Section: Obstetrics and Gynaecology

Research

STUDY OF RISK FACTORS, CLINICAL PRESENTATION AND MANAGEMENT OF ECTOPIC PREGNANCY AT A RURAL TERTIARY CARE CENTER

V. Gomathi[1], K. Suriya Praba[1]

[1]Associate Professor, Department of Obstetrics and Gynaecology Melmaruvathur Adhiparasakthi Institute of Medical Science and Research, Chengalpattu, Tamil Nadu, India

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Corresponding Author:
Dr. V. Gomathi,
Email: drvgomathi@gmail.com
ORCID: 0000-0002-8274-0592

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Abstract

Background: Ectopic pregnancy is defined as the implantation of a fertilized egg outside the uterine cavity. Overall incidence of ectopic pregnancy has increased over the past few years, due to increase in STD rates, cesarean rates and increasing ART pregnancies. Present study was aimed to study risk factors, clinical presentation and management of ectopic pregnancy in a rural tertiary care center. **Materials and Methods:** Present study was single-center, prospective, observational study, conducted patients of clinical features of ectopic pregnancy, diagnosis was confirmed after investigations or during surgery. **Result:** During study period 65 cases of ectopic pregnancy were managed at our hospital. Mean age of patients was 26.87 ± 4.81 years & majority were from 26 -30 years age group (47.69 %). Common symptoms noted were abdominal pain (92.31 %), amenorrhea (78.46 %), vaginal bleeding (55.38 %) & triad of symptoms (47.69 %), Common risk factors observed were history of pelvic surgery (33.85 %), caesarean section with/without tubectomy (21.54 %), previous abortion (21.54 %), History of PID (20 %), tubectomy (16.92 %), history of infertility (9.23 %). Intra-operative, most common site was ampullary (60 %), other sites were isthmic (16.92 %), fimbrial (6.15 %), interstitial (3.08 %), cornual (1.54 %), caesarean scar pregnancy (1.54 %) & ovarian 10.77 %). Only 4 cases received medical management (6.15 %) as compared to surgical management (93.85 %). Laparotomy (72.31 %) was done among majority as compared to laparoscopy (21.54 %). Blood transfusion was required in 75.38 % cases, while post-operative febrile illness was observed in 16.92 % cases. Wound infection was observed in 3.08 % cases. No mortality observed. **Conclusion:** Diagnosis of ectopic pregnancy needs high index of clinical suspicion irrespective of the presence or absence of classical clinical triad of amenorrhea, abdominal pain and bleeding per vagina, sterilization status.

INTRODUCTION

Ectopic pregnancy is defined as the implantation of a fertilized egg outside the uterine cavity. The most common ectopic site of implantation (97%) is the fallopian tube. The remaining 3% of ectopic pregnancies are implanted in the cervix, ovary, peritoneal cavity, or uterine scars. Ectopic pregnancy should be suspected in any woman with child bearing age presenting to the clinic or casualty with symptoms such as amenorrhea, abdominal pain and vaginal bleeding.[1]

Tubal pathology, endometriosis, ovulation induction and ART are the probable reasons for association of infertility with occurrence of ectopic pregnancy. Although, overall incidence of ectopic pregnancy has increased over the past few years, due to increase in STD rates, cesarean rates and increasing ART pregnancies. death due to ectopic pregnancy has declined.[2,3]

Women who are subfertile are also at increased risk for an ectopic pregnancy because altered tubal integrity (or function) contributes to both condition.[4] However, half of all women who receive a diagnosis of an ectopic pregnancy do not have any known risk factors.[5] Treatment modality for ectopic pregnancy depends on site of pregnancy, ruptured or unruptured pregnancy, availability of laparoscopy, surgical expertise, need to retain fertility and choice of patient. Present study was aimed to study risk factors, clinical presentation and management of ectopic pregnancy in a rural tertiary care center.

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MATERIALS AND METHODS

Present study was single-center, prospective, observational study, conducted in Department of Obstetrics and Gynaecology, at Melmaruvathur Adhiparasakthi Institute of Medical Science and Research, India. Study duration was of 2 years (January 2020 to December 2021). Study approval was obtained from institutional ethical committee.

Inclusion Criteria

- Patients of clinical features of ectopic pregnancy, diagnosis was confirmed after investigations or during surgery, patient willing to participate in present study.

Exclusion Criteria

- Women who had intrauterine pregnancy,
- Who were not willing to participate or follow up
- Patient discharged against medical advice

Study was explained to patients in local language & written consent was taken for participation & study. Detailed history including age, socioeconomic status, and history suggestive of risk factors for ectopic pregnancy, menstrual and obstetric history were taken. previous spontaneous abortions and/or induced abortions, previous history of ectopic pregnancies, detailed history of infertility evaluation and treatment if any, current or past use of contraceptive measures like oral contraceptive pills (OCP), intrauterine device (IUD), levonorgestrel-releasing intrauterine system (LNG – IUS), emergency contraception (EC) pills; sexual history and treatment of pelvic inflammatory disease (PID) and sexually transmitted diseases (STDs) and history of tubal surgeries like sterilization and recanalization. General, systemic, abdominal and vaginal examination was done. TVS / TAS were done. Apart from routine surgical profile, β-hCG assay, UPT, coagulation profile, Renal function tests, Liver function tests.

Depending upon the clinical presentation and b-hCG, patients were streamlined to be managed conservative/expectant, medical and surgical laparoscopy/laparotomy management. Selected patients with unruptured ectopic pregnancy who were clinically stable and whose b-hCG was beyond 5000 IU/L were successfully managed with laparoscopic salpingectomy/ salpingotomy. Patients whose b-hCG were\2000 IU/L were given single-dose methotrexate and whose b-hCG were [2000 IU/L were given multiple-dose regime methotrexate. When medical treatment fails despite four doses of methotrexate, increasing trend of b-hCG on day 7, detection of cardiac activity and patient developing clinical evidence of ruptured ectopic pregnancy; surgical treatment was sorted to. Patients who underwent surgical management were treated with blood transfusion, antibiotics and supportive care.

Data was collected and compiled using Microsoft Excel, analysed using SPSS 23.0 version. Statistical analysis was done using descriptive statistics.

RESULTS

During study period 65 cases of ectopic pregnancy were managed at our hospital. Mean age of patients was 26.87 ± 4.81 years & majority were from 26 -30 years age group (47.69 %).

Table 1: Age distribution

Age groups (in years)	No. of patients	Percentage
19-25	18	27.69%
26-30	31	47.69%
31-35	9	13.85%
36-40	6	9.23%
>40	1	1.54%
Mean age (mean ± SD)	26.87 ± 4.81 years	

Common symptoms noted were abdominal pain (92.31 %), amenorrhea (78.46 %), vaginal bleeding (55.38 %) & triad of symptoms (47.69 %), Common signs were abdominal tenderness (75.38 %), adnexal tenderness (64.62 %), cervical motion tenderness (69.23 %), pallor (81.54 %) & shock (at admission) (27.69 %). Hemoperitoneum was noted among 87.69 % cases.

Table 2: Clinical presentation.

Presentation	Number of cases	%
Abdominal pain	60	92.31%
Amenorrhoea	51	78.46%
Vaginal bleeding	36	55.38%
Triad of symptoms	31	47.69%
Abdominal tenderness	49	75.38%
Adnexal tenderness	42	64.62%
Cervical motion tenderness	45	69.23%
Pallor	53	81.54%
Shock (at admission)	18	27.69%
Hemoperitoneum	57	87.69%

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No risk factors were noted in majority of cases (52.31 %). Common risk factors observed were history of pelvic surgery (33.85 %), caesarean section with/without tubectomy (21.54 %), previous abortion (21.54 %), History of PID (20 %), tubectomy (16.92 %), history of infertility (9.23 %), previous ectopic pregnancy (3.08 %), recanalization (1.54 %) & IUCD use (1.54 %).

Table 3: Risk factors

Risk factors*	Number of cases	%
No risk factors	34	52.31%
History of pelvic surgery	22	33.85%
Caesarean section with/without tubectomy	14	21.54%
Previous abortion	14	21.54%
History of PID	13	20.00%
Tubectomy	11	16.92%
History of infertility	6	9.23%
Previous ectopic pregnancy	2	3.08%
Recanalization	1	1.54%
IUCD use	1	1.54%

(* - Some patients had more than one risk factors)

Intra-operative, most common site was ampullary (60 %), other sites were isthmic (16.92 %), fimbrial (6.15 %), interstitial (3.08 %), cornual (1.54 %), caesarean scar pregnancy (1.54 %) & ovarian 10.77 %). Right side (56.92 %), was common than left side (43.08 %). At the time of presentation majority ectopic gestation cases were ruptured (89.23 %) as compared to unruptured (10.77 %).

Table 4: Intra-operative findings.

Site	Number of case (n = 53)	%
Ampullary	39	60.00%
Isthmic	11	16.92%
Fimbrial	4	6.15%
Interstitial	2	3.08%
Cornual	1	1.54%
Caesarean scar pregnancy	1	1.54%
Ovarian	7	10.77%
Side of tubal ectopic pregnancy		
Right side	37	56.92%
Left side	28	43.08%
Ruptured/unruptured		
Ruptured	58	89.23%
Unruptured	7	10.77%

Only 4 cases received medical management (6.15 %) as compared to surgical management (93.85 %). Laparotomy (72.31 %) was done among majority as compared to laparoscopy (21.54 %). Common surgical procedures were salpingectomy (84.62 %), salpingostomy (1.54 %), oophorectomy / cystectomy (10.77 %), cornual resection (1.54 %), excision of caesarean scar pregnancy (1.54 %).

Table 5: Management modalities.

Modalities	Number of cases (n = 53)	%
Medical management	4	6.15%
Surgical management	61	93.85%
Laparotomy	47	72.31%
Laparoscopy	14	21.54%
Salpingectomy	55	84.62%
Salpingostomy	1	1.54%
Oophorectomy / Cystectomy	7	10.77%
Cornual resection	1	1.54%
Excision of caesarean scar pregnancy	1	1.54%

Blood transfusion was required in 75.38 % cases, while post-operative febrile illness was observed in 16.92 % cases. Wound infection was observed in 3.08 % cases. No mortality observed.

Table 6: Morbidity associated with ectopic pregnancy.

Morbidity	Number of cases (n = 53)	%
Blood transfusion	49	75.38%
Febrile illness	11	16.92%
Wound infection	2	3.08%

DISCUSSION

The clinical presentation of ectopic pregnancy has changed from life threatening disease requiring emergency surgery to a benign condition and in asymptomatic women nonsurgical treatment options are available now. Although women with ectopic pregnancy frequently have no identifiable risk

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factors, a prospective case-controlled study has shown that increased awareness of ectopic pregnancy and a knowledge of the associated risk factors helps identify women at higher risk in order to facilitate early and more accurate diagnosis.[6]

Clinical manifestations are diverse. The classic triad of signs and symptoms of Ectopic pregnancy (present in less than 50% of patients) includes history of a missed menstrual period followed by abnormal vaginal bleeding, abdominal or pelvic pain, and a tender adnexal mass.[7] With the recent advances in early diagnostic techniques; with high resolution transvaginal ultrasonography, endoscopy, rapid and accurate serum human chorionic gonadotropin (hCG) detection, conservative surgical and non-surgical treatment of unruptured ectopic pregnancy is possible.[8]

Conservative management in the form of expectant and medical management should be considered as a first-line treatment modality, provided that the overall clinical picture suggests that it is safe to do so. If not, laparoscopic management of EPs appears to be the favored approach of management as compared to laparotomy.[9] The chance of intrauterine pregnancy in subsequent pregnancies is 40% after salpingectomy, 60% after conservative tubal surgery, 87% after medical treatment. The recurrent ectopic pregnancy rates after radical and conservative management are similar 10% - 20%.[10,11]

In India there is high prevalence of pelvic tuberculosis. Pelvic tuberculosis has been identified as an important etiological factor. In one study, genital tuberculosis was found in 13.2% of all cases of ectopic pregnancy.[12] Priyanka Bharti,13 studied 120 cases, incidence of ectopic pregnancy was 6.1per 1000 deliveries. Majority of the patients 61 (50.83%) belonged to 20-25 years. 89(74.17%) were multiparous. The most common site of ectopic pregnancy was fallopian tube 109(90.84%). The most common risk factor was pelvic inflammatory disease 52 (43.33%) followed by H/o previous abortion 27(22.5%) and H/o previous abdominopelvic surgery including tubal ligation, LSCS and appendicectomy 16(13.33%). Almost 97.5% patients in our study came with history of variable period of amenorrhea. 106(88.33%) cases complained of abdominal pain. 66.67% of the patients had bleeding or spotting per vaginum. All the patients with ectopic pregnancy were managed surgically. 95% patients underwent laparotomy and 5% patients had laparoscopic treatment

In study by Samantaray SR et al,[13] incidence of ectopic pregnancy was 5.3 per thousand deliveries. Majority of cases were in age group of 20 to 25 years (52.8%) and were gravida 3 and above (68%). The commonest risk factors identified were history of previous pelvic surgeries (37.7%) followed by history of abortion (18.8%). Commonest symptoms were abdominal pain (90.6%), amenorrhea (75.5%) and vaginal bleeding (47.2%). Only 41.5 % of cases had triad of symptoms. Fallopian tube (92.4%), specifically ampulla (62.3%) was the most frequent site affected. About 73.6% cases presented with ruptured tube. Surgery (94.3%) was the mainstay of therapy.

Das A et al,[14] noted that incidence of ectopic pregnancy was 0.95% of total births, peak age group of incidence was age of 26-30 years. Use of contraception and history of abortion were the main risk factors with contributions of 27.82% each respectively. Abdominal pain (86.95%), amenorrhea (81.73%), vaginal bleeding (54.78%) were the most frequent presenting complaints. Ampulla (58.26%) followed by cornua (8.69%) were the commonest sites of ectopic implantation. Ovarian pregnancies contributed to only 5.21%. A total of 69.56% patients presented with ruptured ectopic pregnancy but only 14.78% had hemodynamic instability. In majority of patients salpingectomy (61.73%) was done followed by salpingo-oophorectomy (8.69%). Only 11.30% received methotrexate in line of medical management and 59.13% required blood transfusion.

Avoiding unnecessary pregnancies, safe sex practices, using barrier contraceptives, prompt treatment of PID/STDs can bring down the incidence of ectopic pregnancies. Early diagnosis, timely referral, aggressive management, improvement of blood bank facilities can reduce the maternal morbidity and mortality associated with ectopic pregnancy.

CONCLUSION

Diagnosis of ectopic pregnancy needs high index of clinical suspicion irrespective of the presence or absence of classical clinical triad of amenorrhea, abdominal pain and bleeding per vagina, sterilization status. Early diagnosis and management in form of medical treatment or conservative surgery not only reduces maternal morbidity and mortality but also preserves future fertility.

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