Original Article

Ectopic pregnancy: A life-threatening condition

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Abstract

Background: Ectopic pregnancy is a life-threatening emergency, and a significant cause of morbidity and mortality in female patients. **Objective:** The aim of this study is to determine the incidence, clinical presentation, risk factors, and management of post operative complications, morbidity and mortality associated with ectopic pregnancies at Bharati Vidyapeeth Deemed University Medical College and Hospital, Sangli. **Material and Methods:** This was a retrospective study of ectopic pregnancies managed at Bharati Vidyapeeth Deemed University Medical College and Hospital, Sangli during the study period (Dec 2014 to March 2016). Total patients diagnosed as ectopic pregnancy and total number of delivered at Bharati Vidyapeeth Deemed University Medical College and Hospital, Sangli during study period are compared. There were total 50 cases [4.55%] of ectopic pregnancies out of 1100 deliveries. There were 50 cases of ectopic among 500 gynacology admissions. **Results**: Incidence of ectopic pregnancy in our study was 4.55%. The mean age of the patients was 28 years. 45of 50 (90%) had ruptured ectopic pregnancies and four (08%) were unruptured. In 48 of 50 patients (96%) clinical presentation was abdominal pain. Previous history of abortion was commonest risk factor. It was seen in 28 (56%) cases. No death was recorded. **Conclusion:** Ectopic pregnancy is a major cause of maternal morbidity. It is one of the life threatening condition. It is one of the reproductive health challenge . It affects future obstetric carrier of females. It may be due to tubal infections from previous induced abortions. Other risk factors are tubal surgery, various infertility treatments.

Keywords: ectopic, emergency, pregnancy, life-threatening, fallopian tube, anemia, pelvic inflammatory disease (PID).

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INTRODUCTION

An ectopic pregnancy occurs when a fertilized ovum implants outside the normal uterine cavity.[1-3] It is a common cause of morbidity and mortality in women of reproductive age. The etiology of ectopic pregnancy remains uncertain although a number of risk factors have been identified.[6] Its diagnosis can be difficult. In developed countries, diagnosis relies on a combination of u ultrasound scanning and serial serum beta-human chorionic gonadotrophin (β-hCG) measurements. Ectopic pregnancy is one of the few medical conditions that can be managed expectantly, medically or surgically.[1,3,5]

Ectopic pregnancy is a condition of immense gynecological importance in the developing countries. It is associated with high morbidity and mortality. It is the leading cause of maternal mortality in the first trimester and accounts for 10%–15% of all maternal deaths .[1] Majority of patients present late with rupture and hemodynamic compromise in developing countries.[2] It is a cause of fetal wastage and associated with recurrence and impairment of subsequent fertility.[3]

The true incidence of ectopic pregnancy is difficult to determine .[3] Overall incidence is increasing worldwide.[3, 4] Fatality rate has decreased[5,4]. This may be due to better antibiotics used in pelvic inflammatory disease (PID) that permit tubal patency with decreased luminal damage following infection. This may be due to improvement in assisted reproductive technology and improved diagnostic techniques.[1,6,7] The reported incidence of this life-threatening condition varies from 0.67% in western countries[3] and 0.9%–4.38% in Nigeria[8, 9]. More than 95% of ectopic pregnancies occur in the fallopian tube, making this the commonest site.[1,5,6] Early treatment of an ectopic pregnancy can help preserve the chance for future healthy pregnancies.

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The etiology of ectopic pregnancy is not well understood.[10] There are, multiple risk factors which may be associated with ectopic pregnancy. Previous history of abortion, Pelvic inflammatory disease, puerperal sepsis, and the use of intrauterine contraceptive devices may act as sources of pelvic infection and major risk factors for tubal ectopic pregnancy.[11,12,13] Other risk factors are previous tubal surgeries like recanalisation or tubal repair in previous tubal ectopic, endometriosis, pelvic surgeries, exposure to diethylstilbestrol in utero, conception following induction of ovulation and in vitro fertilization and embryo transfer (assisted reproductive technology), history of infertility, race, age above 35 years, use of progesterone-only pills, chromosomally abnormal embryo and cigarette smoking.[14,15] But ectopic pregnancy may be seen without any obvious risk factors.[14]

Ectopic pregnancies could be asymptomatic particularly before rupture. When ruptured, symptoms could be acute or subacute.6 Ectopic pregnancy is a major health problem among woman of reproductive age. The aim of this study is to determine the incidence, clinical presentation, risk factors, and management, post operative complications, morbidity and mortality associated with of ectopic pregnancies.

MATERIALS AND METHODS

This was a retrospective study of ectopic pregnancies managed at Bharati Vidyapeeth Deemed University Medical College and Hospital Sangli. during the study period (Dec 2014 to March 2016). It is a tertiary health care centre. All diagnosed cases of ectopic pregnancy admitted in gynecology clinic that were managed in the gynecological ward were included in the study. The diagnosis of ectopic pregnancy was made mainly by history, clinical examination, laboratory investigations and ultrasound examination. The medical records of all the patients admitted and managed for ectopic pregnancy during the study period were retrieved, and relevant data on age, parity, clinical presentation, risk factors, findings at laparotomy, and the outcome of treatment were collected. The gynecology and total birth records for the study period were also collected from the gynecology and labor ward record books. All those whose medical records were incomplete or missing were excluded from the study.

RESULTS

Table 1

Age (years)	Number (n = 50)	Percentage
20–24	18	36%
25–29	25	50%
30–34	05	10%
35 above	02	04%
Total	**50**	**100%**
Parity		
Nulligravida	02	04%
Primigravda	02	04%
2nd gravida	12	24%
3rd gravida	25	50%
4th gravida andabove	09	18%
Total	**50**	**100%**
Marital status		
Married	45	90%
Unmarried	05	10%
Total	**50**	**100%**

Table 2

Presentation	Number	Percentage
Abdominal pain	48	96%
Amenorrhea	49	98%
Vaginal bleeding	45	90%
Giddiness	40	80%
Shock	43	86%

Table 3: Duration of amenorrhea

Duration	Number	Percentage
Less than 7 weeks	46	92
8–12 weeks	04	8
Total	**50**	**100**

Table 4 Site of ectopic pregnancy

Site of ectopic pregnancy	Number	Percentage
Ampulla	27	54
Isthmus	10	20
Fimbriae	07	14
Interstitial/corneal	05	10
Ovarian	01	2
Total	**50**	**100**

Table 5: Risk factors found in patients with ectopic pregnancy

Risk factor	Number	Percentage
Previous abortion	28	56
Pelvic inflammatory disease	19	38
Puerperal sepsis	02	4
Tubal recanalisation	01	2
Post tubectomy	02	4
Previous ectopic pregnancy	01	2
Intrauterine contraceptive device	01	2

Table 6

Surgery	Number
Salpingectomy	45(90%)
Salpingostomy	04(8%)
Salpingo-oophorectomy	01(2%)
Total	**50(100%)**

Table 7 Postoperative complication

Morbidity	Number of patients
Anemia	48 (96%)
Fever/pyrexia	10 (20%)
Wound sepsis	02 (4%)
Urinary tract infection	1(2%)
Maternal death	0
Total	**50(100%)**

DISCUSSION

An ectopic pregnancy occurs when a fertilized ovum implants outside the normal uterine cavity.[1-3] The aetiology of ectopic pregnancy remains uncertain although a number of risk factors have been identified.[6] However, it is thought that tubal implantation occurs as a result of a combination of arrest of the embryo in the Fallopian tube and changes in the tubal microenvironment that allow early implantation to occur. The incidence of ectopic pregnancy in our study was 4.55% (50of 1100deliveries), which constituted 10% (50 of 500) of all gynecological admissions during the study period. The mean age of the patients was 28 years. Most of patients were multi gravid. Incidence was slightly more than that reported in Benin, Nigeria (2.31%), Ife and Ilorin (1.2% and 1.02%), Abakaliki(1.98%) in 2003 respectively.[18] The incidence of ectopic pregnancy is rising all over now a days.[15,16] This may be because there is risky sexual behavior in this reproductive age group. Ectopic pregnancy is more common in women attending infertility clinics[4] Indeed the first IVF pregnancy, before the first IVF live birth, was a tubal ectopic pregnancy.[8] In the developed world, between 1% and 2% of all reported pregnancies are ectopic pregnancies .The incidence is thought to be higher in developing countries. Incidence in the developed world has remained relatively static in recent years, between 1972 and 1992 there was an estimated six-fold rise in the incidence of ectopic pregnancy. This increase was attributed to three factors: an increase in risk factors such as pelvic inflammatory disease and smoking in women of reproductive age, the increased use of assisted reproductive technology (ART) and increased awareness of the condition, facilitated by the development of specialised early pregnancy units (EPUs). The most common clinical presentation was abdominal pain seen in 48 (96%) patients. 90% had vaginal bleeding, 98%presented with amenorrhea, in 46(92%) patients gestational age was less than 7 weeks 40(80%)presented with giddiness .43(86%) had shock. The commonest site of ectopic gestation was the ampullary region of the fallopian tube 27[54%].45(90%) patients had ruptured ectopic pregnancies. 24 (48%) patients had a past history of induced abortion, while 19 (38%) had pelvic inflammatory disease, as risk factors for ectopic gestation. *Chlamydia trachomatis* has been linked to 30-50% of all ectopic pregnancies. Other associated risk factors were puerperal sepsis in2(4%) and post tubectomy in 2(4%). The risk of ectopic pregnancy increases with advancing maternal age, with age over 35 years being a significant risk factor.[5] Hypotheses for this association include the higher probability of exposure to most other risk factors with advancing age, increase in chromosomal abnormalities in trophoblastic tissue and age-related changes in tubal function delaying ovum transport, resulting in tubal implantation. Women with a previous history of ectopic pregnancy also have an increased risk, which increases further in proportion to the number of previous ectopic pregnancies. In one study the chances for having an ectopic pregnancy was 12.5 after one previous ectopic pregnancy and 76.6 after two. Some types of contraception, such as progestogen-only contraception and the intrauterine contraceptive device, are associated with an increased incidence of ectopic pregnancy when there is contraceptive failure, without necessarily increasing the absolute risk of ectopic pregnancy. Cases of ectopic pregnancy may be associated with smoking. Several mechanisms for this association have been suggested, including one or more of the following: delayed ovulation, altered tubal and uterine motility and microenvironment, or altered immunity. The majority of the cases were diagnosed through history-taking, clinical physical examination. Colpopuncture was positive in 46(92%) cases. Ultrasound confirmed diagnosis in 49(98%) cases. Early diagnosis reduces the risk of tubal rupture and allows more conservative medical treatments to be employed.[1] Its diagnosis can be difficult. In current practice, in developed countries, diagnosis relies on a combination of ultrasound scanning and serial serum beta-human chorionic gonadotrophin (β-hCG) measurements. With the introduction of high-resolution TVS, the discriminatory β-hCG level of 6500 IU/l is now less helpful. Patients with an ectopic pregnancy commonly present with pain and vaginal bleeding between 6 and 10 weeks' gestation.[1] Cervical motion tenderness has been reported in up to 67% of cases, and a palpable adnexal mass in about 50%.[9] More recently, it has been reported that one third of women with ectopic pregnancy have no clinical signs and 9% have no symptoms. A ruptured ectopic pregnancy should be strongly suspected if a woman has a positive pregancy test and presents with syncope and signs of shock including tachycardia, pallor and collapse, abdominal tenderness. While a bimanual examination may reveal tenderness, cervical excitation and an adnexal mass, great caution is required as this may exacerbate bleeding. The 1997-1999 and 2003-2005 Confidential Enquiries into Maternal Deaths reports highlighted that most of the women who died from ectopic pregnancy were misdiagnosed in the primary care or accident and emergency settings. In the 2006-2008 Centre for Maternal and Child Enquiries (CMACE) report, four of the six women who died from early ectopic pregnancy complained of diarrhoea, dizziness or vomiting as early symptoms, without triggering any consideration of extrauterine pregnancy by their medical attendants.

Ectopic pregnancy is one of the few medical conditions that can be managed expectantly, medically or surgically.[1,3,5]

Salpingectomy was done in 45((90%) cases and salpingostomy in 4(08%) cases. A laparoscopic approach is preferable to an open approach in a patient who is haemodynamically stable. Laparoscopic procedures are associated with shorter operative times, less intraoperative blood loss, shorter hospital stays and lower analgesia requirements. Laparotomy should be reserved for patients who present with rupture and are in a state of hypovolaemic shock and compromise. Medical treatment is useful for patients with an unruptured tubal ectopic pregnancy who are haemodynamically stable and have minimal symptoms and a low volume of free intraperitoneal fluid on ultrasound scan. Most common postoperative complication was anemia in 48(96%) patients and fever in 10(20%) cases. Wound sepsis was seen in 2(4%) cases. Ectopic pregnancy is a considerable cause of maternal morbidity, causing acute symptoms such as pelvic pain and vaginal bleeding and long-term problems such as infertility.[3] There was no maternal death in our study. In the UK, ectopic pregnancy remains the leading cause of pregnancy-related first trimester death (0.35/1000 ectopic pregnancies).[3,5,7] However, in the developing world it has been estimated that 10% of women admitted to hospital with a diagnosis of ectopic pregnancy ultimately die from the condition. The high rate of ruptured ectopic pregnancies(90%) found in this study may be due to the fact that most people living in developing countries are having poor health-seeking behaviors in terms of accessing medical care early so that prompt diagnosis and treatment can be administered. Patients with ruptured ectopic pregnancy routinely present with signs of shock, which includes hypotension, tachycardia and rebound tenderness and as such they should be treated on an emergency basis.

Early and accurate detection of ectopic pregnancy decreases morbidity and mortality and also reduce costs associated with emergency department visits, hospitalization, surgery, and future infertility evaluation and treatment.[17] Ruptured ectopic pregnancy is likely to cause acute cardiovascular compromise from massive blood loss often result in life-threatening morbidity or mortality. For women who present in shock, immediate surgery after resuscitation is both diagnostic and therapeutic. This requires immediate resuscitation of such patients with intravenous fluid and blood, emergency laparotomy with salpingectomy, salphingostomy, or salphingectomy was done for the majority of our patients as life-saving measures. Laparoscopic surgery can be used both for diagnosis and treatment of unruptured ectopic pregnancy, provided there are no contraindications. It was seen that salpingectomy was the commonest life-saving surgical procedure performed in the studied subjects, since most of the cases were ruptured ectopic pregnancies with severely damaged tube and massive hemoperitoneum. This management option was in line with the recommendations of the National Institute of Clinical Excellence that women with such presentation of ectopic gestation should have a salpingectomy. In developing countries , where the majority of patients present after rupture, emergency surgical interventions remain the mainstay of treatment. Though some scholars have recommended conservative surgeries for well-selected patients. Given the high risk of recurrence and the finding that 3.4% of our subjects had a history of previous ectopic pregnancy, women with a history of previous ectopic pregnancy should be followed up carefully, even in the absence of symptoms. The chance of intrauterine pregnancy in subsequent pregnancies is 40% after salpingectomy, 60% after conservative tubal surgery, and 87% after medical treatment.[11] The results shows that there was a significant degree of morbidity associated with ectopic pregnancy. This may be attributed to the delay in seeking treatment, and may have contributed to the slightly longer duration of hospitalization. Patients with interstitial/cornual ecto-pic pregnancy may have a sevenfold-higher mortality due to the fact that they rupture later and bleed more. There was no mortality recorded in our study Case-fatality rates published by numerous hospitals in Nigeria and other African countries, which ranged between 1% and 3%. Efforts to prevent deaths related to ectopic pregnancy must ensure early access to the centre where facilities for blood transfusion and emergency surgery is available. Promote awareness about risk factors and early pregnancy testing, and raise public awareness during pregnancy.

CONCLUSION

Since ectopic pregnancy remains a gynecological catastrophe and a major challenge to the reproductive performance of women worldwide. With its rising incidence, which is likely to continue increasing because of the various factors discussed, it is necessary to improve health condition of women. Control of infection, safe abortion, improved assisted reproductive technique, improved techniques for early detection and treatment can reduce its incidence. This could be achieved by providing adequate materials, manpower, and equipment of health facilities, as well as a prompt and efficient referral system, good access roads, and efficient transportation, which will ensure early presentation in hospitals and prompt management of cases. Health education on safer sex and provision of family-planning services, such as condoms and other barrier contraceptives, will help prevent sexually transmitted infection and unwanted

pregnancies, thereby reducing the incidence of pelvic infection and postabortal complications. These interventions are expected to reduce the incidence of ectopic pregnancy and its complication among women, as has been recorded in some advanced countries of the world.

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