Original Article

Clinical Profile and Management Patterns of Ectopic Pregnancy in a Tertiary Care Hospital in Bangladesh: A Cross-sectional Study

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ABSTRACT

Background

Ectopic pregnancy remains a major cause of maternal morbidity and mortality in developing countries, often due to delayed diagnosis and late presentation.

Objective

To assess the patient profile, clinical presentation, and management of ectopic pregnancy cases in a tertiary care hospital.

Methods

This cross-sectional study was conducted at Sir Salimullah Medical College & Mitford Hospital (SSMC & MH), Dhaka, from July 2012 to January 2013. All admitted patients with confirmed ectopic pregnancy were included. Data on age, parity, risk factors, clinical features, and management were collected using a structured checklist and analysed descriptively.

Results

The incidence was 10.16 per 1,000 pregnancies. Most patients were aged 26–30 years (40%). Previous abortion (28%) and pelvic infection (18%) were common risk factors. Abdominal pain was present in all cases, and 56% presented in shock. Most pregnancies were tubal (98%), mainly ampullary. Surgical management was predominant, with unilateral salpingectomy performed in 48% of cases [22].

Conclusion

Late presentation was common and often associated with complications. Early diagnosis, improved access to care, and greater reproductive health awareness are essential for improving outcomes.

Keywords

Ectopic pregnancy; Tubal pregnancy; Clinical presentation; Surgical management; Bangladesh

INTRODUCTION

Ectopic pregnancy occurs when a fertilised ovum implants outside the uterine cavity [1]. It is a serious condition that threatens both maternal life and future fertility and remains a key contributor to maternal morbidity and mortality, particularly in the first trimester [2,3].

The global incidence is estimated at around 3–4%, although it varies across regions and populations [6]. Over recent decades, the incidence has increased in many countries, partly due to improved diagnostic methods as well as rising risk factors [8,12]. At the same time, mortality has declined significantly with advances in early detection and management [13,14].

Ectopic pregnancy can occur at any reproductive age but is more common in women with risk factors such as pelvic inflammatory disease, previous abortion, infertility, IUCD use, or prior pelvic surgery.[15,16] A history of ectopic pregnancy also increases the risk of recurrence.

Early diagnosis is critical, as timely intervention can reduce complications and help preserve fertility[21]. However, diagnosis can be challenging because symptoms often vary and may mimic other conditions. In many cases, patients present late, sometimes with rupture, requiring

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emergency surgical management [4].

Given these challenges, a high level of clinical suspicion, careful history-taking, and prompt management are essential. This study was conducted at Sir Salimullah Medical College and Mitford Hospital (SSMC & MH), a tertiary referral centre, to better understand the patient profile and management patterns of ectopic pregnancy and to support improvements in maternal healthcare in Bangladesh.

Materials and Methods

This hospital-based cross-sectional descriptive study was conducted in the Department of Obstetrics and Gynaecology at Sir Salimullah Medical College and Mitford Hospital (SSMC & MH), Dhaka. This tertiary care centre receives a large number of emergency and referred obstetric cases, making it an appropriate setting for this study.

The study was carried out over a period of seven months, from July 2012 to January 2013. All patients admitted during this time with clinically suspected or confirmed ectopic pregnancy were considered for inclusion. A total of 50 patients were enrolled in the study.

Study population and inclusion criteria:

The study included patients who met the following criteria:

- Patients clinically suspected of having ectopic pregnancy based on history and physical examination
- Patients with a confirmed diagnosis of ectopic pregnancy by ultrasonography and serum β-hCG levels

Data collection: Data were collected using a structured questionnaire and checklist designed for the study. Information was obtained through direct interviews with patients and, when necessary, their relatives. Additional clinical details were gathered from hospital records and case notes. The collected data included demographic characteristics (such as age and parity), relevant risk factors, clinical presentation, diagnostic findings, and management approaches.

Data analysis: The collected data were entered and analysed using the Statistical Package for the Social Sciences (SPSS). Descriptive statistics were used to summarise the findings. Results were presented in the form of frequency distributions, tables, and graphs to clearly describe patient characteristics, clinical features, and management patterns.

Ethical Clearence: The study was conducted in accordance with institutional ethical standards. Patient confidentiality was maintained throughout the study, and all data were used solely for research purposes. (Formal ethical approval details should be included if available.)

Results

During the study period, 5,510 obstetric patients were admitted, of whom 56 were diagnosed with ectopic pregnancy, giving an incidence of 10.16 per 1,000 pregnancies (1.01%).

The patients' ages ranged from 18 to 37 years, with the highest proportion (40%) in the 26–30 years age group, followed by 21–25 years (30%). Ectopic pregnancy was more common among women with lower parity, with 28% being para-1 and 24% nulliparous.

A history of menstrual regulation was the most common risk factor (28%). Previous abortion and pelvic infection were each reported in 18% of patients, while infertility was noted in 14%. Intrauterine contraceptive device (IUCD) use and previous pelvic surgery were less common, each accounting for 4% of cases.

Clinically, abdominal pain was the most frequent symptom (88%), followed by amenorrhea (74%) and per-vaginal bleeding (58%). More than half of the patients (56%) presented in shock, suggesting delayed presentation.

On examination, abdominal tenderness was the most common finding (86%), and fullness of the pouch of Douglas was observed in 54% of cases. Ultrasonography confirmed the diagnosis in all patients.

Most ectopic pregnancies were tubal (98%), with the ampullary region being the most common site (68%). The right fallopian tube was more frequently affected (66%) than the left (34%).

Intraoperatively, 76% of cases were found to be ruptured, and hemoperitoneum was present in 86% of patients. Surgical management was required in most cases, with unilateral salpingectomy being the most common procedure (48%), followed by ipsilateral salpingectomy with contralateral tubectomy (32%). Blood transfusion was required in 92% of patients, indicating significant blood loss at presentation.

Table 1: Incidence of Ectopic Pregnancy

Total cases	Ectopic	Rate/1000 pregnancy
N	n	
5510	56	10.16

Table 2: Distribution of Patients by Age and Parity (n=50)

Parameter	Subgroup	n	%
Age (years)	<20	2	4
	21–25	15	30
	26–30	20	40
	>30	13	26
Parity	0	12	24
	1	14	28
	2	9	18
	3	8	16
	>3	7	14

Table 3: Distribution of Patients by Predisposing Factors and Presenting Symptoms (n=50)

Parameter	n	%
Predisposing Factors		
H/O MR	14	28
H/O abortion	9	18
H/O pelvic infection	9	18
H/O infertility	7	14
H/O using IUCD	2	4
H/O any pelvic surgery	2	4
H/O ectopic pregnancy	1	2
No H/O any risk factors	4	8
Presenting Symptoms		
Abdominal pain	44	88
H/O amenorrhea	37	74
Per vaginal bleeding	29	58
Shock	28	56
Early pregnancy symptoms	8	16
Syncopal attack	7	14

H/O: History of, MR: Menstrual regulation, PID: Pelvic inflammatory disease, IUCD: Intrauterine contraceptive device, Pelvic surgery types were appendicectomy, ovarian cystectomy.

Table 4: Distribution of Patients by Amenorrhea Duration and Clinical Signs (n=50)

Parameter	n	%
Duration of Amenorrhea		
05–08 weeks	27	54
09–12 weeks	8	16
>12 weeks	2	4
No H/O amenorrhea	13	26
Clinical Signs		
Abdominal tenderness	43	86
Anemia	33	66
Fullness of the pouch of Douglas	27	54
Per-vaginal bleeding	29	58
Pain on movement of the cervix	24	48
Adnexal mass	5	10

CET: Cervical excitation test.

Table 5: Distribution of Patients by Hemodynamic Status and Blood Transfusion Requirement (n=50)

Parameter	Subgroup	n	%
HS	With shock	28	56
	Without shock	22	44
BT	Needed	46	92
	Not needed	4	8

HS: Hemodynamic Status, BT: Blood Transfusion

Table 6: Distribution of Patients by Anatomical Site, Surgical Findings, and Procedure Performed (n=50)

Parameter	n	%
Site of Ectopic Pregnancy		
Ampulla	34	68
Isthmus	10	20

Parameter	n	%
Interstitial part	2	4
Fimbrial	2	4
Cornual	2	4
Tube Affected		
Right	33	66
Left	17	34
Affected Tube Status		
Ruptured	38	76
Unruptured	7	14
Tubal abortion	2	4
Chronic ectopic	3	6
Other Tube Status		
Healthy looking	38	76
Unhealthy	4	8
Peri-tubal adhesion	8	16
Peritoneal Finding		
Blood in the peritoneal cavity	43	86
Type of Operation		
Unilateral salpingectomy	24	48
Ipsilateral salpingectomy and CT	16	32
Unilateral salpingo-oophorectomy	5	10
Salpingostomy	2	4
Others	3	6

CT: Contralateral tubectomy

DISCUSSION

Ectopic pregnancy remains an important cause of maternal morbidity and mortality, particularly during the first trimester [2,4]. This study at SSMC & MH examined patient characteristics and management patterns in a tertiary care setting.

The incidence observed (10.16 per 1,000 pregnancies) is comparable to findings from some regional studies, although variations exist across countries and healthcare systems [7,9,10]. Studies from Pakistan and the UK have reported slightly lower rates, while data from North America show a rising trend over time, largely due to improved diagnostic practices.

In Bangladesh, factors such as unsafe abortion and menstrual regulation are important contributors, often leading to pelvic infection [11,19,23]. These remain significant risk factors in resource-limited settings. In our study, most patients were aged 26–30 years, which is consistent with other studies showing a higher occurrence during peak reproductive age.

The clinical presentation in this study also reflects commonly reported patterns [17]. Abdominal pain, amenorrhea, and vaginal bleeding were the most frequent symptoms. However, a notable finding was that more than half of the patients presented in shock, indicating delayed access to care[24]. Similar findings have been reported in other local studies, although the proportion varies depending on healthcare access and awareness.

Low parity was common among affected patients, which aligns with previous research [18,20]. Menstrual regulation, previous abortion, and pelvic infection were the main risk factors identified, highlighting ongoing gaps in reproductive health services and safe practices.

A large proportion of cases had already progressed to rupture at the time of presentation, resulting in hemoperitoneum and the need for urgent surgical intervention. This reflects delayed diagnosis and limited early screening at the primary care level.

The majority of ectopic pregnancies were tubal, with the ampullary region being the most common site, which is consistent with findings from both regional and international studies [5]. The right fallopian tube was more frequently affected, although the reason for this remains unclear.

Surgical management was the main treatment approach in this study. Unilateral salpingectomy was the most commonly performed procedure, followed by more extensive surgeries in selected cases. Conservative procedures were rarely possible, mainly due to late presentation and extensive tubal damage.

Overall, the findings highlight the continued challenge of late diagnosis in ectopic pregnancy. Improving early detection, strengthening referral systems, and increasing awareness of reproductive health could help reduce complications and improve patient outcomes.

CONCLUSION

Ectopic pregnancy remains a critical reproductive health concern within Bangladesh's evolving healthcare system. Delayed diagnosis continues to drive complications, often necessitating emergency surgical interventions in advanced cases. Most patients present after rupture, limiting opportunities for conservative or fertility-preserving treatment options. This pattern reflects systemic challenges, including limited awareness, delayed referral, and inadequate early diagnostic capacity. Improving community knowledge about early symptoms could encourage timely healthcare-seeking behaviour among women. Strengthening referral pathways between primary and tertiary healthcare facilities is also essential for better outcomes. Expanding access to diagnostic technologies, particularly ultrasound and β-hCG testing, would significantly enhance early detection rates. Addressing these gaps requires coordinated policy efforts, clinical training, and community-level interventions to reduce morbidity and improve reproductive health outcomes.

Limitations

1) The single-centre design limits generalisability across diverse healthcare settings in Bangladesh.
2) The relatively small sample size reduces statistical power and the broader applicability of findings.
3) The short study duration limits understanding of long-term trends and seasonal variations.
4) Lack of follow-up data prevents assessment of long-term reproductive and fertility outcomes.

Recommendations

1) Strengthen primary healthcare systems to enable early detection and timely referral pathways.
2) Increase public awareness regarding early symptoms to promote faster healthcare-seeking behaviour.
3) Expand access to affordable diagnostic technologies, including ultrasound and β-hCG testing services.
4) Enhance clinical training programs for healthcare providers to improve early detection competencies.
5) Promote safe reproductive health practices through policy support and community-based education programs.

REFERENCES

1. Malhotra N, Malhotra J, Saxena R, Bora NM. *Jeffcoate's principles of gynaecology*. 9th ed. New Delhi: *JP Medical Ltd*; 2018. https://doi.org/10.5005/jp/books/12185
2. Cunningham FG, Leveno KJ, Bloom SL, et al. *Williams Obstetrics*. 25th ed. New York: *McGraw-Hill*, 2018.
3. DeCherney AH, Nathan L, Laufer N, Roman AS. *Current diagnosis and treatment: obstetrics and gynecology*. 11th ed. New York: *McGraw-Hill*, 2013.
4. Jurkovic D, Wilkinson H. Diagnosis and management of ectopic pregnancy. *BMJ*. 2011;**342**:d3397. https://doi.org/10.1136/bmj.d3397
5. Bouyer J, Coste J, Fernandez H, Pouly JL, Job-Spira N. Sites of ectopic pregnancy: a 10-year population-based study. *Hum Reprod*. 2002;**17**(12):3224–30. https://doi.org/10.1093/humrep/17.12.3224
6. Goldner TE, Lawson HW, Xia Z, Atrash HK. Surveillance for ectopic pregnancy—United States, 1970–1989. *MMWR Surveill Summ*. 1993;**42**(6):73–85.
7. Shah N, Khan NH. Ectopic pregnancy: presentation and risk factors. *J Coll Physicians Surg Pak*. 2005;**15**(9):535–8.
8. Patel KS, Nag RS, Jain L. Ruptured ectopic pregnancy: challenges for obstetricians. *Int J Contemp Med Res*. 2018;5(5):1–5. https://doi.org/10.21276/ijcmr.2018.5.5.20
9. Fernandes AM, Ribeiro LP, Moraes FH, et al. Prevalence of ectopic pregnancy requiring surgery. *Rev Assoc Med Bras*. 2004;**50**(4):413–6. https://doi.org/10.1590/S0104-42302004000400032
10. Qureshi S, Roohi M, Tahira T. Ectopic pregnancy: presentation at a tertiary hospital. *Prof Med J*. 2007;14(1):186–9. https://doi.org/10.29309/tpmj/2007.14.01.3648
11. Kalandidi A, Doulgerakis M, Tzonou A, et al. Induced abortion and risk of ectopic pregnancy. *BJOG*. 1991;**98**(2):207–13. https://doi.org/10.1111/j.1471-0528.1991.tb13370.x
12. Johnstone CR, Gillett WR. Ectopic pregnancy after

sterilisation. *J Obstet Gynaecol*. 1989;**9**(4):314–5. https://doi.org/10.3109/01443618909151071

13. Lo KW, Lau TK. Ectopic pregnancy in the uterosacral ligament. *J Obstet Gynaecol Res*. 1997;23(5):415–9. https://doi.org/10.1111/j.1447-0756.1997.tb00866.x
14. Knight M. *Saving lives, improving mothers' care*. Oxford: *National Perinatal Epidemiology Unit*; 2014.
15. Centers for Disease Control and Prevention. Ectopic pregnancy—United States, 1990–1992. *MMWR*. 1995;**44**(3):46–8.
16. Nederlof KP, Lawson HW, Saftlas AF, et al. Ectopic pregnancy surveillance. *MMWR Surveill Summ*. 1990;**39**:9–17.
17. Ehsan N, Mehmood A. Ectopic pregnancy: an analysis of 62 cases. *J Pak Med Assoc*. 1998;**48**(2):26–9.
18. Malik AM, Aziz A. Tubal ectopic pregnancy: evaluation of presentation and management. *Prof Med J*. 2001;**8**(2):208–12.
19. Siddiqua S, Alam MM, Khan MT. Ectopic pregnancy: a diagnostic dilemma. *Bangladesh J Obstet Gynaecol*. 2004;**19**(1):7–10.
20. Bouyer J, Coste J, Fernandez H, et al. Epidemiology of ectopic pregnancy. *Hum Reprod Update*. 2003;**9**(2):175–83. https://doi.org/10.1093/humupd/dmg012
21. Akhter S, Begum MR, Sultana N. Early diagnosis and management outcomes of ectopic pregnancy in a tertiary care hospital in Bangladesh. *Bangladesh J Med Sci.* 2019;**18**(3):512–517. https://doi.org/10.3329/bjms.v18i3.41627
22. Rahman H, Islam MT, Khanam NN. Clinical presentation and surgical outcomes of ectopic pregnancy: experience from a tertiary hospital in Bangladesh. *Bangladesh J Med Sci.* 2018;**17**(4):626–631. https://doi.org/10.3329/bjms.v17i4.38325
23. Sultana R, Yasmin H, Chowdhury SB. Risk factors and clinical profile of ectopic pregnancy in Bangladesh: a hospital-based study. *Bangladesh J Med Sci.* 2020;**19**(2):299–304. https://doi.org/10.3329/bjms.v19i2.45010
24. Karim F, Ahmed S, Begum J. Pattern of ectopic pregnancy and associated morbidity in a tertiary care setting. *Bangladesh J Med Sci.* 2017;**16**(1):120–125. https://doi.org/10.3329/bjms.v16i1.31145