

A Retrospective Study on Ectopic Pregnancy: A Two-Year Study in Patients of Tertiary Care Hospital, JamnagarNalini I. Anand¹, Nehal Gadher²¹Professor and Head, Department of Obstetrics & Gynaecology, Shri M.P. Shah Govt. Medical College, Jamnagar, Gujarat²2nd Year Resident, Department of Obstetrics & Gynaecology, Shri M.P. Shah Govt. Medical College, Jamnagar, Gujarat

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Conflict of interest: Nil

Abstract:**Background:** Diagnosis of ectopic pregnancy was frequently missed and rising trend in incidence of ectopic pregnancies necessitates awareness about risk factors, resultant morbidity and mortality. Aim of the study was to determine the incidence, clinical presentation, risk factors, treatment and morbidity and mortality associated with ectopic pregnancy.**Methods:** Retrospective analysis of ectopic pregnancy was done in Government Guru Govind Singh Hospital, from Jun 2022 to May 2024. The following parameters: age, parity, gestational age, risk factors, clinical presentation, site of ectopic, diagnostic methods, mode of treatment and morbidity were noted.**Results:** Out of 17195 deliveries, 67 were ectopic pregnancies {0.39%}. Women with age 20-25yrs had highest incidence (44.77%) and with least below 20yrs (11.94%). Ectopic pregnancies were common in multiparous women than primigravida (23.88%). Common symptoms: abdominal pain (88.6%), amenorrhea (76.5%), bleeding per vaginum (66.3%), asymptomatic.**Conclusions:** Early diagnosis, identifying of underlying risk factors and timely intervention in the form of conservative or surgical treatment will help in reducing the morbidity and mortality associated with ectopic pregnancy.**Keywords:** Amenorrhea, Ectopic pregnancy, Risk factors, Salpingectomy.

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Introduction

An ectopic pregnancy occurs when a fertilized egg implants outside the uterine cavity. [1] It is a leading cause of maternal morbidity and mortality during the first trimester. [2] Several risk factors have been identified, including a history of ectopic pregnancy, tubal surgery or sterilization, intrauterine contraceptive devices, known tubal pathology, infertility, assisted reproductive techniques, pelvic inflammatory disease (PID), smoking, previous abortions, multiple sexual partners, and prior childbirth. [3]

Understanding these risk factors is crucial for identifying women at higher risk and enabling early, accurate diagnosis. [4] Many of these risk factors are linked to prior damage to the fallopian tubes, such as past pelvic or abdominal surgeries or infections. [4] Studies suggest that Chlamydia trachomatis is associated with 30-50% of ectopic pregnancies. [5] Timely diagnosis is essential to prevent tubal rupture and allows for more conservative medical management. [6] This retrospective study aimed to assess the incidence,

clinical presentation, risk factors, treatment strategies, and associated morbidity and mortality of ectopic pregnancies at a tertiary care hospital. Early diagnosis plays a critical role in reducing maternal complications. The use of sensitive beta-hCG testing and high-resolution ultrasonography has significantly improved early detection, leading to better outcomes and lower mortality rates. [7]

Methods and Materials

This study was conducted in the Department of Obstetrics and Gynaecology at Guru Govind Singh Government Hospital and Shri M.P. Shah Government Medical College, Jamnagar, Gujarat, India, over a two-year period from June 2022 to May 2024. The objective was to analyze ectopic pregnancy cases managed during this timeframe.

Patient case sheets were traced using labor ward registers and operation theatre records. Data collected included the total number of ectopic pregnancies during the study period, along with demographic characteristics, clinical symptoms and

signs, diagnostic tools, treatment methods, and associated risk factors. Information on morbidity and mortality outcomes was also gathered to assess the impact of ectopic pregnancies on maternal health.

The study included women aged 18-45 years diagnosed with ectopic pregnancy through clinical signs, ultrasonography, or intraoperative findings. Patients managed surgically or medically, based on their condition, were also included. Exclusion criteria covered patients with other pregnancy complications such as miscarriages, molar pregnancies, or intrauterine pregnancy. Cases referred from other hospitals, patients with incomplete records, those who declined participation, or were discharged against medical advice were excluded.

Each patient underwent a detailed clinical evaluation, including obstetric history and physical examination. Diagnostic tools such as transvaginal ultrasonography and serum β -hCG tests were employed to confirm the diagnosis. Treatment strategies included medical management with

methotrexate for stable cases and surgical interventions, such as laparoscopic or open salpingectomy, for unstable or ruptured ectopic pregnancies. Post-treatment care focused on antibiotic prophylaxis, anemia management, and patient counselling regarding future pregnancies and follow-ups. Statistical analysis was performed using SPSS version 20 to examine demographic data, clinical presentations, and treatment outcomes. Descriptive statistics, including frequencies, percentages, and measures of central tendency, were used to assess trends in management and outcomes, with the goal of improving ectopic pregnancy care and maternal health in similar clinical settings.

Results

During the study period of 2 years, there were 17195 deliveries in our hospital and 63 cases were diagnosed as ectopic pregnancy giving the incidence of 0.39%. A majority of the patients [76.11%] belonged to the age group of 20-30 yrs (Table 1).

Table 1: Age of study population

Age	Number	Percentage
<20	8	11.94
20-25	30	44.77
26-30	21	31.34
>30	8	11.94

In the present study, 76.12% were multigravida and 23.88% were primi gravida (Table 2).

Table 2: Gravidity

Parameter	N	Percentage
Primi	16	23.88
2rd	34	50.74
3 rd	10	14.92
>3	7	10.44

In the present study, 88.6% had abdominal pain, followed by H/o amenorrhea in 76.5% H/O Bleeding pervaginum in 66.3%, signs of adnexal tenderness in 50.2% and asymptomatic in 15%.

UPT was positive in 92.8% of cases USG revealed ruptured ectopic pregnancy in 68.65% of cases,

unruptured in 25.37% of cases, heterogeneous mass with minimal free fluid n POD in 5.97% of cases.

Risk factors 47.16% had no risk factors 19.40% had H/O pelvic infection 14.92% had H/O infertility 2.98% had previous ectopic, H/O IUCD in 14.90%.

Table 3: Risk Factors

Risk factors	N	Percentage
H/O PID	13	19.40
H/O infertility	10	14.92
H/O previous ectopic	2	2.98
H/O IUCD	10	14.92
No Risk	32	47.76

In 91.04% of cases ectopic pregnancy was tubal and it was more common in left side (77.35%). A majority of the cases were ampullary pregnancies (73.13%) cornual pregnancy was seen in 10.44% and 2.98% were isthmal pregnancies while 4.47% were in fimbria (Fig 1).

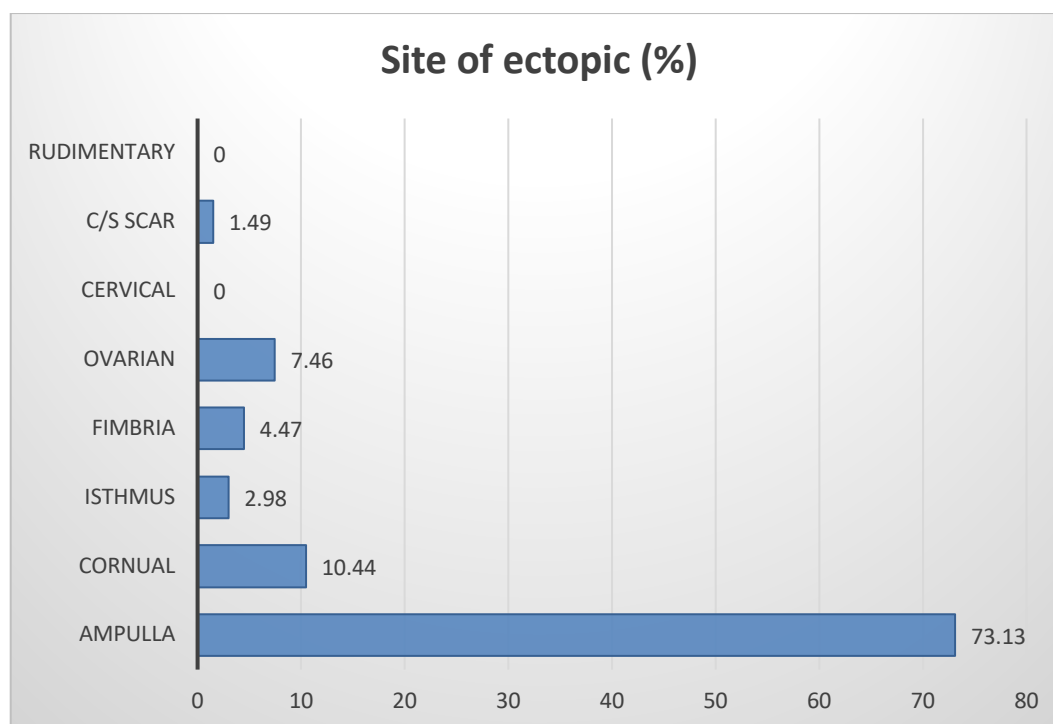


Figure 1: Site of ectopic (%)

Ruptured ectopic pregnancies were identified in 69.56% of cases during laparotomy, while 8.69% presented as tubal abortions, and 21.73% remained unruptured. The most common surgical procedure performed was unilateral salpingectomy, accounting for 91.30% of cases, followed by salpingo-oophorectomy in 8.69%. Additionally, 31.34% of cases were managed medically using intramuscular methotrexate, with either a single or multiple dose regimen. Morbidity among patients included anemia in 76.95% of cases, with 78.11% requiring blood transfusions. Wound infections were observed in 3.25% of cases. No instances of maternal mortality were reported during the study period.

Discussion

The incidence of ectopic pregnancy has risen over the past 20 years, with our study reporting a rate of 3.89 per 1,000 deliveries. Most women in the study (76.11%) were aged 20-30 years, aligning with the findings of Samiya Mufti et al. (75.4%), Panchal D et al. (71.66%), and Rashmi A Gaddagi et al. (70.2%).^{8,9} This age group reflects early marriage and family completion in India, coinciding with peak reproductive years. [10]

Additionally, 76.12% of the women with ectopic pregnancies in our study were multigravida, consistent with studies by Shraddha Shetty K et al. (83.9%), Panchal D et al. (81.66%), and Poonam et al. (83.6%), indicating that previous pregnancies and miscarriages may increase the risk of tubal damage. [9,11,12] A history of pelvic inflammatory disease (PID) was present in 19.40% of cases in our

study, similar to the 22.7% reported by Bhavna et al. [13] PID can damage the fallopian tubes, leading to ectopic implantation through endosalpingitis or exosalpingitis, which impairs embryo transport. Additionally, 14.92% of women in our study had a history of infertility, consistent with findings from Panchal D et al. (11.66%) and Samiya Mufti et al. (8.77%), with a known association between infertility, pelvic infections, and tubal pathology. [8,9] Prior ectopic pregnancy was found in 2.98% of cases, aligning with the studies by Samiya Mufti et al. (5.26%) and Uzma Shabab et al. (5%), highlighting the increased risk associated with previous ectopic pregnancies. [8,14]

Tubal sterilization was reported in 1.88% of cases, consistent with the 5% incidence found by Uzma Shabab et al. and Shrestha et al. [14,15] Incomplete tubal occlusion, often due to improper surgical techniques or postpartum changes, can lead to ectopic pregnancies.

Additionally, 14.92% of cases had an intrauterine contraceptive device (IUCD) in place, which can prevent intrauterine pregnancies but not ectopic ones, consistent with previous studies. [11,15,16] In our study, 92.8% of cases had positive urine pregnancy tests, aligning with Rashmi A Gaddagi et al. (97.3%) and WM Fgeeh (96%). [10,16]

The most common presenting symptoms were abdominal pain, amenorrhea, and abnormal vaginal bleeding, with clinical signs including abdominal tenderness, cervical excitation, and adnexal tenderness. Ultrasound, urine pregnancy tests, and

serum β -hCG tests were essential diagnostic tools, with studies recommending ultrasonography as the first-line investigation for symptomatic first-trimester women, followed by serum β -hCG for indeterminate results. [17] The ampullary part of the fallopian tube was the most frequent site of ectopic pregnancy, consistent with other studies. [18] In our study, 77.35% of cases involved the left fallopian tube, while 22.65% affected the right, reflecting findings from similar research. [19]

Surgical management remained the preferred treatment option due to the need for close monitoring and hospitalization associated with medical management. [20] Laparoscopy and medical therapy are increasingly popular due to reduced morbidity, shorter hospital stays, and fertility preservation, though early diagnosis and patient stability are critical factors in determining treatment. [21,22]

Morbidity in our study included anemia, blood transfusion, and wound infections. Timely identification of risk factors and early intervention are essential to improving outcomes in terms of morbidity, mortality, and fertility. [23] Notably, no maternal mortality was observed in our study, consistent with findings from Abbas A and Akram H. [24] study.

Conclusion

The rising incidence of ectopic pregnancies was evident from the findings of this study. All cases were identified through strong clinical suspicion, with ultrasonography aiding in confirmation. Although current trends favor conservative medical or surgical management, salpingectomy was the primary treatment used in this study. This approach was necessary as the majority (95%) of patients were either referred or arrived at the hospital late, after the ectopic pregnancy had already ruptured. Fortunately, no maternal deaths were reported during the study period.

Bibliography

- Walker II. Ectopic pregnancy. *Clinical Obstetrics and Gynecology*. 2007; 50:89-99.
- Mahboob U, Masher SH. Management of ectopic pregnancy: A two-year study. *Journal of Ayub Medical College Abbottabad*. 2006; 18(4):34-7.
- Cunningham FG, Leveno KJ, Bloom SL, Hauth JC, Rouse DJ, Spong CY. Ectopic pregnancy. In: *Williams Obstetrics*. 23rd ed. United States of America: McGraw-Hill Publishing; 2010:238-54.
- Karaer A, Avsar FA, Batioglu S. Risk factors for ectopic pregnancy: A case-control study. *Australian and New Zealand Journal of Obstetrics and Gynaecology*. 2006; 46:521-7.
- Turner C, Horner P. British Fertility Society guidelines for practice. *Human Fertility (Cambridge)*. 2010; 13:115-25.
- Barnhart KT. Ectopic pregnancy in clinical practice. *New England Journal of Medicine*. 2009; 361:379-87.
- Ory SJ, Villanueva AL, Sand PK. Conservative treatment of ectopic pregnancy with methotrexate. *American Journal of Obstetrics and Gynecology*. 1986; 154:1299-306.
- Shagufta SM, Samina M, Reyaz AR, Wasiqa K. Ectopic pregnancy: An analysis of 114 cases. *JK Practitioner*. 2012; 17(4):20-3.
- Panchal D, Vashnav G, Solanki K. Management of ectopic pregnancy: A study of inpatients. *National Journal of Integrated Research in Medicine*. 2011; 2(3):91-4.
- Gaddagi RA, Chandrashekar AP. Clinical study of ectopic pregnancy. *Journal of Clinical and Diagnostic Research*. 2012; 6:867-9.
- Shetty S, Shetty A. Ectopic pregnancy: A clinical study in a tertiary care hospital in Mangalore, India. *Innovative Journal of Medical and Health Science*. 2014; 4(1):305-9.
- Poonam Y, Uprety D, Banerjee B. Ectopic pregnancy: A two-year review at BPKIHS, Nepal. *Kathmandu University Medical Journal*. 2005; 3:365-9.
- Gupta BK, Pathania BK, Jindal M, Vohra R, Ahmed M. Risk factors for ectopic pregnancy: A case-control study in a tertiary care center. *Journal of Dental and Medical Sciences*. 2014; 13(3):23-7.
- Shabab U, Hashmi HA. Patterns and management of ectopic pregnancy. *Journal of Surgery Pakistan (International)*. 2013; 18(1):1-5.
- Shrestha J, Saha R. Comparing laparoscopic and open surgery for ectopic pregnancy management. *Journal of the College of Physicians and Surgeons Pakistan*. 2012; 22:760-4.
- Fageeh WM. Diagnosis and management of ectopic pregnancy: A four-year experience at King Abdul Aziz University Hospital. *Medical Science*. 2008; 15(2):1-5.
- Murray H, Baakdah H, Bardell T, Tulandi T. Diagnosis and treatment of ectopic pregnancy. *Canadian Medical Association Journal*. 2005; 173(8):905-12.
- Swenda TZ, Jogo AA. Ruptured tubal pregnancy in Makurdi, North Central Nigeria. *Nigerian Journal of Medicine*. 2008; 17(1):75-7.
- Udigwe GO, Umeonihu OS, Mbachu II. Ectopic pregnancy: A five-year review at NAUTH, Nnewi. *Nigerian Medical Journal*. 2010; 51:160-3.
- Chatterjee S, Dey S, Chowdhury RG, Ganguli D. Laparoscopic management of ectopic pregnancy in infertile women. *Al Ameen Journal of Medical Sciences*. 2009; 2(1):67-72.

21. Jurkovic D. Ectopic pregnancy. In: Edmonds DK, editor. Dewhurst's Textbook of Obstetrics and Gynaecology. 7th ed. USA: Blackwell Publishers; 2007.
22. Shah N, Khan NH. Presentation and risk factors of ectopic pregnancy. Journal of the College of Physicians and Surgeons Pakistan. 2005; 15:535-8.
23. Majhi AK, Roy N, Karmakar KS, Banerjee PK. Ectopic pregnancy: Analysis of 180 cases. Journal of the Indian Medical Association. 2007; 105(6):310-2.
24. Abbas A, Akram H. Audit of ectopic pregnancy at Maula Bakhsh Teaching Hospital, Sargodha. Professional Medical Journal. 2011; 18(1):24-7.