Original Article

Ectopic Pregnancy in Nigeria's Federal Capital Territory: A six year review

Akaba Godwin.O,[1] Agida Teddy.E[1], Onafowokan .O[1]

[1]Department of Obstetrics and Gynaecology, University of Abuja Teaching Hospital, Gwagwalada, Abuja, Nigeria

ABSTRACT

BACKGROUND: Ectopic pregnancy is a major public health issue and remains a major challenge to the reproductive Performance of women worldwide. The incidence and management approach to ectopic pregnancy over the past few decades has been revolutionized with various modalities of treatment currently in practice.

The objective of the study was to determine the incidence, mode of presentation, diagnosis and treatment of ectopic pregnancy at the University of Abuja teaching hospital, Gwagwalada.

METHOD: This was a retrospective study of ectopic pregnancy cases managed in the hospital between January 2001 and December 2006.

RESULTS: There were 186 ectopic pregnancies out of 6,865 deliveries giving an overall incidence of 2.7%.Ectopic pregnancy accounted for 6.86% of all gynaecological admissions. Presentation was mainly as acute emergencies. Majority, 83.1% had ruptured while 16.9% were unruptured at presentation. The commonest finding on physical examination was abdominal tenderness which occurred in 90.4% of cases. Diagnosis was made solely on clinical findings in 36.7%.All cases had laparotomy and 95.0% had radical tubal surgery.

CONCLUSION: Ectopic pregnancy is still a major health problem amongst women of reproductive age group presenting in the gynaecological unit of the University of Abuja teaching hospital. Laparotomy for salpingectomy is the mainstay of treatment as the patients present acutely, haemodynamically unstable and unfit for conservative management.

KEY WORDS: Ectopic pregnancy, incidence, management, Abuja

Date Accepted for Publication: 13th May, 2012
NigerJMed 2012: 241-245

INTRODUCTION

Ectopic pregnancy is a major health problem for women of reproductive age.[1] It is a significant cause of pregnancy related death in the first trimester and a significant cause of reproductive failure. [1,2,3]

The incidence of ectopic pregnancy varies among and within countries. The overall incidence is increasing over the last few decades.[4, 5] Clinical presentations may be acute, sub acute or asymptomatic.[4]

Ectopic pregnancy can be diagnosed with a sensitivity of 100% and specificity of 99% using a diagnostic algorithm which consists of clinical examination, quantitative serum β-hCG and transvaginal ultrasonography.[6] Examination of the adnexae by transvaginal ultrasound has been reported to have a sensitivity of well over 90% for the detection of ectopic pregnancy.[7]

In many centers in developed countries, transvaginal ultrasound in combination with quantitative assays for serum B-hCG has challenged the central role of laparoscopy is as the "gold standard" in the diagnosis of ectopic pregnancy.[8]

The management of ectopic pregnancy has changed dramatically over the years, from a surgical approach by laparotomy to either conservative minimal access surgery or medical treatment.[9]There has been a dramatic increase in the number of patients managed medically in the out- patient setting in developed countries. [10]

Although the rates of ectopic pregnancy are not falling in the developed world, mortality and morbidity from ectopic pregnancy are falling mainly due to early and improving diagnostic and treatment modalities.[11]The need to ascertain the situation of this trend in Nigeria's federal capital territory formed the basis of this study.

MATERIALS AND METHODS

The study was a retrospective review of all ectopic pregnancies at the University of Abuja teaching hospital over six years between January 2001 and December 2006. Clinical and socio-biological information were retrieved from patient's case notes and supplemented by information from the operating theatre, ward registers and medical record department. Only 177 case notes had adequate information and were used for this study. The data collected were entered into a computer and analyzed using EPI-INFO version 3.3.3 soft ware programme.

RESULTS

During the period under review, there were 186 ectopic pregnancies out of 6,865 deliveries giving an overall incidence of 2.7%.There were 2,711 gynaecological admissions, thus ectopic pregnancy accounted for 6.86% of all gynaecological admissions.

Demographic Characteristics

Table I shows the age distribution of the patients. The mean age of the patients was 26.74 (S.D± 4.56) years. Majority of the patients were married, 131 (74.0%), 42 (23.7%) were single, while 3 (1.7%) were divorced, only 1 (0.6%) patient was widowed. The mean parity of the

Correspondence: Dr Akaba Godwin.O, Department of Obstetrics and Gynaecology, University of Abuja Teaching Hospital, Gwagwalada, Abuja, Nigeria.
Telephone: +2348037927057, E-mail:docakabago@yahoo.com

patients was 1.28(SD± 1.42).Sixty nine (39.98%) were nulliparous, 44 (24.85%) were primiparous, 57 (32.22%) were multiparous while the remaining 7(3.95%) were grandmultiparous.

Risk Factors

One hundred and one (58.1%) had an abortion out of which 35 (19.8%) were induced abortions, while 76 (41.9%) had no history of abortion. Nine (5.1%) patients had previous ectopic pregnancy while 168 (94.9%) did not have a previous history of ectopic pregnancy.

Majority of the patients had no history of previous pelvic surgery, 152 (85.9%) while 25 (14.1%) had a positive history of previous pelvic surgery. Pelvic adhesions were found in 73 (41.2%) at surgery, of these 30 (16.9%) were mild, 34 (19.2%) moderate and 9 (5.1%) were severe while 104 (58.8%) had no pelvic adhesions.

Modes of Presentation

The common symptoms presented by the patients included abdominal pain, amenorrhoea, vaginal bleeding, dizziness and fainting attacks. Abdominal pain was the commonest presenting complaint occurring in 96.6% of cases. This was followed by amenorrhea and vaginal bleeding respectively in 83.6% and 47.5%. Fainting attacks was present in 31.4% of cases and 7.3% had dizziness. The triad of amenorrhoea, abdominal pain and vaginal bleeding occurred in 49 (27.7%). There was no history of amenorrhoea in 28 (15.9%) of cases. Table II shows the distribution of the various combinations of symptoms.

The commonest finding on physical examination was abdominal tenderness which occurred in 160(90.4%). This was followed by cervical excitation tenderness, various degrees of pallor and full pouch of Douglas in 139(78.5%), 118 (66.7%) and 104 (58.8%) respectively.

Diagnosis

Diagnosis was made solely on clinical findings in 65 (36.72%). The remaining 112 (63.3%) had in addition pregnancy test, ultrasound scan, laparoscopy or a combination of these. Abdominal ultrasound scan was used in 112 (63.3%), 42 (23.7%) had pregnancy test done, while only 4 (2.3%) had laparoscopy to aid diagnosis. Transvaginal ultrasound scan was not used.

Treatments

The mean pre operative PCV was 21.2% (S.D± 6.5). Over all 156 (88.1%) had PCV less than 30%.

All cases had laparotomy. The sites of occurrence of the ectopic pregnancy are as shown in table III. It was ampullary in 108 (61.0%) making it the most common site. It was isthmic in 30 (16.9%) and cornual 23(13.0%). Fimbrial ectopic occurred in 12(6.8%) while ectopic pregnancy in the broad ligament occurred twice (1.1%). The least sites of occurrences were in the abdomen and cervix with 1 (0.6%) each.

Ectopic pregnancy occurred on the right side in majority of cases, 104 (59.4%) and 71(40.6%) on the left side. Majority, 147(83.1%) had ruptured ectopic pregnancy while 30 (16.9%) were unruptured. Blood transfusion was carried out in 133 (75.1%) while 44 (24.9%) did not have blood transfusion. Twenty one (11.9%) of patients had auto transfusion while 156 (88.1%) did not.

The type of surgical operation performed is shown in table IV. 168 (95.0%) had radical tubal surgery of which 81 (45.8%) and 66 (37.3%) were partial and total salpingectomy respectively, 22 (12.4%) had cornual resection.

Conservative tubal surgery in form of salpingostomy was carried out in 4 (2.3%). Evacuation of abdominal and cervical pregnancy accounted for 0.6% each while 2 (1.1%) had repair of broad ligament. There was one maternal death (0.6%) during the six year period.

Table I: Age Distribution

Age (years)	Number	Percentage (%)
15-19	7	3.95
20-24	43	24.29
25-29	82	46.33
30-34	32	18.08
35-39	11	6.22
40-44	2	1.33
Total	**177**	**100.00**

Mean 26.74(SD±4.56)

Table III: Sites of ectopic pregnancy

Site	Number	%
Ampullary	108	61.0
Isthmic	30	16.9
Cornual	23	13.0
Fimbrial	12	6.8
Broad ligament	2	1.1
Abdominal	1	0.6
Cervical	1	0.6
Total	**177**	**100.00**

Table IV: Type of surgical operation performed at laparotomy

Type of surgical operation	Number	%
Partial salpingectomy	81	45.8
Total salpingectomy	66	37.3
Cornual resection	22	12.4
Salpingostomy	4	2.3
Repair of broad ligament	2	1.1
Evacuation of abdominal pregnancy	1	0.6
Evacuation of cervical pregnancy	1	0.6
Total	**177**	**100.00**

Table II: Distribution of the various combinations of symptoms at presentation

Symptoms	Number	%
Amenorrhoea, Abdominal pain	38	21.5
Amenorrhoea, Abdominal pain, Dizziness	7	4.0
Amenorrhoea, Abdominal pain, Fainting attack	32	18.1
Amenorrhoea, Abdominal pain, Vaginal bleeding	49	27.7
Amenorrhoea, Abdominal pain, Vaginal Bleeding, Dizziness	7	4.0
Amenorrhoea, Abdominal pain, Vaginal bleeding, Fainting attack	12	6.8
Amenorrhoea, Vaginal bleeding	4	2.3
Abdominal pain alone	7	4.0
Abdominal pain, Dizziness	1	0.6
Abdominal pain, Fainting attacks	9	5.1
Abdominal pain, Vaginal bleeding	10	5.6
Vaginal bleeding, Fainting attack	1	0.6
Total	**177**	**100.00**

DISCUSSIONS

In this study ectopic pregnancy accounted for 6.86% of all gynaecological admissions, this figure is similar to 6.74% reported by Gharoro et al in Benin.[12]

The incidence of ectopic pregnancy of 2.7% is comparable to findings of 2.3% reported in Benin by Oronsaye et al [13] and in Lagos by Anorlu et al .[14] It is however higher than the incidence of 1.19% and 1.68% reported by Ezem et al [15] and Gharoro et a.l [12] The high incidence in this study may be attributable to the cosmopolitan nature of Abuja as well as modifiers of disease pattern like increased migration of people to Nigeria's federal capital territory. The observed increasing incidence of ectopic pregnancy during the period under review is comparable to the observation in Ife[16] and other communities.[10] Attributable factors include increasing incidence of sexually transmitted infections and greater accuracy of contemporary methods for diagnosis resulting in fewer ectopic pregnancies going undetected.

The peak age incidence of 25 29 years (46.33%) is comparable to the finding in Cameroun.[5] It is however higher than 20 25 years and 21 25 years reported by Gharoro et al and Abdul.[12, 17] The high frequency of 88.5% between the ages of 20 30 years makes ectopic pregnancy a major health problem for women of reproductive age in Abuja.

Majority of the patients were married, 131 (74.0%). This is similar to the report by Igberase et al where 62.6% were married.[3] Although the majority were married, 43 (23.7%) were single which agrees with the views of Okpere that youths were becoming more sexually active before marriage in many countries including Nigeria.[18]

Pelvic inflammatory disease as evidenced by pelvic adhesion at laparotomy, 73 (41.2%) was the most common predisposing factor for ectopic pregnancy. This is similar to 40.85%, 50.71% and 63.3% reported by Gharoro et al, Abdul and Oronsaye et al respectively.[12, 17, 13] It is also in agreement with earlier observations.[15] Infection of the tubal endothelium results in damage of ciliated epithelium and formation of intra- mural adhesions and pockets. A consequence of these anatomical changes is entrapment of the zygote and ectopic implantation of the blastocyst.[19] Prevention of pelvic inflammatory disease may not only reduce ectopic pregnancy but also reduce the adverse effects on tubal patency.[20]

The history of induced abortion in this study of 19.8% is comparable to 14.79% and 22% earlier reported in Ilorin and Benin.[17, 13] It is however lower than the findings in other series.[3, 12] The study showed that 9(5.1%) had had a previous ectopic pregnancy, this is close to 3% and 3.8% earlier quoted by Oronsaye and Ezem et al.[13, 15]

Abdominal pain was the commonest presenting complaint occurring in 96.6%, this was followed by history of amenorrhoea and vaginal bleeding accounting for 83.6% and 47.5% respectively. This presentation is similar to report in other series.[12, 13, 21] Thus ectopic pregnancy should be excluded in any woman of child bearing age presenting with abdominal pain.[10] The classical triad of amenorrhoea, abdominal pain and vaginal bleeding occurred only in 27.7%, thus a high index of suspicion is important in the early diagnosis of ectopic pregnancy.[4, 22] Dizziness and fainting attacks which suggested various degrees of hypovolaemia occurred in 41.7%.This finding depicts the high incidence of ruptured ectopic pregnancy in our environment.

The occurrence of abdominal tenderness as the commonest finding on clinical examination is similar to the findings by Igberase et al and Oronsaye et al, [3, 13] also is

the occurrence of cervical excitation tenderness.

Diagnosis was made solely on clinical finding in 65(36.72%), this was similar to 40.14% observed in Ilorin.[17] However it was lower than 75% of cases diagnosed by a high index of suspicion after clinical evaluation in Ife.[16] The use of abdominal ultrasound scan in 63.3% and urine pregnancy test in 23.7% is however higher than the observation in Ife of 15.3% and 5.7% respectively.[16]

The use of laparoscopy in diagnosis was in only 2.3% and comparable to 5.7% use in Ife.[16]This was because of the acute presentations with majority of the patients being haemodynamically unstable at presentation. Transvaginal ultrasound scan was not used neither was serum B hCG level estimated in any of these cases.

The high frequency of ruptured ectopic pregnancies in 147(83.1%) is similar to findings of 84.28%, [17] 95.3%, [3] 80.3%[12] and 98.1% [23] in Ilorin, Abraka, Benin and Accra respectively. This was confirmed by the low mean pre operative packed cell volume of 21.2% with 156 (88.1%) of patients having packed cell volume less than 30% prior to surgery. Factors responsible for this high frequency of rupture may include late presentation at the hospital and difficulty in early diagnosis of ectopic pregnancy.

The ampullar was the commonest site (61.0%) which is similar to findings in other series in the country [15, 17] and elsewhere. [19, 23] It occurred more on the right side, this is probably due to increased tendency for latent infections on the right side from inflammation of the appendix.

Abdominal pregnancy accounted for 1 (0.6%) as was the case for cervical pregnancy. This value is less than the 4.3% reported by Ayinde et al in UCH Ibadan.[24] Surgery was the mainstay of treatment as all patients had laparotomy. Radical surgery in the form of salpingectomy was the major operation carried out in 77.9% while cornual resection was done in 13.0%. Conservative surgery in the form of salpingostomy was done in 4 (2.3%), it is similar to 2.4% by Shittu et al in Ife.[16] Other series have also reported radical surgeries as the mainstay of treatment.[16, 13, 12, 17] This is due to the high rate of ruptured ectopic pregnancies which does not conform to the criteria for conservative management.[1]

There was one maternal death (0.6%) during the six year period; this report is similar to 0.7% mortality reported in a reference maternity in Niamey, Niger Republic [25] but lower than 5.9% reported by Awojobi et al [26]. Morbidity and mortality were essentially low due to improved availability of blood transfusion services as well as efficient post operative care.

In conclusion, the incidence of ectopic pregnancy is high and affects women of reproductive age group presenting in the gynaecological unit of the University of Abuja teaching hospital. Pelvic inflammatory disease and previous induced abortions are the main identified risk factors.

Diagnosis still involves a high index of clinical suspicion, use of abdominal ultrasound scan and urine pregnancy test. This is contrary to findings in developed countries where the use of serum β-hCG levels, transvaginal ultrasound scan in addition to clinical findings results in earlier and specific diagnosis of uterine pregnancy than abdominal sonography.[22]

Laparotomy for salpingectomy is still the mainstay of surgery due to late presentations when the patients are haemodynamically unstable and unfit for conservative management. This is also different from developed countries where the treatment is shifting from saving lives to preservation of fertility.[10]

Prevention of pelvic inflammatory disease and safe abortion services will help reduce the incidence of ectopic pregnancy. Also early presentation to the hospital, coupled with a high index of suspicion by clinicians, availability of diagnostic facilities and functional blood transfusion services will help reduce the morbidity and mortality associated with ectopic pregnancy.

REFERENCES

1. American College of Obstetricians and Gynaecology: Medical management of tubal pregnancy. ACOG practice Bulletin No. 3, 1998. In; Compendium of selected publications, 2006.pp719-725.
2. Uzelac P.S, Garmel S.H.Early pregnancy.In: Current Diagnosis and Treatment Obstetrics and Gynaecology. 11th Edition.Decherney A.H, Nathan L, Goodwin T.M, Laufer N (Ed) MacGraw Hill (publisher) 2007, pp 259-272.
3. Igberase G.O, Ebiegbe P.N, Igbekoyi O.F, Ajufoh B.I. Ectopic pregnancy: An 11 year review in a tertiary center in the Niger Delta. Trop Doct. 2005 July; 35 (3): 175-7.
4. Grudzinskas J.G. Miscarriage, ectopic pregnancy and Trophoblastic disease. In Dewhursts Textbook of Obstetrics and Gynaecology for post graduates. 6th Edition. Edmonds D.K. (Ed) Blackwell Science (publisher) 1999, pp 61-75.
5. Kouam L. Kamdom-mayo J, Doh A.S, Ngassa P. Treatment of Ectopic pregnancies by laparotomy in under equipped countries. A series of 144 cases at the Yaoundé University Centre Cameroon. Gynaecol Obstet Biol Reprod. (Paris) 1996; 25 (8): 804-8.
6. Yao M, Tulandi T. Current Status of Surgical and non surgical management of ectopic pregnancy. Fertil

Steril 1997; 67: 421-32.
7. Atri M, de stempel J, Bret P.M. Accuracy of transvaginal ultrasonography for detection of haematosalpinx in ectopic pregnancy. J. Clin ultrasound 1992; 20: 255-61.
8. Sowter M.C, Frappell J. The role of laparoscopy in the management of ectopic pregnancy. Reviews in Gynaecological practice 2, 2002: 73-82.
9. Tulandi T,Sammour A. Evidence based management of ectopic pregnancy.Curr Opin Obstet Gynecol.2000;12(4):289-92.
10. Speroff L, Fritz M.A. Ectopic pregnancy. In: Clinical Gynaecologic Endocrinology and Infertility. 7th Edition. Speroff L, Fritz M.A. (Ed). Lippincott Williams & Wilkins (publisher) 2005. pp 1275-1302.
11. Vivek N,Isaac M.Tubal ectopic pregnancy: diagnosis and management .Arch Gynecol Obstet.2009;279(4):443-53
12. Gharoro E.P, Igbafe A.A. Ectopic pregnancy revisited in Benin City, Nigeria: Analysis of 152 Cases. Acta Obstet Gynaecol Scand. 2002 Dec; 81(12): 1139-42.
13. Oronsaye A.U, Odiase G.I. Incidence of Ectopic pregnancy in Benin City, Nigeria. Trop Doct. 1981 Oct; 11(4): 160-63.
14. Anorlu R.I, Oluwole A, Abudu O.O. Adebayo S. Risk Factors for ectopic pregnancy in Lagos Nigeria. Acta Obstet Gynaecol. Scand. 2005 Feb; 84 (2): 184-8.
15. Ezem B.U, Essel B.K, Otubu J.A. Ruptured Tubal Pregnancy in the Northern part of Nigeria. East Afr Med J. 1980; 57(8): 576-83.
16. Shittu S.A, Orji E.O, Dare F.O, Ogunniyi S.O. A ten year review of ectopic pregnancy in Ile Ife. Trop J Obstet Gynaecol. 2001: 18 (1): 48.
17. Abdul I.F. Ectopic pregnancy in Ilorin, Nigeria. Int J Gynecol Obstet 1999 (66): 179-180.
18. Okpere E. Adolescent Reproductive Health Issues. In: Clinical Gynaecology. 1st Edition. Okpere E. (Ed). Uniben press Nig (publisher) 2005. pp 203-209.
19. Lukas D.K. Ectopic pregnancy. In: Gynaecology. 3rd Edition. Shaw R.W, Soutter W.P, Stanton S.L. (Ed). Churchill Livingstone (publisher) 2003, pp 371-386.
20. Kamwendo.F, Forslin.L, Bodin.L, Danielson.D. Epidemiology of ectopic pregnancy during a 28 year period and the role of pelvic inflammatory disease. Sex Transm Infect. 2000 Feb; 76 (1):28-32.
21. Shah N, Khan N.H. Ectopic pregnancy. J. Coll Physician Surg Pak. 2005 Sep; 15 (9): 535-8.
22. Cunningham F.G, Hauth J.C., Leveno K.J, Gilstrap L, Bloom S.L. Wenstram K.D, Ectopic pregnancy. In: Williams Obstetrics. 22nd Edition Cunningham F.G, Hauth J.C. (Ed). McGraw Hill (publishers) 2005, pp 253 - 272.
23. Baffoe S, Nkyekyer K. Ectopic pregnancy in Korle Bu Teaching Hospital, Ghana: A three year review. Trop Doct. 1991, Jan; 29(1): 18-22.
24. Ayinde O.A, Aimakhu C.O, Adeyanju O.A, Omigbodun A.O. Abdominal pregnancy at the University College Hospital, Ibadan. A ten year Review. Afr J Reprod Health. 2005 Apr; 9 (1): 123-7.
25. Nayama M. Gallais A, Ousmane N, Idi N, Tahirou A, Garba M.et al. Management of ectopic pregnancy in developing countries: Example of a Nigerian reference maternity. Gynaecol Obstet fertil. 2006 Jan; 34(1):14-8.
26. Awojobi O.A, Ogunsina S. Ectopic pregnancy in rural practice. Niger J Med 2001 Jul Sep; 10(3): 139 - 40.