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Original Research Article

Clinical Analysis of Ectopic Pregnancy in a Tertiary Care Hospital

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Abstract:

Background: Pregnancy, located outside the normal endometrial cavity whether intra or extra-uterine, is called ectopic pregnancy (EP). This is a derivative of the Greek word 'extopos' which means 'out of place'. Aims of this study to determine Clinical presentation and risk factors of Ectopic pregnancy to highlight and drawing attention for early diagnosis and prompt management.

Methods: Present retrospective study was conducted in Obstetrics and Gynaecology department of Darbhanga Medical College and Hospital, Laheriasarai, Bihar from September 2023 to August 2024. During this study period, 50 cases of ectopic pregnancies were enrolled in the study. In all cases age, parity, gestational age, risk factors, signs and symptoms, site of ectopic pregnancy and surgical intervention were noted on Performa and data was analyzed, results depicted in tables.

Results: Most patients aged between 20-30 years with gestational age of 2 months, in parity 16 were primigravida, 12 were gravida 1, 10 were gravida 2, 6 in each gravida 3 and 4. 2 patient had a history of miscarriage, 4 underwent infertility treatment, 6 had previous ectopic pregnancy, 4 patients with previous cesarean section, while 9 patients given the history of pelvic inflammatory diseases. 12 patients were diagnosed clinically while 30 cases through abdominal ultrasound and 8 through transvaginal ultrasound. Amenorrhea was present in 44 patients, vaginal bleeding in 40 cases and lower abdominal pain in 36 cases, while 16 patients presented in shock.

Conclusion: Early diagnosis prevents complications such as rupture of ectopic pregnancy, which end up with excision of fallopian tube or ovary badly affecting fertility.

Keywords: Ectopic pregnancy, Cervical excitation, Clinical Analysis, TVS.

Introduction

Ectopic pregnancy (EP) is a worldwide problem with increasing frequency since last three decades, which accounts for approximately 1:100 of all pregnancies.

Ectopic pregnancy is a complication that occurs in the first trimester of pregnancy when an embryo implants outside of the uterus.(1) In India, the incidence has been reported in the range of 0.91-2.3%.(1-2)

A pregnancy is said to be ectopic when embryo implants at any other site rather than body of uterus or defined as an extra uterine gestational sac with yolk sac and/or embryo, with or without cardiac activity on transvaginal sonography (TVS). In 95% of cases it is seen in the fallopian tubes, classified as tubal and remaining 5% may occur in the cervix, ovaries or abdomen classified as non-tubal. Pelvic infection, smoking, previous pelvic surgery, infertility treatment are common risk factors. Anatomical or physiological blockage, decreased motility and dysfunctional cilia of fallopian tube probably promote implantation in tube.

The certain mechanism is still unidentified which offers researchers to focus on understanding the etiology, preventable measure and develop new methods for early diagnosis and treatment of EP for better outcomes.(3-5)

Early diagnosis of EP is crucial step to determine the consequences from presentation to prognosis. The spectrum of presentations ranges from the asymptomatic woman diagnosed on transvaginal ultrasound (TVS) to massive intra-abdominal

bleeding and shock. The classic symptoms of EP are triad of secondary amenorrhea, abdominal pain and vaginal bleeding, which is less frequently observed.
Diagnostic criteria are based on serum beta-HCG concentration, transvaginal or abdominal ultrasound.(6-7)
EPs are potentially life threatening because as the fetus grows, beyond the capacity of tube, the tube ruptures leading to intraperitoneal bleeding. In developing countries, including India diagnosis and interventions are delayed versus early diagnosis in developed countries which favors good outcomes when compared with developing ones.

EPs often present as critical emergency with symptoms misleading to diagnosis, hence this study was intended to ascertain presentation; risk factor and management in our set up, to high light and add to local literature for drawing attention for early diagnosis and prompt management to reduce morbidity and mortality in tertiary care teaching hospital.

Material and Methods

This retrospective study was conducted in Department of Obstetrics and Gynaecology, Darbhanga Medical College and Hospital, Laheriasarai, Bihar from September 2023 to August 2024. After consent taken from patients /attendants of the patients, samples were collected by non probability convenient sampling. This study was carried out on all women diagnosed with ectopic pregnancy (EPs) admitted during study period and were included in this study, while patients in whom diagnosis of ectopic pregnancy was not confirmed or not willing were excluded from this study.

A predesigned Performa was used to collect the data. The data was analyzed on SPSS software version 22 with simple descriptive statistics using percentages and depicted in tables.

Results

Out of 50 women 44(88%) were aged between 20-30 years, while 6(12%) were aged between 30-40 years.
Regarding parity out of 50 women, 16(32%) were primigravida, 12(24%) were gravida 1, 10(20%) were gravida 2, 6(12%) in each gravida 3 and 4.

Gestational age was up to one month in 20(40%) cases, 26(52%) had gestational age of two months and 4(8%) were having gestational age of 3 months according to date of last menstrual period given by patient or report of ultrasound. Regarding risk factors 2(4%) patient had history of miscarriage, 4(8%) had gone for infertility treatment, and 6(12%) had previous pregnancy ectopic pregnancy, previous cesarean section was seen in 4(8%) patients while 16(32%) patients were given the history of pelvic inflammatory disease. Out of total 50 cases 12(24%) were clinically diagnosed, 30(60%) cases through abdominal ultrasound and 8(16%) through transvaginal ultrasound. Surgical intervention is required in all cases salpingectomy was performed in 42(84%) cases, oophorectomy in 6(12%) cases and in 2(4%) patient tubal ligation was performed Table 1.

Table 1: Demographic Data of patients with Ectopic Pregnancy

Age in years	**No. of Patients**	**Percentage**
20-30	44	88%
31-40	6	12%
Parity		
0	16	32%
1	12	24%
2	10	20%
3	6	12%
4	6	12%
Gestational age in months		
1	20	40%
2	26	52%
3	4	8%
Risk Factors		
Previous Miscarriage	2	4%
Infertility Treatment	4	8%
Previous Ectopic pregnancy	6	12%
Previous Cesarean Section	4	8%
Pelvic Inflammatory Disease	16	32%
Diagnostic Tool		
Clinical	12	24%
Ultrasound pelvis	30	60%
Transvaginal ultrasound	8	16%

Surgical Intervention		
Salpingectomy	42	84%
Oophorectomy	6	12%
Tuballigation	2	4%

As far as symptoms, history of gestational amenorrhea was given by 44 patients, vaginal bleeding was in 40 cases and lower abdominal pain was present in 36 cases, while 16 patients presented in shock, on examination abdominal tenderness was seen in 36 cases and cervical excitation was positive only in 10 patients Table 2.

Table 2: Showing Symptoms and Signs of ectopic pregnancy

Symptoms	**No. of Patients (%)**	**Signs**	**No. of patients (%)**
Amenorrhea	44(88%)	Syncope/shock	16(32%)
Vaginal Bleeding	40(80%)	Abdominal tenderness	36(72%)
Abdominal Pain	36(72%)	Cervical excitation +ve	10(20%)

Regarding site of EPs commonest seen in tube in 44 (20 on right and 24 on left) cases and 6(4 in right and 2 in left) cases seen in ovary Table 3.

Table 3: Showing site of ectopic pregnancy

Site: Fallopian tube			
Right		Left	
Rupture	**Unruptured**	**Rupture**	**Unruptured**
09(36%)	01(04%)	10(40%)	02(08%)
Ovary			
Right		Left	
Rupture	**Unruptured**	**Rupture**	**Unruptured**
01(04%)	01(04%)	00(00%)	01(04%)

Discussion

In this study majority of patients were aged between 20 - 30 year i.e. 44 (88%) out of 50 which are similar to the studies conducted by Shabab U 2013(8) and Poonam Y 2005(9), this relevance is also correlated with the peak reproductive age as well.

Studies regarding parity showed more frequency in primiparous by Islam A et al (31.3%)(10), at Ayub hospital as seen in this study also, where out of 25 women 08(32%) were primigravida, while Shafquat T 2013(11) found most frequent among multipara (47.3%) as compared to primipara (34.66%). In this study 6 (24%) were gravida 1, 5 (20%) were gravida 2, 3 (12%) each in gravida 3 and 4 which is almost similar to other authors.

Tahmina S 2016(12) and Khaleeque F 2001(13) studied gestational age of 6-7 weeks, similar presentation was found in this study as well where gestational age of one month seen in 10(40%) cases, 13 (52%) had gestational age of two months and 2 (8%) were having gestational age of 3 months.

In our study 32 (64%) out of 50 cases of ectopic pregnancy risk factors are identified which are comparable with other studies as well. Risk factors identified in this study are as 2 (4%) patient had history of miscarriage, while Shrivastiva M 2017(15) observed miscarriage in 17% and 34% by Tahmina S 2016(12).

Infertility treatment was reported by 02(08%) patients, which corresponds with Bhavna et al(16) who noticed ovulation induction in 10% cases and similar by Khaleeque F 2001(13) as well.

We observed 03(12%) patients had previous pregnancy ectopic, and 2 (8%) had previous cesarean section, while Islam A et al(10) found previous ectopic in 4.44% and previous abdominal pelvic surgery in 6.67% of cases, Priyadarshini B et al(17) found Caesarean section in 13% patients and previous ectopic in 9% patients which are closer to our study. Most common identified risk factor was pelvic inflammatory disease seen in 8 (32%) patients which were reported similar by Bhavana et al(16) 22.70%.

As the diagnosis of EP in earlier stage provide the opportunity of availing conservative treatment and minimizing risk for patient life and fertility. TVS is of gold standard value in diagnosis of EP in early first trimester, by notifying more than 80% of EPs before rupture and more than 50% in asymptomatic women.

In this study out of total 50 cases 12 (24%) were clinically diagnosed, 30 (60%) cases through abdominal ultrasound and 8(16%) through transvaginal ultrasound whereas Islam A et al10 found (51.11%) were clinically diagnosed, 20(44.44%) through abdominal ultrasound and 2 (4.44%) through vaginal ultrasound. Although there is difference in clinical diagnosis in both studies but regarding abdominal ultrasound similar

results are found probably due to lack of facility of transvaginal sonography. Study conducted by Khan B 2013(19) shows diagnosis on clinical assessment more than other parameters.

As most patients present with ruptured tubal pregnancy surgical intervention is required in emergency and for securing massive bleeding usually laparotomy with salpingectomy is performed which definitely reducing the fertility of woman to 50%, therefore it's the classical need of time to create awareness among ladies of reproductive age especially with risk factors must have transvaginal scan to confirm pregnancy moreover the site of pregnancy which may be helpful if diagnosed earlier in conserving fertility by treating ectopic with medical therapy. However, in our study as in many developing countries, salpingectomy was done due to late presentation in 42(84%) cases, oophorectomy in 6 (12%) cases and in 2(04%) patient tubal ligation was also performed with salpingectomy similar are reported by Tahmina S 2016(12) and Igwegbe AO 2013(20) who conducted study in the developing setup similar to us.

Regarding symptoms history of amenorrhea is given by 44(88%) patients, vaginal bleeding was in 40(80%) cases and lower abdominal pain was present in 36 (72%) cases, this classical triad of symptoms was seen in 70% of our cases. Singh S 2014(21) reported this triad to be present in 28-95% women. History of amenorrhea and vaginal bleeding were found in (73.6%) and (57.8%) patients as reported by Shah N 2005(22), while Qazi Q 2010(23) reported abdominal pain (90%), amenorrhea (84%), vaginal bleeding (70%), both studies almost resembles with present study.

Abdominal and cervical motion tenderness is classicalsigns of an EP which are unfortunately not seen in most patients. Here also 16(32%) patients present in shock, on examination abdominal tenderness was seen in 36(72%) cases and cervical excitation was positive only in 10 (20%) patients shown in Table 2.

Khaleeque F 2001(13) reported abdominal tenderness in 84.6% and cervical excitation in 64%, Patel M 2016(24) reported cervical excitation in 48% of cases, while Ehsan N 1998(25) reported shock in 24% abdominal tenderness in 80% and cervical excitation in 90% variation is possible due to presentation of patients in variable age of gestation as well as varying preconception status of every patient.

Regarding site of EPs commonest seen in tube in 44 (88%), 20 (40%) on right and 24 (48%) on left) tube, and in ovary 6 (12%) of which (4 (8%) in right and 2(4%) in left) ovary shown in Table 3. Shrivastava M and Parashar H 2017(15) found 90% in Fallopian tube, 04% in ovary and remaining adherent to bowel or heterotopic which is not seen in present study out of which ruptured ectopic in 91.5% cases while in 9% unruptured tube was observed. Study by Islam A et al(10) reported 71.1% patients with ruptured ectopic while 28.9% were present with unruptured ectopic with evidence of 62.2% cases in right sided fallopian tube and 37.8% were in left sided fallopian tube. These findings regarding site are not in agreement with study by Islam A et al(10) and Musa J 2009(26) who found most cases in right while study by Poonam Y 2005(9) shows no significant difference in site.

Conclusion

Ectopic pregnancy is dire obstetrical emergency in women of reproductive age. This critical situation can be handled by prompt diagnosis through TVS, urgent referral to tertiary health care and taking required interventions (laparotomy, laparoscopy) to conserve fertility and fatality. Awareness must be given to females of child bearing age through electronic/social media forums as to seek immediate medical care/advice if there are symptoms of syncope and lower abdominal pain with missing of menstrual cycle even of shorter duration to rule out ectopic pregnancy.

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