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Original Research Article

A retrospective study of ectopic pregnancy

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ABSTRACT

Background: Ectopic pregnancy is one of the common acute abdominal emergencies posing a serious threat to life. The overall incidence of ectopic pregnancy is on a steady increase over the last two decades. Yet the case fatality rate has come down due to early diagnosis and management. 95% of ectopic pregnancies occur in the fallopian tube, and rest 5% cumulatively in the ovary, cervix, peritoneal cavity and previous caesarean section scar. The present study was done to analyse the associated risk factors, clinical manifestations and management options of ectopic pregnancy.

Methods: This retrospective observational cohort study was done in the Department of Obstetrics and Gynaecology, at Sri Venkateshwara Medical College, Hospital and Research Centre, Ariyur, Puducherry, between January 2018-November 2021. Data was collected from the case sheets, operative notes and a retrospective analysis of the cohort of patients with ectopic pregnancy was done.

Results: This retrospective study was conducted from January 2018 to November 2021 involving a total of 50 cases. We found that majority of tubal gestation occurred in the age group 26-30 years 58.6% and 13.7% in the age group more than 30 years. Majority of patients 65.5% underwent U/L salpingectomy. 10.34% underwent salpingo oophorectomy. Fimbrial expression was done for two patients. Two patients underwent fimbriectomy. Cornual stump excision was done in two patients. Hemoperitoneum was detected in 55.17% of cases.

Conclusion: Ectopic gestation can become an obstetrical emergency and reproductive capacity hampering morbidity if not diagnosed and treated on time. However having a high vigilance and evaluating every woman in the reproductive age group who presents with the classical clinical triad of amenorrhea, pain abdomen and bleeding per vagina can help in curbing the incidence in future.

Keywords: Salpingectomy, Fallopian tube, Ectopic, Amenorrhea, Rupture, Bleeding

INTRODUCTION

Ectopic pregnancy occurs when the fertilised ovum implants and develops at sites other than normal uterine cavity.¹ It is one of the common acute abdominal emergencies posing a serious threat to life. It adversely affects the reproductive potential of a woman by resulting in mutilation of one or more of the essential organs of reproduction, namely fallopian tubes, ovaries and even the uterus.^{2,3} Despite recent advances in diagnosis and

management, ruptured ectopic pregnancy continues to be a significant cause of pregnancy related mortality and morbidity.^{4,5}

The overall incidence of ectopic pregnancy is increasing, yet the case fatality rate has come down due to early diagnosis and management.⁴ Risk factors associated with ectopic gestation are previous ectopic gestation, history of Pelvic inflammatory disease (PID), tubal sterilisation, tubal reconstructive surgeries, previous pelvic surgery,

assisted reproductive techniques, intrauterine device usage and age >35 years.^{6,7} However it is observed that 50% of women with ectopic pregnancy do not have any of the above mentioned risk factors.⁸

Symptoms with which patients often present are abdominal pain, ranging from episodic to dull constant, amenorrhoea and bleeding per vagina. Symptoms and signs of ectopic gestation can be minimal or even nil.⁹ Hence, a high index of clinical suspicion is required.

Incidence of rupture ectopic has come down due to serial quantitative beta hcg measurements, transvaginal sonography and minimally invasive surgeries.⁹ Early diagnosis helps to reduce the risk of rupture and to commence medical management at the appropriate time.

Ectopic pregnancy occurs most commonly in the fallopian tube 95% and the rest 5% cumulatively occurs in the ovary, cervix, peritoneal cavity and previous caesarean section scar. The present study was done to analyse the associated risk factors, clinical manifestations and management options of ectopic pregnancy.

METHODS

This retrospective observational cohort study was done in the Department of Obstetrics and Gynaecology, at Sri Venkateshwaraa Medical College, Hospital and Research Centre, Ariyur, Puducherry, between January 2018 to November 2021. Data was collected from the case sheets, operative notes from a cohort of patients with ectopic pregnancy and a retrospective analysis was done. Information was obtained regarding the demographic characteristics, risk factors, clinical manifestations, diagnostic tools used, management options, morbidity and mortality associated with ectopic pregnancy. All the relevant information and data was recorded in detail in a structured proforma prepared by the investigator.

RESULTS

Retrospective cohort study was conducted during January 2018 to November 2021. The total number of ectopic gestation were 50. Majority of tubal gestation occurred in the age group 26-30 years (58.6%) and 13.7% in the age group more than 30 years. (Table 1) 24.13% were primigravida, whereas multipara were 75.87%. (Table 2)

Table 1: Age wise distribution.

| Age | Number | Percentage |
|-------|--------|------------|
| <20 | - | 0 |
| 20-25 | 14 | 27.7 |
| 26-30 | 29 | 58.6 |
| >30 | 7 | 13.7 |

There were no risk factors identified in 58.64% of the cases. About 20.68% had infertility issues and were treated

with ovulation induction. 10.34% had H/o previous ectopic gestation and another 10.34% of patients had h/o previous tubectomy (Table 3).

Table 2: Parity index.

| Parity | Number | Percentage |
|-----------------|--------|------------|
| Primi | 12 | 24.13 |
| 2 nd | 10 | 20.68 |
| 3 rd | 19 | 37.93 |
| >3 | 9 | 17.24 |

Table 3: Risk factors.

| Risk factors | Number | Percentage |
|------------------------|--------|------------|
| H/o PID | Nil | 0 |
| H/o Infertility | 10 | 20.68 |
| H/o Previous ectopic | 5 | 10.34 |
| H/o IUCD | Nil | 0 |
| H/o Previous tubectomy | 5 | 10.34 |

Table 4: Clinical presentation.

| Clinical Presentation | Number | Percentage |
|-----------------------------|--------|------------|
| Asymptomatic | nil | 0 |
| Abdominal pain | 45 | 89.65 |
| History of amenorrhoea | 41 | 82.75 |
| History of bleeding P/V | 17 | 34.48 |
| Signs of adnexal tenderness | 31 | 62.06 |

Table 5: Location of ectopic.

| Site of ectopic | Number | Percentage |
|-----------------|--------|------------|
| Ampulla | 41 | 82.75 |
| Cornual | 2 | 3.44 |
| Isthmus | nil | 0 |
| Fimbria | 5 | 10.34 |
| Ovarian | nil | 0 |
| Cervical | Nil | 0 |
| Scar | 2 | 3.44 |

Maximum 89.65% reported with abdominal pain, 82.75% cases had history of amenorrhoea, bleeding per vagina were found to be 34.48% of cases. On examination, 68.9% had abdominal tenderness, 55.17% had cervical motion tenderness, 62.06% had adnexal tenderness. (Table 4)

The urine pregnancy test was reactive in all the cases. Out of the total cases, 82.75% were in the ampullary region,

10.34% were in the fimbria and 3.44% (2 cases) were scar ectopic. (Table 5)

Table 6: Ultrasound findings.

| USG findings | Number | Percentage |
|--|--------|------------|
| Heterogenous mass with minimal free fluid in POD | 22 | 44.8 |
| Unruptured ectopic | 26 | 51.7 |
| Ruptured ectopic | 24 | 48.2 |
| Cornual ectopic | 2 | 3.4 |
| Scar ectopic | 2 | 3.4 |

Table 7: Mode of management.

| Mode of management | Number | Percentage |
|------------------------|--------|------------|
| Medical | 7 | 13.7 |
| Surgical | 45 | 89.6 |
| Partial salpingectomy | 29 | 58.6 |
| Total salpingectomy | 3 | 6.89 |
| Salpingo oophorectomy | 5 | 10.34 |
| Fimbrial expression | 2 | 3.44 |
| Fimbriectomy | 2 | 3.44 |
| Cornual stump excision | 2 | 3.44 |
| Scar ectopic excision | 2 | 3.44 |

Table 8: Complications.

| Complications | Number | Percentage |
|-------------------|--------|------------|
| Blood transfusion | 16 | 31.03 |
| Wound infection | Nil | 0 |
| Mortality | Nil | 0 |

Ruptured ectopic pregnancy was present in 48.2% cases on ultrasonography. 51.7% had unruptured ectopic. 3.4% cases were scar ectopic and 3.4% case had cornual ectopic. (Table 6). After evaluating the patients eligibility for medical management, 7 cases were given Inj. Methotrexate. Out of them, five cases were early tubal ectopic gestation & two cases were scar ectopic pregnancy. 5 patients were given a single dose of Methotrexate and patient with scar ectopic pregnancy was given 2 doses. Majority of patients 65.5% underwent U/L salpingectomy. 10.34% underwent salpingo oophorectomy, Fimbrial expression was done for two patients. Two patients underwent fimbriectomy. Cornual stump excision was done in two patients. (Table 7)

Hemoperitoneum was detected in 55.17% of cases. Blood transfusion was given in 31.03% of cases. (Table 8)

DISCUSSION

Incidence of ectopic pregnancy has increased over the last two decades due to modern lifestyle changes. Recent increase in artificial reproductive techniques and the tubal block restoration surgeries have substantially contributed to the increase of ectopic cases in the background of having other high risk factors like chronic pelvic inflammatory disease. Despite increase in the rate of ectopic pregnancies, the mortality and the morbidity have dropped down significantly due to the availability of transvaginal sonography and rapid estimation of serial serum beta HCG2.

The maximum number of ectopic cases in our study, 58.6% was seen in women of age group 20-30 years which is close to the studies done by Samiya et al (75.4%). The highest number of ectopic gestation in this age group can be attributed to the tendency of early marriage in Indian culture and early completion of reproductive activity.^{10,11}

History of infertility was found in 20.68% of patients who underwent treatment with ovulation induction. Significant incidence of prolonged infertility and its causal relationship to ectopic pregnancy has been observed by many authors. There were no cases of Pelvic Inflammatory Disease (PID) in our study. However, this was contrary to a study done by Vasquez et al, which found that PID was a major factor contributing to ectopic gestation.¹² None of our ectopic cases were related to intrauterine contraceptive device usage.

We came across tubal sterilization associated with the ectopic pregnancy in 10.34% of the patients. On review of literature it is evident that faulty surgical technique, formation of peritubal fistula, congested and edematous tube in the postpartum period may increase the chances of incomplete tubal occlusion leading to ectopic gestation.^{13,14} In our study there was no change in the clinical presentation of ectopic as compared to the other studies. The constant features were amenorrhea followed by abdominal pain and vaginal bleeding. Signs of ectopic pregnancy include pallor, abdominal tenderness, cervical motion tenderness, enlarged uterus and other signs of internal bleed.

The most common site of ectopic was ampulla of the fallopian tube. In our study the number of ruptured and unruptured ectopic were almost similar. Majority of our cases were managed by laparotomy followed by partial salpingectomy (58.62%). Laparoscopy was not a preferred method of surgical management in our institute. Two cases required fimbrial expression followed by intratubal methotrexate instillation which saved the tube. In our present study two cases of scar ectopic on the previous lower segment caesarean section scar was present. It was managed surgically by excision after failure of medical

line of management. We had two cases of cornual ectopic, which is a rare site of implantation. Tulandi AL- Jaroudi reported 32 cases of cornual ectopic. In their study of 32 cases they had a difficulty in making a diagnosis. However ultrasound was found to be highly sensitive and specific as an imaging technique aiding the diagnosis. Traditionally, the treatment would be hysterectomy or cornual resection. As we had a two cases of cornual ectopic which was diagnosed early we could save the uterus by doing a successful cornual resection at the right time.¹⁵

In our study we had seven cases of unruptured ectopic pregnancies where they were managed medically with methotrexate. The selection of the patient is in accordance with NICE guideline 2012 that is initial beta HCG <1500IU/L with an adnexal mass not >35 mm. Methotrexate treatment protocols was a single dose methotrexate 50 mg/m² IM. Second dose was repeated if beta HCG level not decreased by 15% on the fourth day. Three patients responded to a single dose methotrexate, two patients responded to variable dose regimen and two cases of scar ectopic failed to respond to medical management. All the patients were monitored with serial serum beta HCG. Many of the studies worldwide demonstrated success rate close to 90% with methotrexate.¹⁷ As our study had a paucity in the number of cases, it will not be prudent to draw a sensible conclusion regarding the use of methotrexate in the successful management.¹⁶

CONCLUSION

Ectopic gestation can become an obstetrical emergency and reproductive capacity hampering morbidity if not diagnosed and treated on time. However having a high vigilance and evaluating every woman in the reproductive age group who presents with the classical clinical triad of amenorrhea, pain abdomen and bleeding per vagina can help in curbing the incidence in future.

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Ethical approval: The study was approved by the Institutional Ethics Committee

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