

Ectopic Pregnancy: A Life-threatening Gynaecological Emergency Revisited in Lagos, Southwest, Nigeria

Ayodeji A. Oluwole^{1,2}, Aloy Okechukwu Ugwu^{2,3}, Sunday Isaac Omisakin^{1,2}, Victoria Olawunmi Adaramoye²

¹College of Medicine, University of Lagos, ²Department of Obstetrics and Gynaecology, Lagos University Teaching Hospital, ³Department of Obstetrics and Gynaecology, 68 Nigerian Army Reference Hospital, Lagos, Nigeria

Abstract

Background: Extrauterine gestation is still a major gynaecological in our environment. While routine early diagnosis of pregnancy and conservative management has remarkably improved the outlook in developed countries, delay in presentation and management are some of the reasons why ectopic pregnancy (EP) is a significant cause of maternal mortality in low- and middle-income countries. **Aim:** This study aims to find out the incidence, mode of presentation, and modalities of management of EP in a Nigerian tertiary health-care facility. **Materials and Methods:** The hospital records of 225 clients, who were diagnosed of extrauterine gestation from January 2017 to December 2021 at our facility, were reviewed. **Results:** The incidence of EP was 2.3%. Previous induced abortion(s), pelvic inflammatory disease, as well as nulliparity were the most significant risk factors. Abdominal pain (87.9%), amenorrhea (65.9%), and abnormal vaginal bleeding (59.3%) were the most common presenting symptoms. We had one maternal mortality during the period under review. **Conclusion:** Extrauterine gestation still presents as a major public health challenge among women of reproductive age groups in our environment. Therefore, a high index of suspicion and awareness by the medical practitioners with public enlightenment campaigns and health education should be directed to women of reproductive age on the possible risk factors and dangers of EP.

Keywords: Abortion, ectopic pregnancy, risk factors, salpingectomy

INTRODUCTION

Ectopic pregnancy (EP) occurs when the developing blastocyst implants in any other site other than the endometrial cavity.^[1] Most EPs occur in the fallopian tubes (the most common site of which is the ampullary region), but other possible sites include the cervix, caesarean section or hysterotomy scar, ovaries, rudimentary uterine horn, or even as abdominal pregnancy.^[1-3] In very rare occasions, it could occur as a heterotopic pregnancy in which both an intrauterine and an extrauterine pregnancy coexist together.^[2] It may present as asymptomatic or as an acute emergency with life-threatening consequence.^[3,4]

However, there have been variations in the incidence reported in several studies.^[1,3,4] What is more important is that there has been an increase in reported incidences worldwide. However, whether these increased incidences reflect a true increase in EP or improved diagnostic modalities is still unknown.^[4,5] The risk factors that may account for this increase are previous pelvic surgery, salpingitis isthmica nodosa, use of hormonal contraceptives, transperitoneal migration or tubal abortion,

fetal exposure to diethylstilbestrol, pelvic endometriosis, pelvic inflammatory disease (PID), previous history of infertility or fertility treatment, increasing maternal age, previous EP, previous uterine curettage, and congenital uterine malformation.^[4-6]

The pathogenesis of EP is multifactorial.^[7] There are four hypotheses that may explain the pathogenesis of extrauterine pregnancy. These include an anatomic distortion or obstruction to the fallopian tube, a malformed conceptus, abnormalities in tubal motility, and transperitoneal migration of the zygote.^[7]

Address for correspondence: Dr. Aloy Okechukwu Ugwu,
Department of Obstetrics and Gynaecology, Lagos University Teaching
Hospital, Idi-Araba, Lagos, Nigeria.
E-mail: okeyugwu92@gmail.com

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The diagnosis can be made from history of vaginal bleeding in the first trimester and/or abdominal pain in a reproductive age woman with associated missed menstrual period.^[1,6,7] Other infrequent symptoms that can aid diagnosis include shoulder tip pain, gastrointestinal symptoms, and fainting attacks.^[4,7] In addition, the triad of clinical history, qualitative serum human chorionic gonadotropin, and a transvaginal ultrasound plays a valuable role in making accurate diagnosis.^[6] Laparoscopy which is used to be the gold standard can be used both for diagnosis and treatment.^[6-8]

Several options abound to the gynaecologist in the management of ectopic gestation. These options include surgery, use of pharmacologic agents, and conservative management.^[1,6] Expectedly, the outcome of management of EP is better in developed countries; this may be because of advances in diagnosis and intervention. This invariably has led to decreased mortality rates associated with EP in developed countries.^[1-3] Paucity of man power and diagnostic equipment such as laparoscopy and low literacy ratio are factors that may delay presentation and intervention leading to increased mortality attributed to extrauterine pregnancy in low- and middle-income countries.^[6]

This study is aimed to determine the pattern of presentations and management outcome of EP at LUTH, Lagos, South Western Nigeria, from 2017 to 2021.

MATERIALS AND METHODS

It was a retrospective review of all patients who had ectopic gestation at LUTH from January 2017 to December 2021. They were identified with the aid of records from accident and emergency, theatre, intensive care unit, and gynaecological wards. Their clinical case notes were retrieved and sociodemographic data, mode of presentation, modalities of management, intraoperative findings with emphasis on site of ectopic, surgical options instituted, and postoperative state were analysed. The total number of emergency gynaecological admissions as well as records of total births in the hospital during the period under review was also ascertained.

Ethical considerations

Ethical approval was sort and obtained from the LUTH Human Research and Ethics Committee (ADM/DCST/HREC/APP/4256).

Statistical analysis

The retrieved data were analysed using the IBM Statistical Package for Social Sciences (SPSS Statistics) Version 23.Armonk, NY: IBM Corp. The results were presented as frequency tables with percentages and proportions. Statistically significant level was set at the value of $P < 0.05$. Two-tailed test of hypothesis was assumed.

RESULTS

During the study period, 225 cases of EP were managed, out of which 182 case notes were retrieved. The retrieval rate was 80.9%. There were 9782 deliveries during the study period.

The incidence of EP was 2.3%. There was one maternal death among the participants.

The age range of the participants were between 18 to 46 years. The mean age was 28.6 ± 5.2 years. The age group 26–30 years were most affected 83 (45.60%). Most of the women were of low parity – 137 (75.3%). Majority of the women had at least secondary education (113; 62.1%) [Table 1].

Table 2 shows the mode of presentation and clinical characteristics of the participants; the most frequent complaints were abdominal pain (87.91%), followed by missed menstrual flow (65.93%) and abnormal uterine bleeding (59.34%).

The risk factors identified are shown in Table 3, the most common of which was previous induced abortions (47.8%), and pelvic adhesions were seen in 41.8% of the patients at surgery.

Table 1: Sociodemographic characteristics of the participants

	Frequency (%)
Age	
16-20	13 (5.1)
21-25	29 (14.94)
26-30	83 (44.60)
31-35	37 (18.32)
36-40	12 (5.59)
41-45	7 (2.85)
46-50	1 (0.55)
Mean age	28.6±5.2
Parity	
0-1	137 (75.3)
2-3	40 (22.0)
≥4	5 (2.7)
Educational status	
≤ Primary	69 (37.9)
≥ Secondary	113 (62.1)
Marital status	
Married	167 (91.8)
Single	15 (8.2)

Table 2: Mode of presentation and clinical characteristics of the participants

Clinical features	Frequency (%)
Missed menstrual flow	120 (65.93)
Abnormal uterine bleeding	108 (59.34)
Abdominal pain	160 (87.91)
Shoulder tip pain	24 (13.18)
Fainting	72 (39.56)
Vomiting	47 (25.82)
Diarrhea	19 (10.43)
Pallor	104 (57.14)
Shock	56 (30.77)
Abdominal tenderness	151 (82.96)
Abdominal mass/distension	62 (34.06)
Some patients had multiple mode of presentation ^[1-3]	

Table 4 shows the site of EP; 94.5% had tubal ectopic gestation, out of which 57.8% had ampullary region of the tube.

DISCUSSION

The incidence of ectopic gestation in this study was 2.3% of all deliveries. It is also similar to the findings by authors in other centres in Nigeria and authors from south Africa, viz; Ononuju *et al.* in Lafia North central Nigeria, Lawani *et al.* from Abakaliki, Nigeria and Nzaumvila *et al.* from South Africa who also found an EP incidence of 0.98%, 2.1% and 2.2%.^[1,5,9-11] However, this incidence differs from that reported by a study in Ghana where the incidence of EP was 3.29%.^[12]

The age group most commonly affected in the study comprised women from 26 to 30 years (44.6%), 31–35 years (18.32%), this age distribution is slightly different to the findings in earlier study in our center where 33.9% of the affected women were in the age range of 25–29, and 29.9% were between 29.9%. Our finding is also different from other studies which reported increased incidence of ectopic gestation with increasing maternal age.^[9,13,14] There have been several hypotheses of the possible reasons for increased prevalence of ectopic gestation with increasing maternal age, some authors suggest that increasing age of woman may result in a continuous loss of myoelectrical activity of the smooth muscles of the tubes; which invariably will result in abnormal

motility of the tubes and subsequent EP while others have attributed this increase to perceived rise in sexual activity with rising age.^[9,14] The latter may result in PID, an entity strongly linked with tubal EP. Which of these reasons are responsible, is still unclear.^[1,2,4]

Pregnant women with an EP may or may not have an identifiable factor.^[1] In our study, the most common risk factor found was previous induced abortion (47.8%), followed closely by pelvic adhesions at surgery (41.75%), history of PID (13.8%), history of EP (13.8%), previous caesarean section (13.8%), and assisted conception (8.89%).

This finding is also similar to that of Fan *et al.* in China who also found induced abortion as the most common risk factor for EP.^[14] Fan *et al.* also suggested that subtle pelvic infection may occur following an induced abortion; this can be from persistent inflammatory reaction, or from infected retained products of conception or even due to excessive vaginal bleeding resulting in altered vaginal flora and subsequently increasing risk of ascending infection, tubal damage and later EP as the end result. However, Omokanye *et al.* at Ilorin, Nigeria, reported previous PID 78 (83%), previous pelvic surgery (7.4%), and previous history of EP (2.1%) as the most common risk factors in the participants.^[13]

Pregnant women with ectopic gestation may be symptomatic or asymptomatic.^[1,15] In symptomatic cases, common symptoms are vaginal bleeding in the first trimester and/or lower abdominal pain.^[15] Other common mode of presentation include missed menstrual flow. None of these clinical features is pathognomonic of EP.^[15] Abdominal pain was the most common presenting symptom in our study (87.91%), followed by missed menstrual flow in 65.93% and abnormal uterine bleeding in 59.34% of the participants. This is similar to earlier studies in our center^[1,5] and other studies done in other facilities in Nigeria.^[10,13,16] In addition to these symptoms, it is important to note that in rare cases, some cases may present with features of haemodynamic instability and an acute abdomen.

There was one maternal death in our study compared to 6 maternal deaths from a previous study in our centre; this may suggest improved management protocol.

CONCLUSION

Extrauterine gestation still presents as a major public health challenge among women of reproductive age groups in our environment. Therefore, increasing our index of suspicion and making more medical practitioners aware via public enlightenment campaigns and health education will possibly assist in ameliorating the dangers posed by EP.

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Conflicts of interest

There are no conflicts of interest.

Table 3: Identifiable risk factors for ectopic pregnancy in our participants

Risk factor	n (%)
Previous PID/STD	63 (34.61)
History of infertility	8 (4.39)
Previous induced abortion(s)	87 (47.80)
Previous ectopic pregnancy	24 (13.8)
Assisted conception	16 (8.89)
Tubal surgery	3 (1.65)
Previous caesarean section	24 (13.18)
Appendectomy	16 (8.79)
IUCD use	4 (2.19)
Combined oral contraceptive use	6 (3.29)
Pelvic adhesions noted at surgery	76 (41.75)

Some patients had multiple identifiable risk factors. IUCD: Intrauterine uterine contraceptive device, PID: Pelvic inflammatory disease, STD: Sexually transmitted disease^[1-3]

Table 4: Site of ectopic pregnancy

Site	n (%)
Tubal	
Ampullary	105 (57.7)
Interstitial	14 (7.7)
Isthmic	43 (23.6)
Fimbrial	10 (5.5)
Cervical	5 (2.7)
Ovarian	2 (1.1)
Abdominal	3 (1.6)

REFERENCES

- Olamijulo JA, Okusanya BO, Adenekan MA, Ugwu AO, Olorunfemi G, Okojie O. Ectopic pregnancy at the Lagos university teaching hospital, Lagos, South-Western Nigeria: Temporal trends, clinical presentation and management outcomes from 2005 to 2014. *Niger Postgrad Med J* 2020;27:177-83.
- Ugwu AO, Makwe CC, Omisakin SI, Ani-ugwu NK, Egba A, Ojiefoh LG, *et al.* Successful management of cervical ectopic pregnancy following *in vitro* fertilization. *HJOG* 2021;20:221-4.
- Stulberg DB, Cain L, Dahlquist IH, Lauderdale DS. Ectopic pregnancy morbidity and mortality in low-income women, 2004-2008. *Hum Reprod* 2016;31:666-71.
- Li C, Zhao WH, Zhu Q, Cao SJ, Ping H, Xi X, *et al.* Risk factors for ectopic pregnancy: A multi-Centre case-Control study. *BMC Pregnancy Childbirth* 2015;15:187.
- Anorlu RI, Oluwole A, Abudu OO, Adebajo S. Risk factors for ectopic pregnancy in Lagos, Nigeria. *Acta Obstet Gynecol Scand* 2005;84:184-8.
- Anyanwu M, Titilope G. Ectopic pregnancy at the Gambian tertiary hospital. *Afr Health Sci* 2021;21:295-303.
- Doyle MB, DeCherney AH, Diamond MP. Epidemiology and etiology of ectopic pregnancy. *Obstet Gynecol Clin North Am* 1991;18:1-17.
- Mann LM, Kreisel K, Llata E, Hong J, Torrone EA. Trends in ectopic pregnancy diagnoses in United States emergency departments, 2006-2013. *Matern Child Health J* 2020;24:213-21.
- Ononuju CN, Ogbe AE, Changkat LL, Okwaraoha BO, Chinaka UE. Ectopic pregnancy in Dalhatu Araf specialist hospital Lafia Nigeria – A 5-year review. *Niger Postgrad Med J* 2019;26:235-8.
- Lawani OL, Anozie OB, Ezeonu PO. Ectopic pregnancy: A life-threatening gynaecological emergency. *Int J Womens Health* 2013;5:515-21.
- Nzaumvila DK, Govender I, Ogunbanjo GA. An audit of the management of ectopic pregnancies in a district hospital, Gauteng, South Africa. *Afr J Prim Health Care Fam Med* 2018;10:e1-8.
- Obed S. Diagnosis of unruptured ectopic pregnancy is still uncommon in Ghana. *Ghana Med J* 2006;40:3-7.
- Omokanye LO, Balogun OR, Salaudeen AG, Olatinwo AW, Saidu R. Ectopic pregnancy in Ilorin, Nigeria: A four year review. *Niger Postgrad Med J* 2013;20:341-5.
- Fan YY, Liu YN, Mao XT, Fu Y. The prevalence of ectopic gestation: A five-year study of 1273 cases. *Int J Gen Med* 2021;14:9657-61.
- Alkatout I, Honemeyer U, Strauss A, Tinelli A, Malvasi A, Jonat W, *et al.* Clinical diagnosis and treatment of ectopic pregnancy. *Obstet Gynecol Surv* 2013;68:571-81.
- Cornelius AC, Onyegbule A, Onyema CEs, Uchenna ET, Duke OA. A five year review of ectopic pregnancy at Federal medical Centre, Owerri, South East, Nigeria. *Niger J Med* 2014;23:207-12.