Section: Obstetrics and Gynaecology

Research

ECTOPIC PREGNANCY: A SINGLE-CENTER PROSPECTIVE STUDY FROM SOUTH INDIA

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Received : 09/09/2022
Received in revised form : 08/10/2022
Accepted : 19/10/2022

Keywords:
Ectopic Pregnancy, Extrauterine Pregnancy, Methotrexate, Tubal Pregnancy.

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DOI: 10.47009/jamp.2022.4.5.120

Source of Support: Nil,
Conflict of Interest: None declared

Int J Acad Med Pharm
2022; 4 (5); 583-586

Abstract

Background: Ectopic pregnancy (EP) is a serious health concern for sexually active women of reproductive age. EP necessitates a high level of clinical supposition. On-time diagnosis and intervention, can reduce the serious consequences of the disease. In this study, we analyzed the EP patients' clinical profiles and also observed the outcome of the EP-associated risk. **Materials and Methods:** This is a prospective study, and data were obtained from a Villupuram medical college database between March 2018 and March 2019. For this study, data was collected and screened from registered OPD patients, hospital discharge summaries, case records, and other sources. We also assessed and analyzed various parameters descriptively, such as pre-operative medical status, pregnancy-related risk factors such as pelvic inflammatory diseases, age, clinical representation, and maternal outcome in terms of fatal consequences. **Result:** In 70 patients, the maximum number of cases were observed in the age group between 26 to 30 years (55.70%). The maximum incidence of ectopic pregnancy is observed in the second gravida. Out of 70% of patients, 11 patients were primigravida (16%). All cases were found to be tubal ectopic pregnancies. Out of this, 90% was found in the ampullary region, 4% in the isthmic region and 5.7% in the fimbria region. **Conclusion:** The most important risk factors for the etiology of EP were a prior history of abortion and pelvic inflammatory disease. However, there are multiple options for managing EP, but the best results were obtained if patients were attended to as soon as possible without any lag.

INTRODUCTION

EP is a potentially fatal condition that is the leading cause of mortality in the first trimester of pregnancy.[1] Normal pregnancies occur when a fertilized egg implants into the uterus; However, ectopic pregnancies occur when an embryo implants outside the uterus.[2] The estimated prevalence of ectopic pregnancy is between 1% and 2%, with the majority (97%) of cases found in various parts of the fallopian tube, such as isthmic, ampullary, and fimbrial, and the remaining 3% of cases found implanted in the cervix, uterine scar, and caesarean scar.[3,4] If EP continues can cause tubal rupture and internal bleeding, which is a complicated situation that should be treated as an emergency.[5]

There are also some additional identified risk factors for EP, which include endometriosis, tubal surgery, pelvic inflammatory disease, sexually transmitted diseases, intrauterine devices, and infection.[6] EP can occur in any sexually active woman of reproductive age.[4] It has been observed that the global incidences of EP have been increasing over the last few decades, which is due to an increase in cases of tubal surgeries, salpingitis (a fallopian tube infection), and ovulation induction.[7] EP accounts for 4% to 10% of deaths worldwide during pregnancy, while In India, it accounts for 3.5-7.1% of deaths. In North America, the incidence of EP has increased from 4.5 per 1000 childbearing cases in 1970 to 19.7 per 1000 childbearing cases in 1992.[8] Despite the fact that the number of ectopic pregnancy cases has been increasing for decades, the incidence of EP rupture and pregnancy-related deaths has decreased due to advancements in detection technology and efficient management skills. Laparotomy or laparoscopy is used for surgical management, and medical treatment is typically systemic, local, or expectant.[9] Medical and surgical management of EP with lower abdominal pain or vaginal bleeding at the appropriate time can prevent fatal consequences and future fertility issues in women.[10] With this rationale, the

ISSN (O): 2687-5365; ISSN (P): 2753-6556

current prospective study aimed to extrapolate data from a single center in South India to estimate the clinical presentation and various aspects of EP management with the goal of suggesting measures to avoid or control incidences of disease.

MATERIALS AND METHODS

A prospective study was conducted over a period of 1 year, from March 2018 to March 2019, in the Department of Obstetrics and Gynaecology at Government Villupuram medical college, Villupuram, Tamil Nādu. Patients included all who were diagnosed with cases of ectopic pregnancy admitted to this institution. On admission, detailed clinical history with the following parameters was taken. Patient identity, complaints like period of amenorrhea, bleeding, pain in the abdomen, syncopal attacks, backache, obstetric history including parity, previous history of abortion, previous history of tubectomy history of PID, and any history of contraception like IUCD OCP and sterilization were documented and resulted tabulated. Clinical evaluation included general examination for anemia shock vitals like pulse, blood pressure, temperature, cardiovascular and respiratory system examination, abdominal palpation for tenderness mass and distension of abdomen. Per speculum examination for bleeding and bimanual examination, the size of the uterus, cervical motion tenderness, forniceal mass, and the mobility of the uterus were assessed. On admission, various investigations like platelet count, renal function test, blood grouping, urine pregnancy test (UPT), and USG were done. The diagnosis was confirmed with clinical findings, UPT and high- resolution transvaginal scan (TVS). As most of the patients are presenting late to our institution, all were diagnosed with clinical findings UPT and TVS, and in acute cases, with blood transfusion, emergency laparotomy was proceeded to save the patients. A majority of most of the patients presented with ruptured ectopic pregnancy and proceeded to partial salpingectomy. Post-operatively, patients were managed with adequate blood and blood products and higher antibiotics.

RESULTS

Overall, a total of 70 patients were examined and treated. Most of the patients belonged to the 18-40 age group, of which the maximum number of cases were observed in patients within 26-40 years.

The maximum incidence of ectopic pregnancy is observed in the second gravida; of the 70% of patients, 11 patients were primigravida (16%), while 2nd, 3rd, and > 3 gravidae were 39%, 34%, and 11%, respectively. Risk factors for ectopic pregnancy observed were the previous history of PID (4% of total cases), other surgical procedures like LSCS (7%), previous 2 LSCS (4%), and tubectomy (10%). Overall, 10% of the ectopic pregnancies presented as sterilization failure cases. A previous history of abortion was observed in about 10% of cases. IUCD insertion (1.4%) also was associated with the occurrence of ectopic pregnancy.

Analysis of ectopic pregnancy showed that risk factors for ectopic pregnancy observed were the previous history of PID (4% of total cases), other surgical procedures like LSCS (7%), and previous 2 LSCS (4%) and tubectomy (10%). A total of 10% of the ectopic pregnancies presented as sterilization failure cases. A previous history of abortion was observed in about 10% of cases. IUCD insertion (1.4%) also was associated with the occurrence of ectopic pregnancy.

All cases were found to be tubal ectopic pregnancies. Out of this, 90% were found in the ampullary region, 4% in the isthmic region, and 5.7% in the fimbria region. In this ongoing study, no incidence of ovarian or abdominal pregnancies was found. The site of the pathology was observed during surgery which demonstrated that a total of 38 cases had pathology on the right side of the fallopian tubes and 32 on the left side. The results indicated more incidence of ectopic in the right side of the fallopian tubes. The typical triad observed in an ectopic pregnancy is a period of amenorrhea, pain abdomen, and bleeding. This triad is present in about 74% of the total cases. Majority of the patients presented with amenorrhea (99%) and pain abdomen (94%). Nearly 6% of the patients presented with unruptured ectopic pregnancy. The deadliest complication of ectopic pregnancy is hypovolemic shock due to internal haemorrhage was observed in about 60% of the total cases needing resuscitation with blood transfusion, ICU care etc. USG has become one of the gold standard techniques for diagnosing ectopic pregnancy. Most of the patients presented in the ruptured ectopic state (94%) with the associated finding of free fluid in the peritoneum (94%). The presence of blood in the abdominal cavity indicates significant intraabdominal haemorrhage.4% of the cases presented with inhomogeneous mass adjacent to ovaries or as a gestational sac with or without cardiac activity in the adnexal region with an empty uterus or with a pseudo sac.

On laparotomy for ectopic pregnancy, 91% of the case were found to be ruptured with hemo-peritoneum. Tubal abortion was noted in about 2.8% of the total cases. Tubal abortion cases were managed conservatively to preserve fertility function. Most of the cases ended in salpingectomy (right side with 26%, left side with 27%). Nearly 3% of the total cases required bilateral salpingectomy. Nearly 4% ended in fimbriectomy depending upon the side of the presentation. Salpingo-oophorectomy was done in about 40% of the cases due to previous surgeries like LSCS, tubectomy, and associated PID. About 97% of the patients required blood transfusion during the procedure.

ISSN (O): 2687-5365; ISSN (P): 2753-6556

Table 1: Distribution of patient's characteristics

Patient Characteristics		Number	Percentage
AGE	<20	1	1.40%
	20 TO 25	24	34%
	26 TO 30	39	55.70%
	>30	6	8.50%
PRIMI	2ND	27	39%
	3RD	24	34%
	>3	8	11%
RISK FACTORS	H/O PID	3	4%
	H/O TUBECTOMY	7	10%
	H/O PREVIOUS ECTOPIC	0	0%
	H/O IUCD	1	1.40%
	H/O ABORTION	10	14%
	H/O PREVIOUS LSCS	5	7%
	H/O PREVIOUS 2 LSCS	3	4%
SITE	AMPULLA	63	90%
	ISTHMUS	3	4.20%
	FIMBRIA	4	5.70%
SYMPTOMS	AMENNORRHEA	69	99%
	PAIN ABDOMEN	66	94%
	BLEEDING	52	74%
	UNRUPTURED	4	5.70%
	SHOCK	42	60%

Table 2: Distribution of patient's clinical characteristics

Patient Characteristics		Number	Percentage
USG	RUPTURED	66	94%
	UNRUPTURED	4	5.70%
	FLUID IN THE PERITONEUM	66	94%
LAPAROTOMY	RUPTURED	64	91%
	UNRUPTURED	4	5.70%
	TUBAL ABORTION	2	2.80%
SURGERY	RIGHT SALPHINGECTOMY	18	26%
	RIGHT SALPINGO-OOPHORECTOMY	20	29%
	LEFT SALPHINGECTOMY	19	27%
	LEFT SALPINGO-OOPHORECTOMY	8	11%
	BILATERAL SALPHINGECTOMY	2	3%
	LEFT FIMBRIECTOMY	2	3%
	RIGHT FIMBRIECTOMY	1	1.40%
BLOOD TRANSFUSION	YES	68	97%
	NO	2	3%

DISCUSSION

This is the first study to report on life-threatening complications during pregnancy and how they are managed to the best of our knowledge. This research was carried out in a tertiary care hospital in South India. According to Tahmina et al., the prevalence of EP in Indian pregnant women with no mortality is 0.91%.[11] Most critical risk associated with EP is prior spontaneous abortion and symptoms of pelvic inflammatory disease.[11] Early detection of EP necessitates a substantial proportion of EP indicators because the symptoms of amenorrhea, vaginal bleeding, and lower abdominal pain occur in only 30-40% of EP cases.[8] On-time diagnosis and intervention are required in EP. Otherwise, it causes serious consequences.

The symptoms of EP range from asymptomatic to ruptured and inducing a state of shock.[12] All cases were found to be tubal ectopic pregnancies. Out of this, 90% was found in the ampullary region, 4% in the isthmic region, and 5.7% in the fimbria region.[13] In this ongoing study, no incidence of ovarian or abdominal pregnancies was found. The high incidence rate at our center was primarily due to the high number of referrals. In the current study, we discovered that 64.2% of pregnancies had symptoms of one or more associated risk factors, which is consistent with other studies that found 66% of patients had similar issues. Barnhart's study, on the other hand, revealed that 50% of patients seemed to have no potential risks.[14] A significant proportion of patients (30.2%) were found to have a pelvic inflammatory disease with a prior abortion history(27.3%). The high incidence of these associated risk factors in the current work is due to the low socioeconomic background of the referred patients and the fact that these women have given birth more than once. The same pattern of PID (41.2%) has been observed in the study of Seo and his colleagues.[15] In addition to this, in other studies, PID as a potential risk factor of EP showed involvement of up to 20%, while induced abortion showed an involvement of up to 36%.[15] Medical or surgical treatment options are available following EP confirmation. It has been discovered that surgical treatment has a high risk of morbidity.[7] As a result, for these patients, early diagnosis, efficient

ISSN (O): 2687-5365; ISSN (P): 2753-6556

management, and prompt response without any delay in referral are critical. EP avoidance can only be accomplished by preventing or controlling the disease's most common associated risk factors such as induced abortion and PID. Because the clinical examination is 100% sensitive, having a high index of clinical suspicion for EP will aid in early diagnosis and best management.

CONCLUSION

The most important risk factors for the etiology of EP were a prior history of abortion and pelvic inflammatory disease. However, there are multiple options for managing EP, but the best results were obtained if patients were attended to as soon as possible without any lag.

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ISSN (O): 2687-5365; ISSN (P): 2753-6556