

Ectopic pregnancy in Sokoto, Northern Nigeria

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Abstract

Ectopic pregnancy is an important cause of maternal mortality and morbidity in the first trimester of pregnancy. We report a descriptive, cross-sectional study of ectopic pregnancy presenting to the Usmanu Danfodiyo University Teaching Hospital (UDUTH), Sokoto, between 1990 and 1997. There were 140 cases of ectopic pregnancy with incidence of 18.1 per 1,000 deliveries. The mean age of patients was 26.7 years and the median parity of cases of ectopic gestation was 1; 32% were nulliparae. Abdominal pain and tenderness were the most frequent symptom and sign respec-

tively. Diagnosis was usually based on clinical findings augmented by procedures including paracentesis abdominis, abdominal ultrasound scan and urine pregnancy test. The ectopic pregnancy was sited in the Fallopian tube in 92% of cases. In 56 cases (41%), there was macroscopic evidence of previous pelvic infection at surgery. 66% of ectopic pregnancies had ruptured at presentation. Treatment was surgical in all but one case, and unilateral salpingectomy was the procedure most frequently performed. The case fatality rate was 1.5%.

Introduction

Ectopic Pregnancy (EP) is a condition in which the fertilized ovum implants at a site other than the normal endometrial cavity and is an important cause of maternal morbidity and mortality in the first trimester of pregnancy^{1,2,3}. In the vast majority of cases, fetal loss is inevitable. Its incidence, which varies in different parts of the world, is reported to be increasing worldwide^{3,4}. Although the condition was first described by Albucasis in AD 963, it was not until 1883 that Lawson Tait performed the first successful operation, salpingectomy, for EP⁵. Recent advances in technology have led to earlier diagnosis of this life-threatening condition. As a result, conservative surgical procedures, as well as medical and expectant forms of treatment, are increasingly being used in its management³.

This study was carried out to determine the incidence, presentation, diagnosis, aetiology and management of EP at the Usmanu Danfodiyo University Teaching Hospital (UDUTH) Sokoto.

Methods

The records of all cases of EP that presented at UDUTH between January 1990 and December, 1997 were reviewed. Information extracted from the records included demographic and biosocial parameters of the patients, clinical features, treatment given and outcome. The operating theatre records, as well as data pertaining to the number of deliveries during the study period, were also reviewed. Data thus obtained was subjected to simple descriptive statistics for frequency, mean and median.

Results

During the study period, there were 140 cases of EP at UDUTH, Sokoto, and 7731 deliveries. The incidence of EP was 18.1 per 1,000 deliveries, or 1 in 55 deliveries. Only 138 case notes were available for detailed analysis. Table 1 shows the age and Table 2 the parity of patients with EP. The ages of patients ranged from 17 to 42 years, with a mean age of 26.7 years (Standard Deviation 5.6). The median parity in women with EP was 1 (range 0-6), and 32% of cases were nulliparae. 78% of patients were married women.

Table 3 shows the clinical presentation of EP. Abdominal pain and tenderness were the most frequent symptom and sign, respectively, while cervical excitation tenderness was the most frequently elicited sign on pelvic examination. Table 4 shows the duration of amenorrhoea in women with EP; the modal duration of amenorrhoea was 8 weeks.

Paracentesis was carried out in 95 patients and was positive in

88 (92.6%), while culdocentesis was performed in 12 cases and positive in 9 (75%). Trans abdominal ultrasound scan and laparoscopy were carried out to confirm the diagnosis in 32 and 8 patients respectively. Two of the patients had a previous history of EP, and one patient had an intrauterine contraceptive device *in-situ* when she developed EP. The EP was sited in the Fallopian tube in 127 cases (92%) – 64 on the right and 63 on the left. The ampulla was the commonest location of tubal ectopic pregnancies. The ovaries were the location of EPs in 5(3.6%) and abdominal or pelvic cavity in 6 cases (4.3%). All the EPs located in the ovaries were in the right ovary. In 56 cases (41%), there was macroscopic evidence of previous pelvic infection at surgery. 66% of EPs had ruptured at presentation.

Table 5 shows the treatment given; unilateral salpingectomy was the most frequent procedure performed. All surgical procedures were carried out by open laparotomy. There were 2 deaths, giving a case fatality rate of 1.5%.

Discussion

Globally, there is a wide variation in the incidence of ectopic pregnancy (EP). An incidence of 1 in 150 mature pregnancies has been quoted for the United Kingdom, 22 per 1,000 live births for the United States of America, and figures as high as 43.8 per 1,000 deliveries from Lagos, Nigeria^{4,6}. The incidence in our institution of 18.1 per 1,000 deliveries lies some where in the middle of this spectrum. The question must be asked however, is this wide disparity between the incidence of EP in the developed world and Nigeria genuine or artificial? The answer is neither easy nor obvious. In the first place, most published reports on EP from Nigeria, as in our case, are from institutions. Yet, in Nigeria, only 37% of deliveries take place in healthcare facilities⁶⁻¹¹. To compound this uncertain state of events, socio-cultural and religious factors preclude the routine performance of autopsies in many parts of Nigeria including Sokoto, even for patients who die in hospitals. It would therefore come as no surprise that an unspecified number of women with EP take their illness undiagnosed to the grave.

The age and parity of our patients were similar to reports from other centres in Nigeria^{6,9,10} but differ somewhat from findings of a nationwide study in Senegal, where cases of EP were found to be on average younger and of higher parity than in Sokoto¹². As in Benin-City, Nigeria, the majority of our patients were married⁷.

Clinical features were similar to those reported by other workers, with the almost ubiquitous presence of abdominal pain and tenderness being noteworthy^{4,6,8,9}. It is pertinent to note that at

least 84% of our patients gave a history of amenorrhoea of five weeks duration or more – in other words, they were aware that their menstrual period was delayed. It would thus seem reasonable to suggest that the co-existence of abdominal pain with amenorrhoea in any woman in the childbearing age group should raise a suspicion of ectopic gestation.

In patients who presented relatively early, were clinically stable, and/or when the diagnosis was in doubt, urine pregnancy test, trans abdominal ultrasound scan, and in a few cases, laparoscopy were carried out to aid in the diagnosis. Although recent studies have advocated the use of transvaginal ultrasound scan and quantitative human chorionic gonadotrophin assay in the early diagnosis of EP^{3,13}, these facilities were not available in our centre during the study period.

Paracentesis abdominis and to a lesser extent culdocentesis, were found to be useful in confirming the diagnosis of EP in our institution, as was found by workers in Eruwa and Lagos in Nigeria^{6,8}. This was undoubtedly because most patients presented, or the diagnosis of EP was entertained, late in the course of the disease, with the result that the EP had already ruptured and there was attendant frank intraperitoneal hemorrhage. Other workers have questioned the continued usefulness of these procedures in the diagnosis of ectopic gestation^{9,14}. We, however, advocate that in low resource settings such as ours, which are deficient in 24-hour ultrasound and laparoscopy services, and with no facilities for quantitative human chorionic gonadotrophin assay, they remain useful tools in confirming the diagnosis. In the developing world, this is especially relevant for *paracentesis abdominis*, as it is cheap, minimally invasive, requires minimal equipment, and is easy for a qualified medical practitioner to perform after minimal training. Furthermore, a positive result, that is aspiration of non-clotting blood from the peritoneal cavity, demands immediate intervention in the vast majority of instances, whether due to an EP or not. It must be emphasized however, that a negative result does not preclude the presence of an EP.

The fallopian tube is reputed to be the commonest location for EP,^{4,5,9} as was found in this study. The incidence of ovarian pregnancy - 3.6% of EPs - was higher than quoted by other workers^{4,19}. Pelvic inflammatory disease has been implicated by several workers as the major factor in the aetiology of EP^{3,4,6,10,15}. Although our study found that 40% of patients had macroscopic evidence of previous pelvic sepsis at surgery, the aetiological factor was not obvious in many cases. Consequently, further research is required to elucidate the causative factors in EP in Sokoto.

Treatment of EP was surgical in the majority of cases, with unilateral salpingectomy by open laparotomy being the commonest surgical procedure performed. This practice is similar to that in other centres in Nigeria, and indeed Africa, and is consequent on the late presentation by patients, with a large number of EPs being ruptured on presentation^{6,8-10,12,16}. In developed countries however, where patients usually present early, and the availability of facilities for quantitative human chorionic gonadotrophin assay and transvaginal ultrasound enable early diagnosis, such radical surgery by open laparotomy has become the exception rather than the rule. In those climes, conservative treatment, either surgical or medical, is the preferred therapeutic option^{3,4,13,17,18}. Conservative surgery has been shown to be superior to radical surgery at preserving fertility¹⁹. Except when contraindicated by massive intra-abdominal bleeding and/or extensive intra-abdominal adhesions, the laparoscopic route is pre-

ferred for surgery as it is associated with reduced operating time, hospital stay and convalescence time^{4,13}. Consequently, it is cheaper, as well as having an improved cosmetic result^{4,13}.

Despite the limited facilities in our institution, one case was successfully managed conservatively with parenteral methotrexate. She presented with abdominal pain less than four weeks after her last menstrual period. Although the initial abdominal ultrasound was normal, serial abdominal ultrasound scan and pregnancy test eventually confirmed the diagnosis before tubal rupture. This raises the hope that increased enlightenment of the general public and medical practitioners about EP coupled with more liberal use of ultrasound in early pregnancy could result in earlier diagnosis of EP even in low resource settings such as ours. This would enable the more widespread use of conservative techniques in the treatment of EP in the developing world. The case fatality rate in our institution is consistent with other reports from the developing world^{9,12,16}. Obviously, however, there remains room for improvement in our management of this entirely treatable condition.

In conclusion, EP is an important cause of maternal morbidity and mortality in Sokoto. The most important association is with pelvic infections. Efforts to reduce its impact should therefore include prevention, early and vigorous treatment of pelvic sepsis and sexually transmitted infections. Medical practitioners and other health workers should also be educated about the risk factors and clinical features of EP so as to promote a high index of suspicion and early diagnosis. The liberal use of abdominal ultrasound scan in women who are amenorrhoeic and have abdominal pain should be advocated. Sensitisation and mobilization of the general public on EP is indispensable to successful implementation of the interventions mentioned above.

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Table 1: Distribution of cases of ectopic pregnancy by age

AGE GROUP (YEARS)	FREQUENCY (%)
< 15	0 (0)
15-19	6 (4)
20-24	48 (35)
25-29	45 (33)
30-34	23 (17)
35-39	9 (6)
≥ 40	4 (3)
Not Stated	3 (2)
TOTAL	138 (100)

Table 2: Distribution of cases of ectopic pregnancy by parity

PARITY	FREQUENCY (%)
0	44 (32)
1	25 (18)
2	19 (14)
3	12 (9)
4	16 (11)
5	11 (8)
6	1 (1)
Not Stated	10 (7)
TOTAL	138 (100)

Table 3: Clinical features in patients with ectopic pregnancy

SYMPTOM/SIGN	PERCENTAGE OF CASES
Abdominal pain	93%
Amenorrhea	84%
Abnormal Vaginal Bleeding	62%
Collapse / Syncope	15%
Abdominal Tenderness	91%
Pallor	74%
Positive Cervical Excitation Tenderness	41%
Features of Stock	31%

Table 4: Duration of amenorrhea in patients with ectopic pregnancy

DURATION OF AMENORRHEA IN WEEKS	FREQUENCY (%)
≤ 4	22 (16)
5	11 (8)
6	9 (6.5)
7	12 (9)
8	37 (27)
9	3 (2)
10	7 (5)
11	3 (2)
12	15 (11)
13-20	9 (6.5)
Not Stated	10 (7)
TOTAL	138 (100)

Table 5: Mode of treatment in cases of ectopic pregnancy

TREATMENT	FREQUENCY (%)
Unilateral Salpingo	84 (61)
Unilateral Salpingo-oophorectomy	28 (20)
Unilateral Cornual Resection	3 (2)
Unilateral Oophorectomy	2 (1.5)
Other Surgical Procedures (includes combinations of one of the above with tubal ligation, myomectomy or appendicectomy)	20 (14.5)
Methotrexate (50mg intramuscular x 2doses)	1 (1)
TOTAL	138 (100)