Ectopic Pregnancies at the Ahmadu Bello University Teaching Hospital, Kaduna, Northern Nigeria.

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Abstract

Background: *Ectopic pregnancy continues to be a major surgical emergency in gynaecology.*
Objective: *To determine the incidence, clinical pattern, surgical management, morbidity and mortality from ectopic pregnancy in a Nigerian tertiary health care center.*
Study Design, Setting and Subjects: *The case files of 149 patients who had ectopic pregnancy between 1990 and 1997 at a University Teaching Hospital, were reviewed for biological, social and clinical data.*
Results: *The frequency of ectopic pregnancy was 1 in 71 deliveries (1.4%). Being married, in the age group 25-29 years, nulliparous and never practiced contraception were found to be risk factors. Abdominal pain (87.2%) and abnormal vaginal bleeding (57.4%) were the commonest symptoms, while circulatory collapse occurred in 10.7% of patients. Diagnostic differentials ranged from acute pelvic inflammatory disease (PID) and threatened abortion to ruptured uterus. Nearly all (96%) of the gestational sacs were ruptured before presentation. In 97 (67%) of the patients, there was macroscopic evidence of PID. More than 90% of the pregnancies were tubal, with 88% of these being located in the ampulla. Abdominal pregnancy occurred in 4 patients. Unilateral partial salpingectomy was done in 104(69.79%) patients, and 2 live mature fetuses were delivered at laparotomy. One maternal death occurred among the patients.*
Conclusion: *The frequency of ectopic pregnancy is still high in this environment. Early presentation, high index of suspicion and use of modern diagnostic techniques will improve overall clinical outcome in patients. Promotion of family planning, early treatment of PID and good quality obstetric care could be important preventive intervention measures.*
Key Words: Pregnancy, Gestational Sac, Ectopic, Tubal, Rupture. [Trop J Obstet Gynaecol, 2001, 18: 82-86]

Introduction

Ectopic pregnancy (EP) continues to be one of the major surgical emergencies in gynecology, especially in the tropics where patients usually present with the ruptured variety, with the attendant peritoneal flooding and its clinical consequences [1,2]. It is a significant cause, of maternal morbidity and mortality, as well as increased fetal wastage in women of reproductive age [3,4].

The etiology of ectopic pregnancy remains an enigma and it is said to be rare in subhuman primates and lower animals [5] and it remains a major problem in contemporary gynecology according to Kadar [6]. The incidence of the disease varies widely among different populations and it is reported to be rising [7,8,9]. The purpose of this study is to determine the incidence, and the anatomo-clinical features of the disorder in our hospital.

Materials and Methods

During the period 1st January, 1990 to 31st December, 1997, there were 10572 deliveries and 149 ectopic pregnancies at the Ahmadu Bello University Teaching Hospital, Kaduna. Nigeria. The case files of all the patients that had ectopic pregnancies were reviewed for biological and social data, clinical presentation, and findings at laparotomy, type of surgical treatment, morbidity and mortality associated with the condition.

Results

In the eight-year period of study, there were 10572 deliveries and 149 ectopic pregnancies, giving an incidence of 1.40%(1/71 deliveries). The yearly incidence did not exhibit a definite pattern, but overall, there appears to be a decreasing incidence (Table 1).

One hundred and twenty six (84.56%) of the patients were married, while 23(15.43%) were not. Fourteen (9.39%) of the patients had never been pregnant before the ectopic pregnancy. Two (1.34%) of the patients had previous ectopic pregnancies. Eighteen (12.08%) of the patients had abortions previously. The largest number of ectopic pregnancies 57(38.25%) occurred in the 25-29 years age group. However, the incidence of ectopic pregnancy was highest in the 35-39 and above 40 years age groups (2.07% and 2.88%) respectively. See Table 2.

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All parity groups made significant contributions to the number of patients. Twenty-one (14.09%) were grandmultiparae. The nullipara was the largest group of patients: 34(22.81%). The Para 3 group had the least proportion: 19 (12.75%). The highest frequency was in the Para 4 category (1.85%), while the lowest was in the Para 5-and-above group (0.70%) - see Table 3.

Table 1

Annual Frequency of Ectopic Gestations

Year	Number of Deliveries	Number of Ectopic Gestations	Frequency %
1990	1515	11	0.72
1991	1303	27	2.07
1992	1381	31	2.24
1993	1283	19	1.48
1994	732	9	1.22
1995	1471	19	1.29
1996	1244	17	1.36
1997	1643	16	0.97
Total	**10572**	**149**	**1.40**

Table 2

Age and Ectopic Pregnancy

Age (years)	Number of Deliveries	Number of Ectopic Gestations	% of Total Ectopics	Frequency per 100 Deliveries
< 20	952	8	5.36	0.84
20-24	2379	41	27.51	1.72
25-29	3626	57	38.25	1.57
30-34	2506	18	12.08	0.71
35-39	866	18	12.08	2.07
40 & over	243	7	4.69	2.88
Total	10572	149	100	1.40

There was a history of contraceptive use in only 17(11.40%) of the patients. The commonest method of contraception among the patients being "morning after" pills used by 5 patients; intrauterine contraceptive devices (IUCD) in 4; injectable contraceptives in 2 and Norplant implant in 1 patient. Thirty (20.13%) of the patients had a history of treatment for infertility. In eight (5.36%) of the patients, there was a history of termination of pregnancy preceding the ectopic pregnancy.

Table 3

Parity and Ectopic Pregnancy

Parity	Number of Deliveries	Number of Ectopic Gestations	% of Total Ectopics	Frequency per 100 Deliveries
0	1958	34	22.81	1.73
1	1752	27	18.12	1.54
2	1618	28	18.79	1.73
3	1242	20	13.42	1.61
4	1026	19	12.75	1.85
5 & over	2976	21	14.09	0.70
Total	**10572**	**149**	**100**	**1.40**

The presenting symptoms are shown in Table 4. The differential diagnoses varied from acute pelvic inflammatory disease in 23 patients to threatened abortion (11 patients), dysfunctional uterine bleeding, acute appendicitis and dysmenorrhoea (3 patients each). Others were uterine fibroids in 1 patient, ruptured uterus in one and normal menstruation in another patient. Paraclinical diagnostic aids used for diagnosis include; ultrasound 95(63.7%), *paracentesis abdominis* 51(34.22%) and urine pregnancy test 2 (1.34%).

The routes of peritoneal approach during surgery included, midline sub-umbilical incision 117(78.52%), Pfannenstiel incision 30(20.13%) and paramedian incision 2(1.34%). One hundred and forty three (95.97%) of the ectopic pregnancies were ruptured before presentation. There was macroscopic evidence of pelvic inflammation at laparotomy in 91(61.07%) of the patients. There were 135(90.60%) tubal pregnancies, including four tubal abortions and one heterotopic, 2 (1.34%)ovarian, 8(5.36%) tubo-ovarian, and 4(2.68%) abdominal pregnancies. There were 131 pure tubal ectopic pregnancies, excluding 4 tubal abortions. The anatomical sites of the ectopic pregnancies included 88 (67.17%) in the ampulla, 15 (11.45%) each for the isthmus and fimbria, while cornual pregnancies were 13 (9.92%).

Table 4

Symptoms in Patients With Ectopic Pregnancy

Symptoms	Number of Patients	Proportion %
Abdominal Pain	130	87.24
Abnormal Vaginal Bleeding	87	57.38
Vomiting	25	16.77
Fainting Attacks	20	13.42
Frank Shock	16	10.73
Fever	12	8.05
Dysuria/Frequency	6	4.02
Diarrhea	6	4.02
Abdominal swelling	4	2.68

The specific surgical procedures done are outlined in Table 5. Two live and mature fetuses were delivered at laparotomy. Morbidity included, blood transfusion in 32 patients (78.52%), wound sepsis/disruption in six patients (4,02%), urinary tract infections in two (1,34%), colostomy in one (0.67%), bladder injury in one and blood transfusion reaction in another. One patient developed choriocarcinoma (0.67%). There was one maternal death (0.67%).

Discussion

The incidence of 1.40% of ectopic pregnancy (EP) found in this study is higher than the reports from developed countries [9,10]. It is similar to previous findings from the geographical north of Nigeria [11,12,13]. It is however lower than the figures reported from the geographical south of Nigeria [14,15,16]. The comparatively lower incidence of EP in the North of Nigeria may be a result of a perceived lower prevalence of chronic pelvic inflammatory disease [11]. The frequency of EP was highest in those with a parity of 4 and the age group above 35 years. This could be the result of tubal damage occurring as a consequence of pelvic infections, from inappropriate obstetric care, or from unsafe abortions. Other yet to be determined factors may also be implicated.

EP can present with diverse symptoms as shown in this study. Abdominal pain and abnormal vaginal bleeding were the most common presenting symptoms, and this is similar to the findings of others [17, 18]. Abdominal pain akin to that of frank peritonitis is not unusual since most of the patients present with the ruptured variety of EP (96% in this study), unlike in the developed countries where the unruptured variety is more common [19, 20].

Table 5

Types of Surgical Management

Procedure	Number of Patients
Unilateral Partial Salpingectomy	104 (69.8%)
Unilateral Total Salpingectomy	2 (1.3%)
Bilateral Partial Salpingectomy	1 (0.7%)
Unilateral Salpingectomy and Contra-Lateral Repair of Ovary	5 (3.3%)
Salpingectomy and Ipsi-Lateral Repair of Ovary	3 (1.9%)
Salpingectomy and Uterine Curettage	1 (0.7%)
Salpingo-Oophorectomy	10 (6.7%)
Repair of Cornual Rupture	7 (4.7%)
Cornual Resection	1 (0.7%)
Oophorectomy	1 (0.7%)
Ovarian Repair	1 (0.7%)
Ligation of Bleeding Vessels	2 (1.3%)
Colostomy	1 (0.7%)
Salpingoplasty	1 (0.7%)
Salpingostomy	2 (1.3%)
Salpingectomy and Salpingoplasty	2 (1.3%)
Enucleation of Gestational Sac	2 (1.3%)
Salpingectomy and Myomectomy	1 (0.7%)
Laparotomy and Delivery of Live Fetuses	2 (1.3%)

The differential diagnosis can be as varied as seen in this study, with acute PID easily the most common differential. Even ruptured uterus featured on two occasions as a differential diagnosis. These were the cases of mature abdominal pregnancies. This gamut of clinical presentation calls for good clinical and paraclinical examinations. The other diagnostic aids employed include ultrasound and *paracentesis abdominis*. A good number of these patients had the ultrasound and *paracentesis* done at their source of referral and only came with the reports of such tests. *Paracentesis abdominis* in the presence of obvious signs of acute internal hemorrhage and peritoneal signs, as is the case in most of the patients seen here, is no longer the practice in our institution. Moreover, when it is performed at centers without facilities for laparotomy, it may cause further unnecessary delay before referral.

Laparotomy remains, for now, the only surgical intervention method at our disposal for the management of ectopic pregnancy, due to non-availability of an operating laparoscope, which has been shown to be very useful [21, 22], in the hospital. Another factor worth considering is the fact that majority of the patients presented with significant haemoperitoneum and other associated pathology that would have made laparoscopic surgery less than ideal. This is also the limiting factor in the use of cytotoxic drugs as reported by various workers [23, 24]

The tube remains the commonest site of EP, with the ampulla being the segment most affected. This is similar to the findings of other workers [15,25]. Very significant also in this study, is the incidence of one ovarian pregnancy to 5286 normal pregnancies. This is higher than the incidence of 1/40.000, reported by Punnonen and Lauren [26]. Could it be that in the present study the criteria for the diagnosis of ovarian pregnancy was not fully adhered to? Spielgelberg [27] in his treatise gave the following as the criteria for the diagnosis of ovarian pregnancy:

- the fallopian tube on the affected side must be normal
- the gestational sac must occupy the normal position of the ovary.
- the sac must be connected to the uterus by the ovarian ligament.
- ovarian tissue must be histologically demonstrable in the wall of the sac.

Partial salpingectomy remains the commonest surgical procedure for the management of EP at the ABUTHK and this derives mainly from the fact that the tube is the commonest site of EP and that the procedure is often easier than total salpingectomy. Ipsilateral oophorectomy was only performed when the ovary was diseased or involved in the adnexal mass. Conservative surgery was reserved for women with less damaged tubes and in those with contralateral tubal disease, especially if they are nulliparous. The only maternal death in this study followed laparotomy and delivery of a mature live fetus in a patient with an abdominal pregnancy. She succumbed to severe haemorrhage.

Ectopic pregnancy remains an important clinical problem. Eradication of unsafe abortions; general acceptance of family planning as a way of life and provision of good quality obstetric services are necessary preventive measures. Furthermore, good clinical examination, added to judicious use of modern diagnostic instruments, will lead to quick diagnosis and early treatment. The time is now ripe **for the introduction of minimal invasive surgical techniques in our practice, to reduce the morbidity often associated with laparotomy.**

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