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A Five-Year Review of Ectopic Pregnancy in a Tertiary Health Care Centre in Niger Delta Region of Nigeria

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ABSTRACT

Introduction

Background: Ectopic pregnancy is one of the leading causes of maternal morbidity and mortality in sub-sahara Africa, with a rising trend in recent times.

Method: A 5-year retrospective study of ectopic pregnancies at the Delta State University Teaching Hospital, Oghara, Nigeria. Data were retrieved from the case files and operation notes of the patients and analyzed for age, parity, marital status, risk factors, clinical presentation, mode of management and associated morbidity and mortality.

Results: There were 113 cases of ectopic pregnancies during the study period, 1st January 2020 and 31st December 2025 in DELSUTH. Of these, 100 case notes were found and this formed the bases of further analysis. There were 2,875 in-patient gynaecological admission giving an incidence of 3.5%. Most of the patients (80%) were multiparous. The major identified predisposing factor was history of pelvic inflammatory disease 47.0%. Majority of the ectopic gestations (83%) were located at the ampullary region. The commonest postoperative complication was hypovoleamic shock.

Conclusion: Ectopic pregnancy is still a significant contributor to morbidity and mortality amongst women of childbearing age in our community and its incidence is rising.

KEYWORD: Ectopic, Pregnancy, mortality, hypovolaemic shock, DELSUTH

INTRODUCTION

Ectopic pregnancy is one of the most common life-threatening surgical emergencies in gynaecologic practice(1). During the first three months of pregnancy, ectopic pregnancy is the leading cause of maternal morbidity and mortality in industrialized countries, and possibly the second most frequent cause in developing countries (after abortion complications)(2). It is a common obstetric problem in the world over. Not only do women die from this disease but also of greater clinical importance is the indirect morbidity of poor fertility prognosis and adverse outcome in subsequent pregnancy.(3) Ectopic pregnancy refers to the implantation of a fertilised ovum in any site other than the uterine endometrium(4). Over 95% of cases occur in the fallopian tube, the commonest site being the ampullary region.(5) Ectopic pregnancy was first recognised by Busiere in 1693, on examination of the body of an executed prisoner in Paris(6). Ever since, it has remained an important cause of mortality in early pregnancy.(6)

The global incidence of ectopic pregnancy is difficult to determine because of variations in the population studied. Furthermore, variations in the availability of medical surveillance resources and the level of a nation's economy are contributory(1)(7).

In Nigeria, the overall incidence as reported by various authors is between 3 and 30 ectopic pregnancies per 100 deliveries (0.29% - 3%).(5)(8) Ectopic pregnancy accounted for 5.2% of maternal deaths at the Lagos University Teaching Hospital (LUTH) between 2002 and 2006(5).

Worldwide incidence of ectopic pregnancy varies between 1 in 28 and 1 in 106 ectopic pregnancy per live birth (0.094% to 3.57%). The incidence is on the increase worldwide as a result of increased rate of pelvic infections and improvement in diagnostic techniques. Other identified predisposing factors are post-abortal and puerperal sepsis, assisted reproductive technique, failed sterilization and also previous ectopic pregnancy.(9)

Clinical manifestations of ectopic pregnancy are diverse and depend on whether rupture has occurred. They may range from non-specific lower abdominal pain to collapse. Classical features of ruptured ectopic pregnancy are amenorrhea, lower abdominal pain and vaginal bleeding.(6) However, some or all of the classic symptoms may be absent, especially in cases of unruptured or slow leaking ectopic gestation, with overall accuracy of clinical diagnosis being only 50%.(9) In such uncertain situation of unruptured or slow leaking ectopic pregnancy, laparoscopy is the mainstay of diagnosis.(10) Recently, with the development of

immunoassays utilizing monoclonal antibodies to β-human chorionic gonadotrophin (hCG) and high-resolution ultrasonography, more ectopic pregnancies can be diagnosed earlier even before rupture occurs.(7)(11) This ability to make early diagnosis coupled with developments in endoscopic surgical procedures has shifted management options towards more conservative surgical and non-surgical approach.(5)(12) The resultant effect is an improvement in the fertility rate after an ectopic pregnancy.(5)

Apart from improved fertility chances, conservative therapeutic approach also has less morbidity including maternal anaemia, infection and need for blood transfusion.(1)(13) Consequently, hospital stay is less with conservative treatment when compared to radical surgical management.(1) However, in developing countries, lack of awareness and/or limited resources is responsible for late presentation by most patients. Many patients present with features of circulatory collapse following rupture of ectopic pregnancy and are therefore not suitable for conservative management.(5) Thus, apart from the few patients who present with an ultrasound (mostly incidental) diagnosis of ectopic pregnancy, there exists very little opportunity to treat patients conservatively in our environment.(8)

Early diagnosis and treatment is an important factor in reduction of mortality following ectopic pregnancy and use of contraceptives. Southwest Nigeria has a lower fertility rate of 3.9% and Lagos state has the highest prevalence (29%) of modern contraceptive use by married women probably due to higher level of education and social exposure.(5)(14) In our society, majority of patients may present late, hence management options will mainly be limited to laparotomy and salpingectomy and in rare cases, these treatment option meant include hystectomy in life threatening conditions such as cervical ectopic.(15)

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METHODOLOGY

Study Design and Location

This was a retrospective descriptive study carried out in Obstetrics and Gyneacology Department in Delta State University Teaching Hospital, Oghara. The hospital is owned by Delta State Government and its located at Ethiope west local government area in Delta State.

Study Population

The study population comprises of all patients that had ectopic pregnancy within the study period in DELSUTH.

Study Duration

This study was done between January 1, 2020 and December 31, 2024.

Method of Data Collection

Data of patients who had ectopic gestation were obtained from records in the department of Obstetrics and Gynaecology, in DELSUTH were included in the study. All case files, gyneacological clinic and ward registers of relevant patients were retrieved and reviewed. Confidentiality was ensured as both patient names, phone numbers, and other identifiers were not taken nor exposed. Variables that were described include age, marital status, level of education, parity, risk factors and complications. Data was collected using a pre-designed proforma. Folders already used for the study were marked to avoid getting data twice from the same folders.

Inclusion Criteria: Patients that were managed for ectopic gestation with complete information.

Exclusion Criteria: Patients with incomplete information.

Data Analysis

Data was analysed using SPSS version 22. Categorical variables were summarised as frequencies and percentages and quantitative data were summarized as mean and standard deviation.

Ethical Consideration

Permission to assess case files/records was obtained from the hospital management. Ethical approval was obtained from the Health Research and Ethics Committee in DELSUTH; (the approval number is HREC/PAN/2024/021).

RESULTS

There were 100 cases of ectopic pregnancy for analysis during the period under review and 2875 in patients gynaecological admission giving an incidence of 3.5%.

Table 1: Socio-demographic factors

Characteristics	Frequencies (n)	Percentages(%)
Age (years)		
<20	6	6.0
20-29	56	56.0
30-39	30	30.0
>40	8	8.0
Parity		
0	20	20.0
1-4	80	80.0
≥5	0	0.00
Level of Education		
No formal education	20	20.0
Primary	17	17.0
Secondary	43	43.0
Tertiary	20	20.0
Marital Status		
Married	71	71.0
Unmarried	29	29.0

Table 1 showed that the most common age group was 20 – 29years and this accounted for 56% of the study population. Most of the women were multiparous ladies (80%) and had secondary level of education.

Table 2: Risk Factors

Risk Factors	Frequencies (n)	Percentages(%)
Previous pelvic surgery	16	16.0
Previous PID	47	47.0
Previous abortion	3	3.0
History of puerperal sepsis	3	3.0
Previous ectopic	4	4.0
History of fertility treatment	8	8.0
Multiple sexual partner	9	9.0
Use of contraceptives	10	10.0

Table 2 showed that PID was the most common risk factor (47.0%) this was followed by previous pelvic surgery (16.9%).

Table 3: Location of Ectopic pregnancy

Location of ectopic	Frequencies (n)	Percentages(%)
Ampullary	83	83
Corneal	3	3
Fimbria	6	6
Interstitial	5	5
Isthmus	3	3

Table 3 showed that most of the ectopic pregnancy seen where at the ampullary region and this accounted for 83.0%.

Table 4: Gestational age at rupture

Characteristics	Frequencies (n)	Percentages(%)
< 6wks	29	29.0
6– 10wks	65	65.0
>10wks	6	6.0

Table 4 shows that the most common gestational age at presentation was 6 - 10 weeks and this accounted for 65% of the study population.

Table 5: Complications

Complications	Frequencies (n)	Percentages(%)
Blood transfusion	8	8.0
Hypovolemic shock	78	78.0
Wound sepsis	2	2.0
Prolong hospital stay	1	1.0
Maternal death	1	1.0
None	10	10.0

Table 5 shows that aneamia was the most common complications (78.0%).

DISCUSSION

Ectopic pregnancy is a life threatens and gynecological emergency that is associated with severe maternal morbidity and mortality. Therefore early presentation, accurate diagnosis and prompt management is important to advert this complications. This study shows that most of the patients where aged 20 – 29 years and this accounted for 56% of the study population. This was similar to study done by Shittu et al(9) who reported aged group 21 – 29 years as most common. This belongs to adolescents and reproductive age group that are prone to Pelvic Inflammatory Disease (PID) due to unprotected multiple sexual partner, lack of proper contraceptive usage and high incidence of postcoital emergency contraceptive. Most of the women in this study where multiparous accounting for 80%. This was in accordance with study done by Naimi et al who found that para 1 – 3 were more at risk of having ectopic pregnancy. These women have not completed their family size and these predispose them to unprotected sexual intercourse and they may not be using any forms of contraceptive for family planning purposes.

The most common risk factor that predisposed women to ectopic pregnancy was previous PID. This was similar to study done by Olamijulo et al(5) in Lagos who reported Pelvic inflammatory disease to be the most common risk factor implicated in ectopic pregnancy. Pelvic inflammatory disease causes pelvic and tubal adhesion thereby distorting tubal motility and function resulting in ectopic implantation of the blastocyte. The next common cause of ectopic pregnancy in this study was previous pelvic surgery, this was similar to study by Olamijulo et al(5). Previous pelvic surgery including caesarean section may result in pelvic adhesion formation that could bound and distort the tubes and thereby prevent their functionality and also pelvic surgery can cause direct damage to the tubes, resulting in tubal injury and healing by scaring which can further jeopardize the function of the fallopian tube. (16)

The most common site of ectopic pregnancy in this study was at the ampullary region, this was in accordance to study done by Ononuju et al(8) who reported that majority of tubal ectopic was at the ampullary region. This is the most common site of ectopic pregnancy generally. Tubal ectopic pregnancy accounts for about 90 - 95% of ectopic gestation. The ampulla of the fallopian tube is the place where fertilization occurs and it is the widest and longest part of the fallopian tube. It has cilia that is used for embryos transport after fertilization. These embryo are transported to the uterine cavity where they implant and they begin to develop. Any pathology that distorts this ciliary action will lead to implantation of the blastocyte at that point. Some study has also reported that the ampullary region is well vascularized, so any delay in embryo transport will lead to implantation at the ampillary region. Majority of the rupture in our findings occurred between 6 to 10 weeks gestation this was in contrast to study done by Ranji et al who findings revealed that the gestational age at rupture was > 8 weeks. This concise with the period of uterine rupture at the ampullary region. As the developing embryo begins to grow it expands and stretchy out the fallopian tube which eventually exceed its limit and ruptures under pressure, this results in bleeding into the intra-abdominal cavity.

Most common complication of ectopic pregnancy in this study was hypovolaemic shock. This was similar to findings reported by Olamijulo et al(5) and HSU et al(12). Ectopic pregnancy result in distention of the tube from the develpoing blastocyst, this result in rupture of the tube leading to intra-abdominal bleeding and subsequent development of hypovolaemic shock in this patients. This can lead to various degrees of maternal morbidity and mortality if not diagnosed and managed promptly.

In this study there was no statistical significant difference between site of rupture and gestational age at rupture. The site of fallopian tube that the rupture occurs is directly proportional to the gestational age. The ampullary region is the widest part of the fallopian tube and rupture at this site occurs between 6 – 10 weeks gestation.

CONCLUSION

Ectopic pregnancy is a gynecological emergency associated with severe morbidity and mortality. This most common risk factor in this study was pelvic inflammatory disease. This was common among women of reproductive age group.

RECOMMENDATION

There should be a high index of suspicious among women who presented with abdominal pain, bleeding per vagina and amenorrhea.

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