International Journal of Reproduction, Contraception, Obstetrics and Gynecology
Patel TL et al. Int J Reprod Contracept Obstet Gynecol. 2023 Feb;12(2):382-386
www.ijrcog.org
pISSN 2320-1770 | eISSN 2320-1789

DOI: https://dx.doi.org/10.18203/2320-1770.ijrcog20230120

Original Research Article

Clinical study on ectopic pregnancy

Tejal L. Patel, Garima Chouhan*

Department of Obstetrics and Gynecology, B. J. Medical College and Civil Hospital, Ahmedabad, Gujarat, India

Received: 01 January 2023
Accepted: 18 January 2023

***Correspondence:**
Dr. Garima Chouhan,
E-mail: garimachouhan011@gmail.com

ABSTRACT

Background: Ectopic pregnancy is a life-threatening emergency which is one of the important cause of maternal morbidity and mortality in early pregnancy. Ectopic pregnancy must be suspected in any woman in the reproductive age group, presenting with lower abdominal pain or vaginal bleeding. It is of great importance to diagnose the condition early to prevent complications. The aim of the study is to review all cases of ectopic pregnancy and determine the incidence, high risk factors, types of clinical presentation and mode of management in a tertiary care hospital.
Methods: A retrospective study conducted on 108 patients of ectopic pregnancy admitted at obstetrics and gynaecology department, civil hospital Ahmedabad from January 2021 to June 2022.
Results: In this study 108 patients, diagnosed with ectopic pregnancy observed during the study period, with an incidence of 1.09%. Majority of women were aged 20-30 years (45.3%) and multiparous (59.25%). The 66.6% cases were ruptured ectopic. The most common risk factors were pelvic inflammatory disease (16.7%), past history of infertility (14.8%) and IUCD (12.03%). Lower abdominal pain was seen in 98 (90.74%) patients and pallor was seen in 84 (77.78%). Majority of patients had tubal ectopic pregnancies. Most common mode of treatment was unilateral salpingectomy (79.62%).
Conclusions: Ectopic pregnancy is leading cause of maternal mortality in first trimester. Safe sexual practices can reduce pelvic infections and ectopic pregnancy incidences. Early diagnosis before tubal rupture can reduce morbidity and mortality in ectopic pregnancy.

Keywords: Ruptured ectopic, Tubal pregnancy, PID, Salpingectomy, Multiparity, Ultrasonography

INTRODUCTION

The word ectopic is from Greek; 'Ex' and 'Topos' meaning 'out of place'. An ectopic pregnancy occurs when a fertilized ovum implants outside the normal uterine cavity.[1] It is a life-threatening condition that every obstetrician and gynecologist encounters in his or her practice. In developing countries like India, incidence of ectopic pregnancy is around 1%-3% which is much higher than those reported in developed countries.[2] Increased awareness of ectopic pregnancy and a knowledge of the associated risk factors is helpful in identifying women at higher risk in order to facilitate early diagnosis. Our study therefore aimed to proffer a way forward as to educate women of reproductive age on the risk factors that would predispose them to ectopic pregnancy, the early symptoms and the importance of presenting early to a health facility when they observe these symptoms to ensure early management before rupture as patients with an ectopic pregnancy commonly present with pain with amenorrhoea between 6 and 10 weeks of pregnancy.[1] It can also be used for planning of health services.

Most common risk factors are damage to the fallopian tube during previous pelvic or abdominal surgery or infection, intrauterine devices, infertility, previous history of abortions, smoking and previous history of ectopic. Chlamydia trachomatis has been linked to 30-50% of all ectopic pregnancy.[3]

METHODS

Retrospective study type was used. Study conducted at department of obstetrics and gynaecology, B. J. medical college and civil hospital, Ahmedabad. Study conducted from January 2021 to June 2022 (one and half year).

Selection criteria

All diagnosed cases of ectopic pregnancy on the basis of ultrasonography finding.

All intrauterine pregnancy were excluded from the study.

Study population

During same periods there were 9859 deliveries giving the incidence of ectopic pregnancy 1.09%. The case sheets of the patients with diagnosed cases of ectopic pregnancy were traced through the labour ward registers and operation theatre registers.

The diagnosis of ectopic pregnancy was mainly based on ultrosonography finding along with beta HCG correlation in some cases. Information regarding the total number of ectopic pregnancies in the study period, details of demographic characteristics, clinical symptoms and signs, diagnostic tools used, treatment, risk factors for the ectopic pregnancy as well as associated morbidity and mortality were obtained.

Statistical analysis

The data for all parameters were collected, tabulated, and frequency and percentage were analyzed.

On admission detailed history and clinical evaluation done. Clinical evaluation included-(1) General examination of patient- including presence of anemia, shock, restlessness, cold extremities, pulse, respiration, blood pressure, temperature and cardiovascular and respiratory systems, (2) Abdominal examination- for presence of mass, signs of free fluid in peritoneal cavity, guarding, rigidity, tenderness and (3) Vaginal examination –for presence of bleeding, its nature, colour of the vaginal mucosa, position of the cervix, tenderness on movement of the cervix, size of the uterus, mobility and consistency, presence of mass and/or tenderness in any of the fornices.

After a detailed examination, a sample of blood was drawn for blood grouping, Rh typing and cross-matching to arrange blood for transfusion. Investigations like Hb%, HCT, routine blood tests as advised by anaesthesiologists; TLC, DC, ESR if necessary; urine pregnancy test and ultrasonography were carried out. Patients in shock were managed and taken for surgery. Blood transfusion was given intra-operative or postoperative as per the requirement and taken for laparotomy subsequently. As majority of the patients had ruptured tubal gestation, a decision for removal of the tube i.e., unilateral salpingectomy was made.

RESULTS

Total 108 cases of ectopic pregnancy were observed during the study period of one and half year at our institution. Total no. of delivery during the same period were 9859. The incidence of ectopic pregnancy was 1.09%. Majority of women were in age group 21-30 (45.3%) and multiparous (59.25%). The classical history of amenorrhoea, pain abdomen and vaginal bleeding was present only in 63.8% cases in the present study. Presence of shock was seen only in 14 cases (12.9%). Acute lower abdominal pain was the most common presenting feature in 90.74% of the cases.

Table 1: Age wise distribution of ectopic pregnancy cases, (n=108).

Age group (Years)	N	Percentage (%)
15-20	8	7.4
21-25	30	27.78
26-30	46	42.59
31-35	19	17.59
36-40	5	4.62

Table 2: Clinical presentation.

Clinical features	N	Percentage (%)
Abdominal pain	98	90.74
Amenorrhoea	87	80.56
Bleeding per vaginum	69	63.89
Nausea and vomiting	16	14.8

Table 3: Distribution on basis of general and per abdomen examination.

Signs	N	Percentage (%)
Shock	14	12.96
Fever	8	7.40
Abdominal tenderness	46	42.59
Abdominal distension	23	21.29
Guarding	9	8.34

Table 4: Finding on local examination.

Finding	N	Percentage (%)
Cervical tenderness		
Present	62	57.40
Absent	46	42.59
Fornicial tenderness		
Present	40	37.03
Absent	54	50
Fornicial tenderness+ mass	14	12.9

In this present study, ectopic pregnancy occurred more in second and third decade of life.

Table 5: Risk factors of ectopic pregnancy.

Risk factors	N	Percentage (%)
Pelvic inflammatory disease	18	16.7
History of infertility	16	14.8
History of tubectomy	14	12.9
IUCD	13	12.03
History of previous abortions	12	11.12
History of previous ectopic	9	8.34
Smoking	6	5.56
None	20	18.51

The most common risk factor found in the study was pelvic inflammatory disease 16.67%% followed by History of infertility 14.8%%, History of previous tubectomy in 12.9%% each, previous history of ectopic was present in 8.34% and 18.51% women had no identifiable risk factors.

Table 6: Site of ectopic pregnancy, (n=108).

Site of ectopic	N	Percentage (%)
Ampulla	65	60.18
Isthmus	18	16.67
Fimbria	14	12.9
Cornual	9	8.34
Caesarean scar ectopic	1	0.92
Abdominal ectopic	1	0.92
Ovary	0	0

Table 7: Outcome of tubal ectopic pregnancy.

Condition	N	Percentage (%)
Ruptured	71	65.7
Unruptured	25	23.14
Tubal abortion	10	9.25

Table 8: Blood transfusion required in cases of tubal ectopic pregnancy.

Outcome	No. of cases requiring blood transfusion	Percentage (%)
Ruptured	41 (71)	57.4
Unruptured	4 (25)	16
Tubal abortions	1 (10)	10

There were 71 cases (66.7%) of ruptured ectopic on surgery, out of which 70 were tubal rupture and 2 were cornual rupture.

We also found that the patients requiring blood transfusion was majorly from ruptured ectopic category (56.9%), which suggest that early routine antenatal visits and dating scans should be promoted to diagnose ectopic pregnancy prior to rupture. There was 1 maternal mortality attributed to ruptured ectopic in our study duration because of late presentation.

Table 9: Management modality of tubal ectopic pregnancy.

Modality of management	N	Percentage (%)
Medical management	8	7.4
Failed medical management	3	2.78
Laparotomy (unilateral salpingectomy)	89	82.4
Laparoscopic (unilateral Salpinsectomy)	9	8.34

Medical management of tubal ectopic pregnancy was done in 7.4% cases, whereas medical management failed in 2.78% followed by laparotomy and direct laparotomy in 79.62% women and 8.34% patients were managed by laparoscopic salpingectomy (Table 9) in the present study.

Management modality of non-tubal ectopic pregnancy

There was 1 abdominal ectopic pregnancy out of 108 cases in our study duration, which corresponds to Speroff's gynecology's abdominal ectopic pregnancy incidence that is 1/100 ectopic pregnancy.[4] The pregnancy was of 34 weeks maturity with having no antenatal visits and diagnosed primarily in our institute. Management of this case was done by laparotomy with birth of live baby of 1.8 kg. Placenta was attached to anterior abdominal wall and it was kept in-situ at the time of laparotomy for autolysis eventually.

Another rare case was previous caesarean scar ectopic which was managed by scar excision.

DISCUSSION

This study reviewed one and half years of archived data on ectopic pregnancies managed at the civil hospital, Ahmedabad to determine incidence, patterns in presentation, treatment modalities, and outcomes, and to assess risk factors associated with ectopic pregnancy. It is one of the leading causes of maternal mortality and morbidity in the first trimester. The incidence of ectopic pregnancy found in our study center during the study period was 1.09% of all deliveries; Worldwide, approximately 1-2% of all naturally conceived pregnancies result in ectopic implantation. Studies in Africa also reported a similar incidence (1-2%) of ectopic pregnancies. It is however, lower than Speroff's

gynecology which shows the incidence around 1.5-2% of all pregnancies.

Out of all 70.3% women belonged to 21-30 years of age which is comparable to a study done in DASH Lafia, North Central Nigeria and a 10 year study conducted in Lekma hospital, Ghana.[3,5] The similarity in findings in the studies above could be that this age range falls within the reproductive age group.

In this study, we reported a linear relationship between parity and incidence of ectopic pregnancy with highest cases in multiparous group (59.25%) with similar results in study carried out by Khan et al.[6]

Most common presenting symptom was pain in abdomen which was seen in 90.74% cases followed by history of amenorrhea (80.56%) were similar with Shetty and Shetty (pain=80.6%, amenorrhea=77.4%) followed by bleeding per vaginum in 63.89% cases.[7] In present study, 14 (12.9%) cases presented to the hospital in shock. Most relevant finding from local examination point of view was cervical motion tenderness (57.20%) followed by fornicial tenderness (37.03%).

Any form of tubal insult [in pelvic inflammatory disease, history of tubal and pelvic surgery, history of previous ectopic], history of infertility, abortions and IUCD was strongest risk factors associated with the occurrence of ectopic pregnancy.[8] PID was found in 16.7% cases suggesting strong evidence that PID is responsible for the ectopic pregnancy. This statement is also supported by a study conducted in department of obstetrics and gynaecology, academic medical centre, Amsterdam in 2010 which primarily showed increased incidence of ectopic with rise of STI and later on gradual decline after awareness towards STI.[9] In present study, previous ectopic pregnancy found in 8.34% with roughly twice the results in study carried by Wakanker et al (4.95%) which is consistent with the hypothesis that women with previous ectopic pregnancy has greater proclivity toward a subsequent ectopic pregnancy.[10]

In present study, 12.2% cases were using an intrauterine device (IUD) as a method of contraception which is comparable with Khan et al (21.17%).[6]

In this study, the commonest site of occurrence of ectopic pregnancy among the cases seen was fallopian tube ectopic pregnancy 106 (98.14%). Among them most of the patients had ampullary ectopic (61.12%) pregnancy which is consistent with studies from Khaleeque et al (58.9%).[11] Isthmus (16.67%) found the second most common site of tubal pregnancy. Incidence of corneal/interstitial pregnancy was comparable to Khaleeque et al (8.34%).[11] Other sites such as the abdomen, ovaries or cervix are far less common but are associated with high mortality.

Main management modality of ectopic in our institute was laparotomy with unilateral salpingectomy (82.4%) and laparoscopic salpingectomy was done in 8.34% cases. Successful medical management was done in 4.6% cases.

The mode of presentation, i.e., whether the patient presented with bleeding per vaginum or lower abdominal pain or both, or with sudden collapse, did not have any association with the outcome of a ruptured ectopic gestation. An earlier case-control study in Cameroon by Mindjah et al has suggested that it is necessary to facilitate access to well-equipped healthcare facilities to enable the early diagnosis of ectopic pregnancies.[12] However, findings from this study have indicated strongly that despite the availability of tertiary care facility, the majority of ectopic pregnancies present as ruptured. This may suggest some deficiencies in public health awareness and a lack of health-seeking behaviour. Specifically, early reporting of secondary amenorrhea provides a crucial opportunity to diagnose ectopic pregnancies before they rupture and cause potentially life-threatening morbidity.

Limitations of this study is that it is a single-center audit with limited time duration and it is a retrospective study. There is need of data collection from prospective study spanning over a few years specifically for identification of certain risk factors. Apart from that medical method of management could not be studied properly due to late presentation of patients to hospital mostly after ruptured ectopic.

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 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. Ectopic pregnancy is a significant cause of maternal morbidity and mortality and hence requires a high index of suspicion especially those presenting with abdominal pain, amenorrhea and vaginal bleeding or any of these symptoms at early pregnancy. The majority of patients with ectopic pregnancies presented following a rupture. This suggests a deficiency in public health awareness and health-seeking behaviour for early reporting of missed periods in our setting. We recommend continual public health enlightenment on the symptoms of ectopic pregnancy and the need to present early to a competent health facility where they can be managed effectively to forestall complications.

Funding: No funding sources
Conflict of interest: None declared
Ethical approval: The study was approved by the Institutional Ethics Committee

REFERENCES

1. Walker JJ. Ectopic pregnancy. Clin Obstet Gynecol. 2007;50:89-99.

2. Promise ES, Oduro NE. Factors Associated with Ruptured Ectopic Pregnancy: A 10-Year Review at a District Hospital in Ghana. Obstetr Gynecol Int. 2022;2022.
3. Onyemachi E. Ectopic Pregnancy: A 10-Year Review of Cases in A Tertiary Health Institution in Umuahia, South East, Nigeria. Eur J Med Heal Sci. 2022;4(4):54-9.
4. Dimarco, Connie S. Speroff L, Glass RH, Kase NG, editors. Clinical Gynecologic Endocrinology and Infertility. Baltimore: Lippincott, Williams and Wilkins, 1999: 1-1200. Fertil Steril. 2000;74(2):425-6.
5. Ononuju, Chidiebere N. Ectopic pregnancy in Dalhatu Araf Specialist Hospital Lafia Nigeria-A 5-year review. Nig Postgraduate Med J. 2019;26(4):235.
6. Khan B, Deeba F, Khan W. A 10 year review of 255 cases of ectopic pregnancy. J Androl Gynaecol. 2013;1:4.
7. Shetty S, Shetty AK. A Clinical Study of Ectopic Pregnancies in Atertiary Care Hospital of Mangalore, India. Innovat J Med Heal Sci. 2014;4(1):305-9.
8. Berek JS, Berek DL. Berek and Novak's Gynecology. 15th ed. USA: Lippincott, Williams and Wilkins, A Wolters Kluwer Business. 2012;627.
9. Femke M. Ectopic pregnancy and pelvic inflammatory disease: a renewed epidemic? Eur J Obstetr Gynecol Reproduct Biol. 2010;151(2):163-7.
10. Rajendra W, Kedar K. Ectopic pregnancy-a rising trend. Int J Scientific Study. 2015;3(5):18-22.
11. Khaleeque F, Siddiqui RI, Jafarey SN. Ectopic pregnancies: A three year study. J Pak Med Assoc. 2001;51:240-3.
12. Mindjah A, Audrey Y. Risk factors for ectopic pregnancy in a population of Cameroonian women: A case-control study. Plos one. 2018;13(12):e0207699.

Cite this article as: Patel TL, Chouhan G. Clinical study on ectopic pregnancy. Int J Reprod Contracept Obstet Gynecol 2023;12:382-6.