



Ectopic Pregnancy: Recent Experience in a Tertiary Hospital, South-Southern Nigeria

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Authors' contributions

This work was carried out in collaboration between all authors. Author HAAU designed the study, performed the statistical analysis, wrote the protocol and wrote the first draft of the manuscript. Authors OAVO and NCO managed the analyses of the study. Author DOA managed the literature searches. All authors read and approved the final manuscript.

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ABSTRACT

Objective: To assess the incidence, clinical presentation, management and associated morbidity of ectopic pregnancy in a tertiary health institution in South-southern Nigeria over a 2-year period.

Methods: Hospital-based cohort study were all women with ectopic pregnancy identified at laparotomy were analyzed.

Results: Ectopic pregnancy occurred most frequently in women between the ages of 20 and 34 years. It had its highest incidence among nulliparous women. The incidence declined with increasing parity. 82% of cases were ruptured at presentation and all patients had surgical treatment.

Conclusions: Ectopic pregnancy remains a significant contributor to maternal morbidity especially in the first trimester of pregnancy in this setting. There is the urgent need of public health measures like safe sex, female education and female empowerment aimed at reducing the identified risk factors in our environment.

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1. INTRODUCTION

Ruptured ectopic pregnancy remains one of the commonest gynaecological surgical emergencies in Nigeria [1,2]. In the first trimester of pregnancy, it is the leading cause of maternal death in developed countries, and possibly the second most common cause of morbidity and mortality in developing countries (after abortion complications) [3-6]. It is associated with reduced prospects of future fertility and also contributes to foetal wastage [2,7-9]. Prenatal monitoring is by ultrasonography and biochemical assays. Laparoscopy is done where available [4,5,10]

More than 95% of ectopic pregnancies occur in the fallopian tubes [1,3,10]. Tubal damage is common to ectopic pregnancy and tubal factor infertility. These are often secondary to ascending infections either due to sexually transmitted diseases, post-abortion or puerperal sepsis [1,10-12]. The risk of ectopic pregnancy increases as much as seven-fold after acute salpingitis [13]. This is supported by the evidence of chronic pelvic inflammatory disease in approximately 40 – 60% of women who had surgery for ectopic pregnancy [5,10]. In addition, certain contraceptive methods such as the intra-uterine contraceptive devices (IUCDs) [13] and progesterone-only contraceptives are thought to increase the risk of ectopic pregnancy when pregnancy occurs with these methods in use [14].

Reports on ectopic pregnancy in Nigeria [2,7,9, 15-20] and indeed in Africa [4,6,21-24] are frequently derived from retrospective reviews of cases managed. However, retrospective reviews have a number of inherent disadvantages – one of which is the difficulty encountered in the retrieval of case notes from the hospital records departments in most developing countries.

This study was therefore designed to eliminate this limitation. Data was therefore collected prospectively. It chronicles the recent experience in our tertiary hospital over the period of 2 years.

2. MATERIALS AND METHODS

All consecutive cases of ectopic pregnancy presenting to the University of Port Harcourt Teaching Hospital during the 2-year period between 1st of January 2011 and 31st of December, 2013 were included. All relevant data

were collected prospectively using a spread sheet that contains information on the socio-demographic profile, gynaecological history, clinical presentation, laparotomy findings and management. Patients were interviewed usually after the second postoperative day to obtain relevant information. Their case files were then reviewed to document laparotomy findings and other aspects of management. Any postoperative complications were noted at discharge. All deliveries in the labour ward during the period were calculated from the labour ward register. Values are expressed as percentages and presented in tabular form. Study was done by consultant staffs of the hospital statistical package used was SPSS12 and values were expressed in simple percentages.

3. RESULTS

The total number of deliveries during the study period was 6,095 and there were 149 cases of ectopic pregnancies managed at the UPTH. The incidence of ectopic pregnancy during the study period was 2.4% of total births or 1 in 41 deliveries. The average age of patients was 28.03 years. The peak age of incidence was in the 25 – 29 years age group.

Table 1. Age distribution

Age	Number	Percentage
15 – 19	5	3.4%
20 – 24	33	22.1%
25 – 29	54	36.2%
30 – 34	31	20.8%
35 – 39	20	13.4%
40 – 44	1	0.7%
45 – 49	None	0.0%
Unsure	5	3.4%
	149	100%

The parity distribution, educational level and marital status is shown in Table 2. This shows that almost 50% (no=74) of patients were nulliparas and more than a quarter was made up by primiparas. There was a downward trend in incidence as the parity increased. Table 3 shows employment and specific job descriptions of the patients. Some of the identified risk factors are shown in Table 4 while Tables 5, 6 and 7 show laparotomy findings and aspects of the management of the patients including blood transfusions.

Table 2. Parity, education and marital status

Socio-demographic characteristics of patients		
	Frequency	Percentage (%)
Parity distribution		
0	74	49.7%
1	40	26.8%
2 – 4	32	21.5%
≥ 5	3	2.0%
Highest educational level		
Tertiary	59	39.6%
Secondary	73	49.0%
Primary	12	8.1%
No formal education	2	1.3%
Not recorded	3	2.0%
Marital status		
Single	69	46.3%
Co-habitation	8	5.4%
Married	68	45.6%
Divorced	3	2.0%
Widow	1	0.7%

Table 3. Employment and occupation

	Frequency	Percentage (%)
Employment status		
Employed	102	68.5%
Students	24	16.1%
Unemployed {single, not students}	11	7.4%
House wives	11	7.4%
Not stated	1	0.7%
Total	149	100%
Occupation of patients		
Traders	41	28.2%
Students	24	17.4%
Hair dressers	13	9.4%
Housewives	11	7.4%
Seamstresses	10	6.7%
Teachers	7	4.7%
Computer operators	5	3.4%
Civil servants	3	2.0%
Accountants	3	2.0%
Secretaries	3	2.0%
Applicants (Nonspecific)	3	2.0%
Petrol pump attendant	2	1.3%
Receptionists	2	1.3%
Auxilliary nurses	2	1.3%
Caterers	2	1.3%
Others	15	10.1%

4. DISCUSSION

The incidence of ectopic pregnancy in this series is 2.4% of total deliveries and this is similar to the

2.31% reported by Anorlu RI et al. [25] in Lagos, south western Nigeria. It is however lower than the 3.5% reported by Ayinde OA et al. [17] at the University College Hospital, Ibadan. The incidence in Port Harcourt is higher than most other reports from other parts of Nigeria including Sokoto (1.81%), Jos (1.71%), Benin City (1.68%), Kaduna (1.40%), Nnewi (1.05%), Makurdi (0.92%), and Ilorin (0.8%) [2,7,9,15,16,18,20]. The relatively high incidence in Port Harcourt may be explained by the high prevalence of sexual risk factors occasioned by the activities of the Oil and Gas industry in the Niger Delta.

Table 4. Risk factors

Risk factors	Frequency (n)	Percentage (%)
Previous induced abortions	102	68.5%
Previous abdomino-pelvic surgeries	30	20.1%
Previous miscarriages	24	16.1%
Previous ectopic pregnancy	6	4.0%
Multiple sexual partners (1 year)	45	30.2%
Multiple lifetime sexual partners	111	74.5%

Table 5. Clinical presentation of ectopic pregnancy

Presentation	Frequency (n)	Percentage of total number (149) (%)
Abdominal pain	145	97.3
Amenorrhoea	131	87.9
Vaginal bleeding	104	69.8
Abdominal distension	61	40.9
Dizziness	106	71.1
Palpitation	55	36.9
Fainting and collapse	66	44.3
History of attempt to terminate index pregnancy	41	27.5

In this series, approximately 80% of cases occur in young women between the age of 20 and 34 years with the 25 to 29-year age group being the most affected (Table 1). Furthermore, almost half of all cases occur in nulliparous women and another one-quarter in primiparous women. Approximately 40% had tertiary level of

education while the greater majority had secondary, primary or no formal education. Unmarried women constituted the largest group making up 46% of cases. This has significant implications as ectopic pregnancy is known to compromise future fertility. This is particularly important in our country since a high premium is placed on childbearing.

Table 6. Laparotomy findings

	Frequency (n)	Percentage (%)
Types		
Ruptured	124	83.2%
Unruptured	12	8.1%
Slowly-leaking	10	6.7%
Not clearly stated	3	2.0%
Side		
Left	61	41.0%
Right	81	54.4%
Heterotopic	1	0.7%
Abdominal pregnancy	3	2.0%
Not stated	3	2.0%
Site		
Tubal	139	93.3%
Ovarian	7	4.7%
Abdominal	3	2.0%
Cervical	0	0.0%
Location in tubal pregnancy		
Interstitial/Cornual	22	15.8%
Isthmic	2	1.4%
Ampullary	98	70.5%
Fimbrial	17	12.2%

Table 7. Management options

	Frequency	Percentage
Unilateral partial salpingectomy	108	72.5%
Unilateral total salpingectomy	13	8.7%
Bilateral salpingectomy	1	0.7%
Cornual resection	10	6.7%
Ovariectomy	6	4.0%
Salpingo-oophorectomy	5	3.4%
Others	5	3.4%
Blood transfusion	93	62.4%

These finding were similar to the report by other workers. For example, in a 5-year review by Gharoro et al. in Benin City, 49.3% and 22.4% of women in their series were nulliparas and primiparas respectively [7]. This is comparable to

our finding of 49.7% and 26.8% respectively. In the review in Benin City, the most affected women were between the ages of 20 – 25 years of age unlike in our series where the highest incidence was found in those between 25 and 29 years of age. In Ilorin, north-central Nigeria, the highest incidence was also found in women between the ages of 21 and 25 years [16]. The reason(s) for this difference is unclear.

It may not have been a coincidence that the majority of affected women in our series appear to belong to the lower socio-economic strata of the society as reflected by their level of education and occupation. Socio-economic (wealth) status has long been identified as a marker of high risk sexual behavior in Nigeria, sub-Saharan Africa and in developed countries [26,27,28].

That the background risk factors for pelvic inflammatory disease (PID), an important cause of tubal damage with significant reproductive health implications is prevalent in our setting is clearly shown by the finding that approximately three of four affected women has had multiple lifetime sexual partners and as much as 30% had at least 2 different sexual partners within the preceding 12 months. Women with a history of PID have a six-fold increased risk of tubal pregnancy [29]. There is therefore the urgent need for sustained and targeted public health initiatives to discourage high risk sexual behavior.

Almost 70% of the women had a previous induced abortion and as much as one in four (27.5%) women in the index (ectopic) pregnancy had attempted to terminate the pregnancy before presentation in our facility. This was similar to the report by Gharoro et al. in Benin City (62.5%) but much higher than the report of Abdul IF from Ilorin where only approximately 15% of the patients had a history of previous induced abortion [7,16]. Unsafe abortion is also known to contribute to the high prevalence of pelvic inflammatory disease especially in developing countries [30]. The need to prevent unintended pregnancies by increased access to effective contraception cannot therefore be overemphasized.

Similar to the findings of others, the clinical presentation in our series is a reflection of the late presentation of patients in our environment. The commonest presenting complaints in descending order were abdominal pain, amenorrhoea, dizziness, vaginal bleeding, syncope and abdominal distension [2,7].

Only 8.1% of patients presented with unruptured ectopic pregnancy. Approximately 90% had evidence of intra-peritoneal bleeding and more than 60% received blood transfusion. This again is similar to the findings of others in Nigeria [2,7,15,16]. This is in contrast to the situation in developed countries where 65% to 85% are detected before tubal rupture [3,31]. Laparoscopic surgery could have been utilized but ours were non functional as at the time of study.

All the patients had laparotomy and either partial or total salpingectomy while abdominal pregnancies were excised with ligation of bleeders and blood transfusion. Those with cornual and ovarian pregnancy had wedge resection and ovariectomy respectively. This is not different from the experience of others. Of note is the fact that even the patients that had unruptured ectopic pregnancy still had laparotomy. None of them received medical treatment for their condition. This is due to the fact that laboratory support for quantitative β -hCG estimation is lacking in our facility at the moment and the cost is very expensive in few private laboratories where it can be done.

5. CONCLUSION

In conclusion, our result shows a relatively high incidence of ectopic pregnancy in Port Harcourt. The prevalence of high risk sexual behavior was high. Most cases present late and a significant percentage were in a state of hypovolaemic shock. There is the urgent need to increase public awareness of the risk factors in our environment. Furthermore, early presentation and diagnosis with improved laboratory services and the introduction of minimal access surgery will create opportunity for more conservative approach for those that meet the criteria.

CONSENT

All authors declare that written informed consent was obtained from the patient for publication of this paper.

ETHICAL APPROVAL

All authors hereby declare that all this study has been examined and approved by the ethics committee and have therefore been performed in accordance with the ethical standards laid down in the 1964 Declaration of Helsinki.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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