

Ectopic Pregnancy at a Tertiary Hospital in North Eastern Nigeria: A 2 Year Review of the Clinical Presentations and Management

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Abstract

Background: Ectopic pregnancy is a life threatening gynaecological condition associated with adverse reproductive health consequences. It commonly implants in the fallopian tube and most patients in the developing world present late when it has ruptured leading to maternal morbidity and mortality if intervention is delayed.

Method: This was a descriptive cross-sectional retrospective study of patients with ectopic pregnancy managed at Abubakar Tafawa Balewa University Teaching Hospital, Bauchi, North-east Nigeria between 1st January, 2013 and 31st December, 2014. Data on the age, parity, clinical symptoms and signs and the types of surgical treatment offered was extracted and computed using excel spreadsheet and statistical analysis was done using SPSS (version 23) and results presented as frequency tables, percentages, and mean (\pm SD).

Results: There were 1,577 gynaecological admissions during the period of study and 98 of them (6.2%) were ectopic pregnancies. The total number of deliveries during the same

period was 6,738, putting the incidence of ectopic pregnancy to be 1.45% of all deliveries. Majority of the affected patients (39.2%) were between 25- 29 years with a mean and SD of 26.5 ± 4.9 years. Majority of the patients who had ectopic pregnancy 26 (35.1%) were nulliparous women. Of these patients, 97.3% presented with symptoms of abdominal pain, amenorrhoea (83.8%) and vaginal bleeding (68.9%). 97.3% of them had salpingectomy of the affected side.

Conclusion: Ectopic pregnancy is a common life-threatening emergency in early pregnancy. Efforts made to improve early diagnosis prior to tubal rupture, would help reduce the associated maternal morbidity and eliminate mortality from this condition.

Key words: Ectopic, Pregnancy, Fallopian Tube, Morbidity

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Introduction

Ectopic pregnancy is defined as a gestation in which the fertilized ovum implants in an area other than the endometrial lining of the uterus.¹ It is a common gynaecological condition worldwide and a major public health issue that could significantly impact future reproductive potential.^{2,3} It is among the common causes of emergency gynaecological admissions in the tropics where women present late.³ In complicated cases, it may lead to maternal morbidity and mortality.⁴ It is associated with impaired fertility as women with a prior history of ectopic pregnancy have only 40-60% chance of reproduction after surgery and in women with previous ectopic pregnancy the risk of recurrent ectopic pregnancy is 12-18%.⁵

The incidence of ectopic pregnancy varies, even in the same geographical locations. The incidence of ectopic pregnancy has been estimated to be between 1-2% of all pregnancies.⁴ In Nigeria the incidence varies, Osegi et al reported 2.5% in Yenagoa, Onwuhafua et al reported 1.4% of deliveries in Kaduna, Northern Nigeria and Anorlu et al reported 2.3% of deliveries in Lagos,

South-west Nigeria.^{6,7,8}

There is evidence that ectopic pregnancy is increasing worldwide irrespective of the denominator (pregnancies or deliveries) used in computing the incidence.⁹ The increase is attributed to rise in prevalence of pelvic inflammatory disease, increasing rates of induced abortions, the practice of assisted reproduction and more importantly early and more accurate diagnosis of ectopic pregnancy.¹⁰

The usual site of occurrence is the fallopian tube accounting for 97% while 2% are uterine ectopic pregnancy (interstitial). The remaining include abdominal, ovarian and cervical.^{1,3,6} Heterotopic pregnancy which is defined as an ectopic pregnancy in combination with an intrauterine pregnancy occurs in 1 in 15,000 – 40,000 spontaneous pregnancies and in up to 1% of patients undergoing in vitro fertilization.¹ The incidence of bilateral ectopic pregnancy has not been documented but isolated cases have been reported in the literature.^{1,3}

The aetiology of ectopic pregnancy is not well understood. However, several predisposing factors have been found to be associated with ectopic pregnancy. They include history of previous ectopic pregnancy, use of intra-uterine device (IUD), sterilization, pelvic inflammatory disease, chlamydial infection, early age of intercourse and multiple partners. History of infertility, previous pelvic surgery, increased maternal age, cigarette smoking, strenuous physical exercise, in-utero diethylstilbestrol (DES) exposure, progestin-only

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contraceptives, tubal endometriosis, benign tumors and cysts of the tubes etc.^{1,6,7}

The most common form of presentation in the tropics is ruptured ectopic although a few cases of unruptured ectopic pregnancies are increasingly being diagnosed.³

There are various treatment modalities for the management of ectopic pregnancies which include conservative, medical and surgical methods. Salpingectomy is the most frequently performed surgical treatment because the ectopic pregnancy is more often ruptured prior to presentation to the hospital.¹¹ This is because in most instances in our practice in the Sub-Saharan Africa, there used to be delays emanating from self-medications, lack of will and finance to take the patient to the hospital, to delay in transportation, and lack of expertise in making definite diagnoses and instituting adequate management plan by health care workers especially in the rural settings. Other less radical and conservative methods of treatment will include salpingostomy and transfibrial extraction.¹¹ Ectopic pregnancy is among the common causes of admissions into gynaecologic wards in Nigeria.

The review was undertaken to determine the incidence, clinical presentations, morbidity and mortality of ectopic pregnancy at ATBUTH, Bauchi, Nigeria, over a two year period with the overall goal of preventing recurrence of factors that may contribute to the morbidity and mortality associated with ectopic pregnancy.

Materials and Methods

This is a descriptive retrospective study of patients with ectopic pregnancy treated at Abubakar Tafawa Balewa University Teaching Hospital (ATBUTH), a 700-bed tertiary health institution located in Bauchi, Nigeria, from 1st January, 2013 to 31st December, 2014. The hospital has a well established Obstetrics and Gynaecology department attending to patient referrals from neighbouring States. Cases of ectopic pregnancies were obtained from hospital admissions, operation and discharge records.

Data on socio-demographics, clinical characteristics and management of the patients were collected and computed using excel spread sheet and statistical analysis was done using SPSS version 23 and results presented as frequency tables, percentages, mean (\pm SD).

Study population

The study population involved pregnant women with ectopic pregnancy managed in the Department of Obstetrics and Gynaecology of ATBUTH, Bauchi, Nigeria, over the two year period. The confirmation of diagnoses of ectopic pregnancies were performed using

the clinical features and pelvic ultrasound imaging technique and by laparoscopy.

Ethical consideration

This was a retrospective cross-sectional study and ethical clearance was given to conduct this study.

Results

During the period under review, a total of 98 cases of ectopic pregnancies were treated constituting 6.2% of 1,577 gynaecological admissions. Only 74 cases were retrieved of the 98 treated ectopic pregnancies, giving a retrieval rate of 75.5%. There were 6,738 deliveries within the period therefore the incidence of ectopic pregnancy was 1.45% of deliveries. Fifty eight patients (78.4%) were married while 16(21.6%) were not married. The study showed the age distribution of the patients ranging between 15-40 years with a mean of 26.5 ± 4.9 years. Majority of the patients (39.2%) were between 25-29 years. It also showed the parity distribution of the patients. The range of parity was 0-9. The incidence of ectopic pregnancy in this study was more among the nulliparous women.

Table 1: Socio-demographics of women with ectopic pregnancy

Characteristics	Frequency (N=74)	Percentage (%)
Age (years)		
15-19	5	6.8
20-24	21	28.3
25-29	29	39.2
30-34	15	20.3
35-39	4	5.4
40	0	0.0
Parity		
0	26	35.1
1	17	23.0
2	5	6.8
3	8	10.8
4	6	8.1
≥ 5	12	16.2

This study also showed the symptoms and signs that patients with ectopic gestations presented with in our hospital. Abdominal pain was the commonest symptom and it occurred in 72 (97.3%) of patients. Abdominal tenderness was elicited in 71 patients treated (95.9%), cervical motion tenderness was also elicited in 69 patients (93.2%) while 23 patients (31.1%) presented in shock. Sixty-nine patients (93.2%) had tubal pregnancy; 2 patients (2.7%) ovarian pregnancy; 2 patients (2.7%) had abdominal pregnancy while one patient (1.4%) had cervical ectopic pregnancy. Of the tubal pregnancy, 29

(42.0%) occurred in the left tube while 40 (58.0%) occurred in the right tube. Sixty-eight (91.2%) were ruptured ectopic pregnancies while 6 (8.1%) were unruptured forms. The distribution of tubal pregnancy are as follows; 44 (63.8%) in the ampullary region; 6 (8.7%) Isthmus; 11 Cornual (15.9%) and 8 (11.6%) were located at the fimbrial end of the tube. The treatment options for the patients showed that 72 patients (97.3%) had exploratory laparotomy while 2 patients (2.7%) had laparoscopic procedures. Total unilateral salpingectomy was the procedure of choice in 63 patients (85.1%), 7 (9.5%) had Salpingo-oophorectomy on the ipsilateral side, while 2 patients (2.7%) had laparoscopic salpingectomy.

Table 2: Clinical Presentations of Ectopic Pregnancy

Symptoms	Frequency (N=74)	Percentage (%)
Abdominal pain	72	97.3
Amenorrhoea	62	83.8
Vaginal bleeding	51	68.9
Dizziness/Fainting	31	41.9
Abdominal swelling	12	16.2
Vomiting	25	33.8
Dysuria/frequency	10	13.5
Fever	12	16.2
Shoulder tip pain	1	1.4
Diarrhoea	3	4.1
Clinical Signs		
Abdominal tenderness	71	95.9
Cervical motion tenderness	69	93.2
Palor	55	74.3
Tachycardia	49	66.2
Rebound tenderness	25	33.8
Guarding	19	25.7
Shock	23	31.1

Table 3: Surgical treatments performed for the ectopic pregnancies

Operation	Frequency (N=74)	Percentage (%)
Salpingectomy	63	85.1
Total	43	58.1
Partial	20	27.0
Transfimbrial Extraction	2	2.7
Salpingo-oophorectomy	7	9.5
Laparoscopic salpingectomy	2	2.7

Three patients (4.05%) had wound infection as post-operative complications. The duration of hospital stay was from 2 to 10 days with a mean of 5.4 days. 86.5% of the patients who were managed for ectopic pregnancy had blood transfusion.

Discussion

In this review the incidence of ectopic pregnancy in our hospital was 1.45% of deliveries. This rate is similar to 1.4% reported by Onwuhafua et al in Kaduna, Northern Nigeria but higher than 0.87%, and 1% reported by Swende et al in Makurdi and Omokanye et al in Ilorin, Nigeria respectively.^{3,8,12} It is however, lower than 1.68% reported by Gharoro et al in Benin, 2.3% reported by Anorlu et al in Lagos and 2.7% reported by Akaba et al in Abuja.^{9,13,14} These differences might be due to study population groups with different underlying risk factors.¹⁰ The majority of the ectopic pregnancies (67.5%) occurred among women aged 20-29 years of age. A greater percentage of them were of low parity; nulliparous women were 35.1% while the primiparous women were 23%. This is similar to studies done by Gharoro et al in Benin and and Musa et al in Jos both in Nigeria.^{11,13} These findings imply that majority of patients who had ectopic pregnancies were young nulliparous women and subsequent reproductive potentials will be greatly threatened as the risk of recurrence increases. About 95% of the study group was less than 35 years of age. This emphasizes the need for prevention and proper treatment of sexually transmitted infection, prevention of puerperal sepsis and post-abortal sepsis among women of reproductive age group.¹¹

The average age of those diagnosed with ectopic pregnancy was 26.5± 4.9 years and it is said that an early age of sexual debut increases the risk of ectopic pregnancy almost two fold whereas late stage of sexual debut was protective.⁸ Risk factors implicated in ectopic gestation include; history of pelvic inflammatory disease, history of tubal ligation; contraception failure, previous ectopic pregnancy, tubal reconstructive surgeries, subfertility, assisted reproductive therapy, previous induced abortion, tubal endometriosis, congenital malformation of the tubes, smoking.^{5,15}

Abdominal pain, amenorrhoea and vaginal bleeding represent the most common symptoms of presentation in this study; which is similar to other reports.^{13,16,17} Atypical symptoms of ectopic pregnancy found in this review include fever, diarrhoea, dysuria and frequency. Similar findings have been reported by others.^{7,18,19} The reasons for these are not obvious but they may be due to haemoperitoneal pressure to the pelvic viscera. Akingba and Eneli in Lagos suggested that the habit of using purgatives by Nigerians for the relief of any abdominal ailment might be responsible for the gastrointestinal symptoms.²⁰ Irritation of the rectum by blood collected in the pouch of Douglas is also a possible cause of the gastrointestinal symptoms.

Abdominal tenderness was the most common sign elicited in this review. Similar findings were reported by

other researchers.^{1,17,21} 93.2% of the patients in the study had positive cervical motion tenderness on pelvic examination; this is similar to the findings from other studies.^{1,16,22} Tubal variety constitutes the majority of cases of ectopic pregnancy in this study 93.2% and the ampullary type has highest incidence of 63.8% of tubal ectopic pregnancy and this is consistent with findings in standard Obstetrics and gynaecologic texts.^{1,5,15}

One of the strategies to preserve future fertility in the management of ectopic pregnancy is conservative management.¹¹ Conservative management has been shown to improve subsequent fertility chances.^{1,23} However, this management modality was not possible in our setting because most of the patients with ectopic pregnancy presented with the ruptured tubal variety with significant haemoperitoneum and were haemodynamically unstable. Exploratory laparotomy still remains the mode of surgical intervention as most of our patients had it while only 2.7% of patients benefited from laparoscopic salpingectomy. This is consistent with findings from other reports where emergency exploratory laparotomy was the main stay of management.⁷ Salpingectomy was performed on most of the patients with ectopic pregnancy due to extensive tubal damage. This procedure is rapid and technically simple to perform. 58.1% had total salpingectomy while 27.0% had partial salpingectomy. 9.5% of the patients had salpingo-oophorectomy and 2.7% had transfixial extraction. The rate of transfixial extraction observed from this study was similar to 1.67% reported by Rabiou et al in Kano, but is higher than the reports by Odunvbun et al in Delta State, Nigeria and Okoror et al in Benin, Nigeria, where none was performed.^{24,25,26} These procedures are associated with high rate of persistent trophoblastic tissues; postoperative bleeding and subsequent ectopic pregnancy hence they are less commonly done.^{5,24}

The right tubes are more frequently affected than the left tube. In this study the right tube was more affected than the left tube. This is similar to the already established pattern in earlier reports.^{8,12,24}

Three patients had post-operative complication of wound infections which translated to the rate of 4.05%, similar to 4.02% reported by Onwuhafua et al, but higher than 1.11% reported by Rabiou et al in Kano,^{8,24} Though this level of wound infection is comparatively low it may possibly suggest that some of the precautionary measures may have been waived in a bid to resuscitate and save the patients' lives. Despite the dire need to save these patients' lives, efforts should always be made to prepare the patient well pre-operatively as it will have effects on the outcome of the patient's management.

The average duration of hospital stay of 5.4 days is lower than 6.63 days quoted by Rabiou et al in Kano.²⁴

This may be explained by the low level of postoperative complication amongst our patients.

There was no maternal death recorded among the patients that were managed for ectopic pregnancy at the time of this review. The case fatality of zero per 1000 recorded in this study is the same with the reports from Kano and Ilorin.^{3,24}

Blood transfusion is life saving and may be inevitable in the management of ruptured ectopic pregnancy. Sixty four of the patients managed in this study had blood transfusion. This is contrary to the report from Benin where 54.6% of their patients had auto-transfusion during surgery.¹³ Emphasis should therefore be on auto-transfusion. Where applicable, this can be by intra-operative blood salvage. It can be accomplished by using a simple system consisting of a blood collecting device, an in-line filter system and a container for anticoagulation.⁶ The simple Easet or solcotrans plus may be used for collecting and filtering shed blood before re-infusion.²⁷ Auto-transfusion will eliminate or reduce the incidence of blood transfusion reactions and transmission of infections which include human immunodeficiency virus infection, hepatitis and other blood borne infectious diseases.²⁷

Conclusion

The incidence of ectopic pregnancy is more in young nulliparous women and prevention of pelvic inflammatory disease among the girls, which is an identified risk factor in the tropics, will help reduce the occurrence of this life threatening condition. More so, a high index of suspicion is needed in making the diagnosis of ectopic pregnancy and instituting prompt management for the patients.

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