

# Ectopic Pregnancy: A 5 Year Review of Cases at Nnamdi Azikiwe University Teaching Hospital (NAUTH) Nnewi

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## SUMMARY

**Background:** Ruptured ectopic pregnancy continues to be a common life threatening emergency in our environment as well as a public health problem.

**Objective:** This is to study the incidence, clinical presentation, risk factors and the management of cases that presented in our centre over a five year period.

**Methods:** This is a retrospective study of cases of ectopic gestations managed in the gynaecological unit of NAUTH Nnewi from January 1<sup>st</sup>, 2002 to December 31<sup>st</sup>, 2006. Information was obtained from the case notes, theatre and labour ward registers.

**Results:** During the period, a total of 2,746 deliveries were recorded while 556 gynaecological patients were admitted. Thirty six patients had ectopic gestations accounting for 1.3% of all deliveries and 6.5% of all gynaecological admissions. The peak age group was 26-30 years (44.4%); 28(77.7%) were married and 20 (55.6%) attained secondary school as their highest level of education. All 36(100%) of the patients were symptomatic at presentation. Abdominal pain, amenorrhoea and syncopal attack were the most common symptoms at presentation. Also, multiple sexual partners 27(75%), previous abortions 25(69.4%) and previous sexually transmitted infections 10(27.8%) were the most common risk factors present in the patients. Abdominal paracentesis 32(88.9%), ultrasound 8(22.2%) and urine pregnancy tests 7(19.4%) were most commonly utilized for diagnosis. None of the cases was diagnosed before rupture. Open abdominal surgery was the treatment employed in all the patients.

**Conclusion:** Ectopic pregnancy is still a major challenge in gynaecological practice in our centre. Most cases present late making tubal conservation treatment inapplicable. This has far reaching implications in a society where there is high premium on child bearing.

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## INTRODUCTION

Ectopic pregnancy is a common life threatening emergency in pregnancy and the leading cause of pregnancy –related deaths in the first trimester<sup>1</sup>. It results in significant morbidity for the mother and inevitable loss of the pregnancy. Apart from fetal wastage, maternal mortality and morbidity, ectopic pregnancy is also associated with repeat ectopic gestation and impairment of subsequent fertility<sup>2</sup>.

Ectopic pregnancy is a global problem and has shown a rising incidence during the last 3 decades the world over<sup>1,3</sup>. This increase is associated with increase in pelvic infections, advances in assisted reproductive technology, tubal surgeries and sterilizations, use of intrauterine devices and earlier diagnosis with more sensitive methods of cases that otherwise would have resolved without causing any symptom<sup>1,3</sup>.

The importance of ectopic pregnancy in our environment is peculiar because rather than join the global trend of early diagnosis and conservative approach in management, we are challenged by late presentations with rupture in more than 80% in most of the cases.<sup>4,5</sup> We are also challenged by poor diagnostic tools, limited capacity to handle emergencies and consequent burden of increased maternal morbidity/mortality and consequent reproductive failure. In managing ectopic pregnancy therefore, there is need for a ‘high index of suspicion’<sup>6</sup>. Women of reproductive age presenting with abdominal pain, history of amenorrhea, vaginal bleeding, syncope or hypotension should have pregnancy test performed. Those with positive pregnancy tests should have a diagnostic work up to detect ectopic pregnancy. Ultrasound evaluation especially transvaginal scan is invaluable but where the result is equivocal, ancillary tests should be done. These include: quantitative estimation of  $\beta$ -hCG (doubling and or discriminatory level), laparoscopy and diagnostic uterine curetage<sup>7</sup>.

The treatment of ectopic pregnancy is influenced by the clinical state of the patient, the site of the ectopic gestation, the reproductive wish of the patient and the available facilities and technology. Surgical treatment for ectopic is still the norm and ‘gold standard’<sup>8</sup> and may be open laparotomy or minimal access surgery. The surgical procedure may also be radical (salpingectomy) or conservative (linear salpingotomy)<sup>8</sup>. Expectant and medical treatments may also be used but good patient selection is important. In expectant management, the initial  $\beta$ -hCG must be less than 1000IU/L and should fall by at least 15% in the first 24hours<sup>8</sup>. For medical treatment, systemic methotrexate is usually employed however ultrasonographically

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or laparoscopically guided injection into the gestational sac can lead to resolution in asymptomatic patients with ectopic pregnancy.

A dilemma may arise when there is a properly and reliably diagnosed ectopic pregnancy with a live fetus. Nevertheless the magnitude of complications of ruptured ectopic gestation are enormous, that delaying the treatment of a reliably diagnosed ectopic to a time of rupture or imminent rupture in other to justify not tampering with life may be considered unethical and illegal.<sup>9</sup> This work therefore reviewed patients with ectopic gestations in our centre with the aim of ascertaining the epidemiological, diagnostic and therapeutic modalities currently employed. It will also compare with trends elsewhere and advocate improvement in diagnosis and management.

### MATERIALS AND METHODS

This was a retrospective study of ectopic pregnancies at NAUTH Nnewi from January 1<sup>st</sup>, 2002 to December 31<sup>st</sup>, 2006. The case notes of the patients with ectopic pregnancy were traced through the accident and emergency, gynaecology ward and theatre registers. The labour ward register was used to ascertain the total number of deliveries for the same period. Information on the biosocial data, clinical symptoms and signs, diagnostic tools employed; sites and treatment options, risk factors for the disease as well as associated morbidity and mortality were extracted. All the surgeries were salpingectomy by open laparotomy and general anaesthesia with endotracheal intubation was used in all the cases. The data was analyzed with simple descriptive statistics and presented in frequency charts and tables.

### RESULTS

In the 5 year review period, there were a total of 2,746 deliveries, 565 gynaecological admissions and 36 ectopic gestations, recorded. This gives an incidence of 1.3% of total deliveries and 6.5% of gynaecological admissions. The majority 16(44.4 %) were in the age group 26 – 30 years. See table 1.

Married women accounted for 77.8% of all cases and majority had secondary education as their highest educational attainment (table 1). The prevalence is equal in both primigravidas and secundigravida 13(36.1%) but lower in grand multiparous women 5(13.1%). Abdominal pain, was present in all the 36(100%) patients, 35 patients (97.2%) had amenorrhoea while 23(63.8%) and 15(41.7%) had syncope and vaginal bleeding respectively (See figure 1). The 3 most common risk factors in the study are: multiple sex partners 27(35.5%), previous abortions 25(32.9%), and previous sexually transmitted infections 10(13.2%). See table 2.

All the patients had tubal ectopic pregnancies and they were all ruptured at the time of presentation. Twenty five (69.4%) were ampullary, 10(27.8%) isthmic while only 1(2.8%) of the patients had fimbrial ectopic. In 69.4% of the patients, the ectopic pregnancy was on the right while the remaining 30.6% had left sided ectopic pregnancy. Blood transfusion was necessary in 34(94.4%) of the patients. There was no mortality and 34(94.4%) of the patients were discharged within 8 days of admission and the remaining 2(5.6%) within 14 days.

**Table 1: The Socio-demographic characteristics of the patients**

Variable	No of patients	Percentage (%)
<b>A. Age(years)</b>		
26 – 30	16	44.4
31 -35	15	41.7
36 -40	5	13.9
Total	36	100.0
<b>B. Level of Education</b>		
Primary	12	33.3
Secondary	20	55.6
Tertiary	4	11.1
Total	36	100.0
<b>C. Marital Status</b>		
Married	28	77.8
Single	6	16.7
Widowed	2	5.5
Total	36	100.0
<b>D. Gravidity</b>		
1	13	36.1
2	13	36.1
3	2	5.6
4	3	8.3
≥5	5	13.9
Total	36	100.0

**Table 2: Identifiable risk factors**

Risk factor	No of patients	Proportion (%)
Multiple sex partners	27	35.5
Previous abortion	25	32.9
Previous STD's	10	13.2
Abdominal/pelvic surgeries	7	9.2
History of infertility	5	6.6
Hormonal contraception	1	1.3
Previous ectopic	1	1.3

NB: Some patients had multiple risk factors.

**Table 3: Shows the yearly distribution of ectopic pregnancy per number of deliveries.**

Year	No of ectopic pregnancy	No of births	Incidence (%)
2002	5	740	0.68
2003	8	616	1.30
2004	5	532	0.94
2005	9	490	1.84
2006	9	368	2.46
Total	36	2746	1.31

### DISCUSSION

The rate of ectopic pregnancy has followed an increasing trend during the last three decades throughout the world.<sup>1,3</sup> An increasing trend was also noted in our centre. Globally, the reasons for the rising trend are thought to include earlier diagnosis of cases that would otherwise have resolved due to availability of more sensitive methods such as hormonal tests, transvaginal ultrasound and laparoscopy.<sup>3,7</sup> The incidence of 1.31% in our centre is comparable to similar studies by Olarewaju et al<sup>8</sup> (1.71%) in Jos, Onwuhafua et al<sup>9</sup> (1.19%) in Zaria, Gharoro and Igbafe<sup>10</sup> (1.68%) in Benin Nigeria and Rakhowa et al<sup>3</sup> (1.24%) in England. It is however higher than 1 in 161(0.6%) by

Arup Kumar et al<sup>1</sup> in India and 1 in 250 (0.4%) of the ICMR<sup>12</sup> multicentre study also in India. The peak age incidence was 26-30 years which is consistent with the findings by Arup Kumar et al<sup>1</sup>, Igbarese et al<sup>4</sup> and Poonam et al<sup>13</sup>. This corresponds to the age of reproduction and peak sexual activity.

Its preponderance in the first and second pregnancies (see table 1) is not surprising as this may be explainable by the fact that major risk factors of multiple sex partners, previous sexually transmitted infections and abortions precede the ectopic in a cause-effect relationship. The predominant risk factors of, multiple sexual partners (35.5%) and previous abortion (32.9%) are suggestive of tubal damage as a final common pathway which was consistent with the findings in Enugu, Lagos, Benin city and the Niger Delta.<sup>4,14-16</sup> It is also important to note that the use of hormonal contraceptives and IUCD was low amongst the patients (1.3%). This is lower than the 6.1% found by Arup Kumar et al<sup>1</sup>, hence the ICMR<sup>12</sup> study that showed no association may well be true. However, due to the small sample size, no significant deductions can be made from our study. The symptoms at presentation: abdominal pain, amenorrhoea, syncopal attack and vaginal bleeding followed the global trend<sup>1,4,10,13</sup>. The signs (abdominal tenderness, cervical excitation tenderness, adnexal mass and boggy of the Pouch of Douglas) are also not different. The later clinical features are of course those of ruptured ectopic gestation which is the norm in our environment.

Regrettably, all the patients had ruptured ectopic with none being diagnosed before the appearance of symptoms. This is similar to findings from the developing countries where 70 to 95% of cases are ruptured at presentation.<sup>4-5,13,17</sup> On the other hand, a combination of serum  $\beta$ -hCG, transvaginal sonography and laparoscopy lead to early detection in developed countries such that conservative treatment and laparoscopic surgeries are done in more than 90% of cases.<sup>18-19</sup> In establishing diagnosis, history, clinical examination and simple diagnostic procedures like urine pregnancy test, abdominal ultrasound and paracentesis abdominis were mainly used. In contrast to culdocentesis used by Nayama *et al*<sup>20</sup>, paracentesis abdominis was the commonest bedside diagnostic procedure in 88.89% of our patients. Current diagnostic procedures in developed countries such as transvaginal sonography, laparoscopy, and serum  $\beta$ -hCG assay were non-existent in our centre during the period under review.

Most of the patients had ampullary ectopic pregnancy which is consistent with studies from other centres.<sup>14,21</sup> The preponderance of ectopic pregnancies on the right is similar to the trend all over the world.<sup>5,22-23</sup> This right sided preponderance has been attributed to appendicitis.<sup>23</sup> Although surgery is the mainstay of management<sup>1,8</sup>, expectant and medical therapy can be offered to prevent fertility impairment<sup>1</sup>. However, in our study as in many developing countries, salpingectomy was done due to late presentation. In most studies in Nigeria, about 90% will present with ruptured ectopic while some may present in shock hence open laparotomy and salpingectomy exceed 90%.<sup>4-5,21</sup> Elsewhere in the developed world, minimal access (laparoscopic) surgery has become the preferred technique unless the woman is haemodynamically unstable.<sup>24</sup>

We had no mortality in our small series similar to a Makurdi study.<sup>21</sup> Other studies had mortality rates of 1.5 to 3.7%.<sup>4,15-17,25</sup> Mortality will of course depend on the size of the study population and the clinical state of the patients on presentation. Anaemia resulting to multiple transfusions and in two instances prolonged hospitalization is responsible for our morbidities. The two patients were of the Jehovah's Witness congregation whose faiths abhorred blood transfusion. One of them received haemacel while the other received intravenous infusions of normal saline and dextrose. No other significant morbidity was encountered in our series.

Finally, ectopic pregnancy still remains a major gynaecological problem associated with appreciable mortality and morbidity. A high prevalence of sexually transmitted infections and unsafe abortions result in high incidence of ectopic pregnancy. Poverty, ignorance, late presentation, non-availability of modern diagnostic tools are the bane of significant improvement in detection and prompt treatment of ectopic pregnancy in developing nations. Emphasis should be on prevention and early detection so as to give patients opportunities for tubal conserving treatment.

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