 to 31st August 2022. **Methodology:** This was a retrospective observational study comprising 42 cases admitted to the Obstetrics and Gynaecology department of Rajiv Gandhi Medical College, Kalwa, Mumbai, from 1st March 2022 to 31st August 2022. All women of any age or parity with diagnosis of extrauterine pregnancy were included and treated surgically or medically. **Results:** The incidence of ectopic gestation was 1.16% over 6 months. The majority of patients (57.14%) were young and were between 25 to 35 years of age. It was most common in multi-parous women. Pelvic inflammatory disease was seen in 38.1%, followed by history of infertility (19.05%) and history of surgical contraception (9.52%) while no identifiable risk factors were observed in 26.19% of extrauterine pregnancies. Most typical presenting symptoms were lower abdominal pain (92.86%), amenorrhea (86%), p/v bleeding (42.85%) and shock (40.7%). The majority of patients (85.71%) underwent surgical procedures. **Conclusion:** Timely diagnosis and referral to a health care facility, equipped with blood bank services and aggressive management can reduce ectopic pregnancy associated with maternal morbidity and mortality.*

Keywords: Amenorrhoea, BhCG, Ectopic pregnancy, Maternal mortality, Scar ectopic, Risk factors, Extrauterine pregnancy, Ultrasonography, Vaginal bleeding.

1. Introduction

Metacyesis (EP) occurs when a zygote implants outside the conventional cavity.¹ Extrauterine pregnancy (EP) could be a condition presenting as a serious pathological state for females of childbearing age. The incidence of EP varies with the population, but it has been accounted for 1-2% of all reported pregnancies.²⁻³ Ectopic pregnancy (EP) is the leading explanation for maternal death during the primary trimester of pregnancy. It has been shown to cut back subsequent fertility and increase the possibilities of subsequent EP.⁴⁻⁵ It has increased fourfold over the couple of decades but reciprocally, the mortality rate declined to nearly 80%.⁶ In developing countries, the majority of hospital based studies reported the Ectopic pregnancy fatality rates around 1-3% which is ten times higher than those of developed countries.⁷

Almost all EPs occur within the salpinx (98.0%), the ampulla is the commonest site of implantation (80.0%), followed by the isthmus (12.0%), fimbria (5.0%), cornua (2.0%), and interstitial (2.0-3.0%).⁸⁻⁹ The etiology of EP remains uncertain although variety of risk factors are identified. A factor for the event of such ectopics is that the presence of a pathologic fallopian tube.¹⁰ EP is also asymptomatic, and also the most typical clinical presentation is first trimester vaginal bleeding and/or abdominal pain.¹¹ Its diagnosis is often difficult. In current practice, in developed countries, diagnosis relies on a mixture of ultrasound scanning and serial serum beta-human chorionic gonadotropin (β -hCG) measurements.¹² EP is one among the few medical conditions which will be managed expectantly, medically or surgically. Surgical methods are still the mainstay within the management of EP, and in developed societies, laparoscopic surgery is currently the gold standard.

2. Methods

This is a retrospective observational study conducted at very Tertiary care centre, Rajiv Gandhi Medical College Kalwa, Mumbai, from 1st March 2022 to 31st August 2022. Case records of patients were retrieved from the medical records department. Patient characteristics like age, parity, risk factors were noted. All patients diagnosed with ectopic gestation (by clinical examination, USG and/or B hCG) were included within the study. Management modality, complications and need for blood transfusion were also recorded.

Inclusion criteria

All patients presenting to the OPD/casualty with the diagnosis of an extrauterine gestation, i.e. evidence of pregnancy at a site outside the cavity with or without pregnancy within the cavity (diagnosed by Radiological imaging with or without B hCG).

Exclusion criteria

Intrauterine pregnancies

The aims and objectives of this study were to see the demographic distribution of patients presenting with EP, determine the chance factors related to the patients presenting with gestation, to explain the assorted locations and stats (ruptured/ unruptured/tubal abortion) of ectopic pregnancies found in these patients, to assess the range of clinical signs and symptoms of the patients presenting with EP, to explain the varied modalities of treatment utilized in EP, and to explain the varied complications related to EP.

3. Results

The incidence of ectopic pregnancies over 6 months was 1.16%. The commonest age of presentation was between 25-35 years (Table 1).

Table 1: Age at presentation

Age	Number of cases	Percentage
Less than 20	3	7.14
20-25	9	21.43
25-30	11	26.19
30-35	13	30.95
35-40	4	9.53
≥40	2	4.76
Total	42	100

The youngest patient was 19years old, and the oldest was 45 years old. Most of the patients were Gravida 3.

Table 2: Gestational age at presentation

Gestational age (weeks)	Number of cases	Percentage
4-6	9	21.42
6-8	24	57.14
8-10	6	14.29
≥ 10	3	7.15
Total	42	100

Most patients presented at a gestational age between 6-8 Weeks (Table 2). Longest gestational age at presentation was 10.3 weeks and shortest gestational Age was 4.5 weeks.

Table 3: Previous Obstetric History

Previous obstetric history	Number of patients	Percentage
First pregnancy	8	19.04
Abortion	6	14.29
Previous neonatal death	1	2.39
Live issues	22	52.38
Abortion and live issues	5	11.90
Total	42	100

While most patients (52.38%) had previous living issues, 14.29% of patients had a previous history of abortion, 11.9% of patients had abortion and live issues (Table 3). Two patients had a bad obstetric history (G4A3).

Table 4: Location of ectopic

Location	Number of patients	Percentage
Cornual	6	14.29
Interstitial	3	7.14
Ampullary	24	57.14
Heterotopic	5	11.90
Scar ectopic	1	2.39
Ovarian ectopic	3	7.14
Total	42	100

57.14% patients had ampullaryectopic, 14.29% of each EP were cornual and 11.9% were found heterotopic. There was 7.14% cases had interstitialpregnancy. 1 scar ectopic pregnancy and 3 were ovarian ectopic.

Table 5: Risk factors

Risk factor	Number of patients	Percentage
Pelvic surgery	3	7.14
Pelvic inflammatory disease	16	38.1
Infertility	8	19.05
History of tubal ligation	4	9.52
None	11	26.19
Total	42	100

38.1% of patients have PID, 7.14% of patients have had some form of pelvic surgery in the past. There were four cases (9.52%) of EP after tubal ligation (Table 5).

Table 6: Presenting complaints

Complaints	Number of patients	Percentage
Pain	24	57.15
Bleeding per vagina	3	7.14
Pain and bleeding PV	15	35.71
Total	42	100

The commonest presenting complaint was abdominal pain, seen in 57.15% of cases, 35.71 % of patients presented with complaints of pain and bleeding PV (Table 6).

Table 7: Haemoglobin at admission

Haemoglobin (g%)	Number of patients	Percentage
<7	11	26.2
7-9	22	52.38
9-11	6	14.28
>11	3	7.14
Total	42	100

Most patients presented with anaemia (haemoglobin Between 7-9g %) (Table 7). Lowest Haemoglobin was 5.3g% and highest was 11.2g%, 20 patients need blood transfusion.

Table 8: Diagnostic modality

Diagnostic modality	Number of cases	Percentage
TVS	5	11.90
TAS	14	33.33
TAS and B hCG	23	54.77
Total	42	100

54.77% of cases were diagnosed by a combination of TAS and serum BhCG levels and 33.33% of cases were diagnosed with only TAS (Table 8).

Table 9: Intra-op (Ruptured/Unruptured)

	Number of cases	Percentage
Rupturedectopic	15	35.71
UnRuptured ectopic	24	57.15
Tubal abortion	3	7.14
Total	42	100

Most Patients (57.15%) were found to have unruptured ectopic (Table 9).

Table 10: Management Modalities

Management modality	Number of cases	Percentage
Surgical	36	85.71
Medical	6	14.29
Total	42	100

Surgical management is the main modality of choice, 14.29 % cases were managed medically.

4. Discussion

The incidence of ectopic gestation in our study was 1.16%. Lozeau AM et al at USA and Palve TT et al observed the incidence of 1.9% and 1.17% in their study.¹³⁻¹⁴ The incidence of Extrauterine pregnancy is on an increase because of better diagnostic technologies, more use of IUCDs, increased incidence of PID and earlier diagnosis and management, within the developed world, between 1% and 2% of all reported pregnancies are ectopic pregnancies (comparable to the incidence of spontaneous twin Pregnancy).¹⁵

In this study, the most typical cohort of presentation was between 25-35 years. Mufti S et al and Majhi AK et al reported the identical findings in their study. Shafquat et al, showed the height age of incidence as 26-30 years.¹⁶⁻¹⁸ This is probably because sexual activity and fertility are highest in this period.

The common fetal age at presentation during this study was between 6-8 weeks which is in line with the Palve TT et al study. The mean gestational age at diagnosis of EP was 7.1 within the study conducted by Tahmina S et al.¹⁹

In this study, with regards to parity, ectopic gestation was most often seen in multipara as compared to primipara. This is similar to the study by Shafquat et al and Bhuria V et al.²⁰

The most common site is ampulla for ectopic (57.14%) in our study. The incidence of interstitial EP was 7.14% in our study. This is similar to the incidence of interstitial EP in an exceedingly study conducted by Fernandez et al., wherein the incidence of interstitial EP was 3-11%.²¹ The incidence of heterotopic pregnancy during this study was 11.9%. Heterotopic pregnancy was present in 4.2% of the ectopic pregnancies as per Yeasmin et al.²² Yadav A et al have shown the association between extrauterine pregnancy and caesarean section.²³

Pelvic inflammatory disease is a major risk factor for extrauterine pregnancy. This risk factor was seen in 38.1% of cases in our study. We found that 19.05% of cases of ectopic pregnancy were related with a history of infertility. This association was also noticed by Yadav A et al, Jophy et al and Shivakumar et al in their studies.²³⁻²⁵ Tubal pathology, endometriosis, ovulation Induction and ART are few reasons for the association of infertility with the occurrence of ectopic pregnancy. Parashi et al found that usage of IUCD increased the risk of ectopic pregnancy whereas oral contraceptive Pills reduced it.²⁶ Previous pelvic surgery was a risk factor for metacystic in 7.14% of subjects. Parashi et al have associated abdomino-pelvic surgery with Ectopic pregnancy.²⁶ The possible explanation is formation of peritubal adhesions. No risk factor was found in 26.19% of cases in our study.

The classical triad of amenorrhoea, pain and vaginal bleeding was seen in 48.57% of patients in the present

study, as compared to Tahima S et al, wherein this triad was seen in 40.3% cases.²⁷ Abdominal pain and tenderness was present in 92.86% cases in our study in line with Mishra et al study.²⁸

Shock was seen in 13 to 31% of cases in various studies, while in our study it was 40.7%.^{20, 23} In a study conducted by Sabina Yeasmin et al., almost half (45%) cases of ectopic pregnancies were in a state of shock at admission.²² In our study 47.62% cases need blood and blood products transfusion.

Serum β -hCG and ultrasound were the diagnostic tools used for diagnosis of ectopic pregnancy in our study. Studies have shown that ultrasonography should be the initial investigation for symptomatic women in their first trimester; when the results are indeterminate, the serum β human chorionic gonadotropin concentration should be measured. Serial measurement of β -hCG concentrations is also useful when the diagnosis remains unclear. The identification of a non-cystic adnexal mass with an empty uterus includes a sensitivity of 84-90% and a specificity of 94-99% for the diagnosis of an extrauterine pregnancy. In one large prospective study of 6621 patients, ectopic pregnancy was correctly diagnosed by TVS with a sensitivity of 90.9% and specificity of 99.9%.²⁹⁻³⁰

Regarding ruptured ectopic in our study, it was 35.71% and unruptured ectopic was 57.15%, 7.14% of cases had tubal abortion. However, in a study conducted by Jani R et al, 35% of women had an unruptured tubal pregnancy and 26% had a ruptured tube.³¹ Thus, the incidence of ruptured ectopic pregnancy is lower as compared to unruptured extrauterine pregnancy because of early detection and management of cases thanks to better diagnostic modalities.

Treatment modality for metacystic depends on site of gestation, ruptured/un-ruptured ectopic, surgical expertise, need to retain fertility, hemodynamic status, size of mass and choice of patient. Surgery was the mainstay of treatment in our study. In our study, 85.71 % of proceedings were managed surgically. Bhuria et al and Shetty WH et al did surgical Management in 96% and 95.2% cases respectively.^{20, 32} Canis M et al in their study concluded that the surgical treatment should be performed if the patient is hemodynamically unstable, β -hCG is >10,000 mIU/mL, the ectopic pregnancy is 4cm in diameter, if there is a medical contraindication to methotrexate, and if the patient may not be followed adequately after treatment.³³

5. Conclusion

A high index of suspicion is vital for the diagnosis of Ectopic pregnancy. Access to expertise with high Quality TVS not only enables clinicians to set out a clear management plan but also contributes to the improvement in maternal morbidity and mortality outcomes.

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