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Original Research Article

Current pattern of presentation and approach to the management of ectopic gestation in the state specialist hospital Ondo: a two-year review

Adedokun I. Adegoke*

Department of Obstetrics and Gynaecology, State Specialist Hospital, Ondo, Ondo State, Nigeria

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***Correspondence:**
Dr. Adedokun I. Adegoke,
E-mail: dradedokun@yahoo.com

ABSTRACT

Background: Ectopic gestation is still the leading cause of pregnancy related death in the first trimester. Not much has changed in the area of management in the developing world due to the pattern of patients' presentation and paucity of laparoscopic facilities. The study aims to assess the current pattern of presentation and approach to the management of ectopic gestation in a secondary health facility in sub-Saharan Africa.
Methods: A retrospective study was carried out to assess the current pattern of patients' presentation and approach to management of ectopic gestation in State Specialist Hospital, Ondo, Nigeria. All the data were retrieved from the case record of patients and analysed using SPSS version 20.
Result: The commonest symptoms patients presented with were abdominal pain, amenorrhoea and vaginal bleeding with figures 63 (96.92%), 47 (72.31%) and 34 (52.31%) respectively. Tubal ectopic gestation was the commonest type found in 60 (92.31%) patients and was more on the right (56.92%). Fifty-nine (90.77%) of the tubal ectopic gestations were ruptured while only one was unruptured. All the patients had exploratory laparotomy. No mortality was recorded during the period under review.
Conclusion: All the patients reviewed had exploratory laparotomy mainly due to the non-availability of laparoscopy in our centre, the nature of presentation and the financial capability of the patients and their relations. These factors still remain the determinants of clinician's choice of patients' management in low resource settings of the world.

Keywords: Ectopic pregnancy, Exploratory laparotomy, Fallopian tubes, Laparoscopy, Ultrasound

INTRODUCTION

Ectopic pregnancy (EP) or extra uterine pregnancy has its root meaning in the Greek word ''ektopos'' meaning out of place.[1] Ectopic pregnancy was first reported by Busiere in 1693 in Paris during an autopsy of an executed prisoner.[2] It refers to the blastocyst implantation outside the uterine cavity with over 95% occurring in the fallopian tube.[3] Other most common implantation sites include ovary (3.2 %), abdominal cavity (1.3 %), cornua of the uterus and the cervix.[4] Ectopic pregnancy is one of the surgical emergencies in gynaecology especially in the tropics where most patients present with the ruptured type.[5] Ectopic pregnancy remains the leading cause of pregnancy related death during the first trimester, where it is responsible for 9-10% of all maternal deaths.[6]

The incidence of ectopic pregnancy has increased over the past three decades.[7] This rising incidence is attributable to the increasing cases of pelvic inflammatory disease and the relative efficacy of modern antibiotics in its treatment. This leaves the affected tube partially blocked as opposed to full blockage that normally occurred before the advent of these drugs.

Another reason for increased incidence is improved ability in detecting ectopic gestation.[8] The incidence in the United States increased from 4.5 per 1000 pregnancies in 1970 to an estimated 19.7 per 1000 pregnancies in 1992. Around 10,000 ectopic pregnancies are diagnosed annually in the UK.[9] In Nigeria, incidence of ectopic gestation ranges from 10.5 per 1000 deliveries in Ife to 43.8 per 1000 deliveries in Lagos.[10,11]

Several risk factors for ectopic pregnancy have been identified including a history of pelvic inflammatory disease, smoking at the time of conception, previous ectopic pregnancy, previous pelvic surgery and induction of ovulation. Some types of contraception, such as progestogen only contraception and the intrauterine contraceptive device are associated with an increased incidence of ectopic pregnancy when there is contraceptive failure, without necessarily increasing the absolute risk of ectopic pregnancy.[12] Ectopic pregnancy is more common in women attending infertility clinics even in the absence of tubal disease. In addition, the use of assisted reproductive technology (ART) increases the rate of ectopic pregnancy.[13]

Common clinical findings in patients with ectopic pregnancy include amenorrhea of variable duration, abdominal pain, vaginal spotting, abdominal tenderness, adnexal tenderness and mass. Others may present with classic picture of acute abdomen with hypovolaemic shock. The aforementioned features are usually seen in ruptured extra-uterine gestation and it is the most common pattern in the developing world. In contrast, the dominant presentation in developed countries is that of unruptured ectopic pregnancy which is often diagnosed early in the course of early evaluation of amenorrhea at the early gestation assessment clinic.[14]

Traditionally, culdocentesis is done in the ruptured variety but recently detection of ectopic pregnancy is determined through serum human chorionic gonadotropin (b-hCG) levels and transvaginal ultrasonography techniques. Other methods are laparoscopy, urinary hCGRP/i-hCG ratio, progesterone, serum vascular endothelial growth factor, serum creatinine kinase, disintegrin and metalloprotease-12 (ADAM-12) measurements.[15,16]

The main modalities of treatment employed are expectant, medical and surgical. Surgical treatment may be laparoscopic surgery or laparotomy and may also be conservative or radical. Determinants of treatment options include site and state of the gestational sac (ruptured or unruptured), size of the unruptured sac, serum beta HCG levels, degree of haemodynamic decompensation, expertise and availability of facilities.

Expectant management has a role when b-hCG <200 mIU/ml and further in the decline phase based on the recent guideline published by the American College of Obstetricians and Gynecologists.

Knowing that tubal rupture has been reported with low or declining b-hCG levels, expectant management should only be considered when the transvaginal scan remains non-diagnostic and b-hCG levels continue to decline. Fortunately, most cases of ectopic gestation resolve spontaneously when b-hCG level dips to 15 mIU/ml.[17,18] Good prognostic signs for successful expectant management also include absent or minimal clinical symptoms with haemodynamic stability, low initial serum b-hCG and ultrasonic evidence of ectopic resolution.[19] Medical management is similarly considered in patients with haemodynamic stability, ability and willingness to comply with monitoring after treatment, pre-treatment serum b-hCG concentration less than 5000 mIU/ml, absence of ultrasound evidence of fetal cardiac activity. The most commonly used drug is Methotrexate which has a success rate of up to 94% in properly selected patients.[20]

Laparoscopic treatment compared to laparotomy is associated with lower cost, shorter hospital stays, less-operative time, less blood loss, faster recovery and less need for analgesia.[21] Tube-sparing salpingostomy is preferred, particularly for women who wish to have another pregnancy. Salpingectomy may be necessary for women with uncontrolled bleeding, recurrent ectopic pregnancy in the same tube, a severely damaged tube or a tubal gestational sac greater than 5 cm in diameter.[20] Laparotomy remains the commonest surgical approach in the management of ectopic pregnancy particularly in sub-Saharan Africa where operative laparoscopy is still developing.[22,23]

METHODS

Study design

A retrospective review of patients with ectopic gestation at the State Specialist Hospital between January 4th, 2015 and December 29th, 2016 was carried out. The operating theatre register and gynaecology ward admission book were used to identify patients with ectopic gestation during the period under review.

Data collection

A list of the identified patients from the theatre register and the gynaecology ward admission book was sent to the records unit where their case files were retrieved. Eighty-four patients were identified during the study period and operated for ectopic pregnancy while 65 case files were retrieved (approximately 77.4%). Data on patients' demographics, presentation pattern, predisposing factors, treatment modality and outcome of procedures were extracted.

Data analysis

Data analysis was done with Statistical Package for Social Sciences version 20. Simple frequencies and

percentages were obtained. Ectopic pregnancy rates were calculated per 1,000 deliveries.

RESULTS

The total number of deliveries during the study period was 4,308. Seventy-four cases of ectopic gestation were identified, 65 case notes were retrieved. The institutional ectopic gestation rate during the study period was 17.2 per 1000 deliveries. The age range of patients was 14-40 years (mean 29.17 years) with age range 25-34 years having the highest frequency. About 6% of the patients were teenagers. The highest level of education for most patients was secondary (46.15%). The commonest symptoms patients presented with were abdominal pain, amenorrhea and vaginal bleeding with figures 63 (96.92%), 47 (72.31%) and 34 (52.31%) respectively. Thirteen (20%) patients were dizzy at presentation while 16 (24.62%) experienced fainting attack. Abdominal tenderness was by far the commonest clinical sign as it was elicited in 64 (98.46%) patients. Other clinical signs of note were pallor, cervical excitation tenderness, adnexal tenderness and bogginess of pouch of Douglas seen in 42 (64.62%), 58 (89.23%), 50 (76.92%) and 30 (46.15%) patients respectively (Table 1).

Table 1: Symptoms and signs of ectopic gestation.

Symptom/sign	Number	Percentage (%)
Abdominal pain	63	96.92
Amenorrhoea	47	72.31
Vaginal bleeding	34	52.31
Dizziness	13	20.00
Fainting attack	16	24.62
Abdominal tenderness	64	98.46
Pallor	42	64.62
Cervical excitation tenderness	58	89.23
Adnexal tenderness	50	76.92
Bogginess of pouch of douglas	30	46.15

Previous history of pelvic inflammatory disease was identified in 52.31% of the patients. Other important risk factors were previous abortion and age greater or equal to 35 years found in 25 (38.46%) and 15 (23.08%) of patients respectively. Six (9.23%) patients had previous pelvic/abdominal surgery. History of contraceptive use, infertility and ectopic gestation were reported by 7.69%, 3.08% and 1.54% patients respectively (Table 2). Most (76.92%) patients had packed cell volume less than 30%. Serum pregnancy test was found to be positive in all the patients.

Tubal ectopic gestation was the commonest type found in 60 (92.31%) patients and was more on the right (56.92%). Fifty-nine (90.77%) of the tubal ectopic gestations were ruptured while only one was unruptured. Four (6.15%) patients had ovarian ectopic while abdominal pregnancy was discovered in only one patient (Table 3).

Table 2: Risk factors for ectopic gestation.

Risk factor	Number	Percentage (%)
Age ≥35 years	15	23.08
Multiple sexual partner	1	1.54
Previous abortion	25	38.46
Previous pelvic inflammatory disease	34	52.31
Previous abdominal/pelvic surgery	6	9.23
History of infertility	2	3.08
Contraceptive use	5	7.69
Previous ectopic	1	1.54

Table 3: Site of ectopic gestation.

Site	Number	Percentage (%)
Tubal	60	92.31
Ovarian	4	6.15
Abdominal	1	1.54

All the patients had exploratory laparotomy due to non-availability of laparoscopy in our centre. Most patients (59 that is, 90.77%) subsequently had unilateral salpingectomy. Others had oophorectomy/excision of sac from the ovary, linear salpingostomy and excision of gestational sac from the abdominal cavity (Table 4). Fifty (76.92%) patients were transfused with blood and no mortality was recorded during the period under review.

Table 4: Type of surgery.

Type of surgery	Number	Percentage (%)
Salpingectomy (unilateral)	59	90.77
Oophorectomy/excision of gestation from the ovary	4	6.15
Excision of gestation from the abdominal cavity	1	1.54
Linear salpingostomy	1	1.54

DISCUSSION

Ectopic pregnancy is a surgical emergency and remains a major cause of maternal morbidity and mortality.[14,24] The incidence of ectopic pregnancy in the developed countries is between 10/1000 deliveries and 20/1000 deliveries. The incidences in the United Kingdom and Australia were put at 11.1/1000 and 16.2/1000 deliveries respectively.[25,26] Higher figures have been observed in developing countries. A study done in Lagos, Nigeria gave an incidence of 43.8/1000 deliveries.[11] The incidence found in this review was 17.1/1000 deliveries

which is similar to the incidence of 10.1/1000 deliveries found in Ife, Nigeria.

Advanced maternal age is a risk factor for ectopic gestation, maternal age of 35 years and above is believed to be significant.[14] In the present study, 23.1% of the patients were 35 years and above, the age group with the highest frequency (53.9%) was 25-34 years and only 9.2% of the patients were below 20 years of age. Therefore, the present study is in keeping with the earlier finding.

Some of the reasons advanced for increased maternal age being a risk factor for ectopic gestation include age-associated impaired ovum transport, chromosomal anomalies, with a resultant implantation in the tubes.[27] Most patients in the present study presented with abdominal pain and vaginal bleeding which are the commonest symptoms found in previous studies.[28,29] The pain in ectopic gestation is mostly due to intraperitoneal haemorrhage with or without tubal rupture. Cervical excitation tenderness was observed in more than half of the patients and this is similar to what was observed in a study carried out by Jehle et al.[30]

It was observed in this study that 52.31% of patients had history suggestive of pelvic inflammatory disease. This is higher than what was reported in the northern part of the country by Yakasai et al, in which 32% of the patients gave a history of prior treatment of vaginal discharge.[31]

The observed variance may be related to the difference in cultural and social characteristics. Most of the risk factors associated with ectopic pregnancy as found in this study and some other studies such as history of abortion, prior abdominal or pelvic surgery, are related to prior tubal damage. Anaemia was found in more than two-thirds of these patients and this is partly due to high tubal rupture rate (90.77%) among the patients. The high rate of rupture is similar to what was found by other workers in the country and this can be linked to late presentation and low index of suspicion among clinicians.[31]

CONCLUSION

All the patients reviewed had exploratory laparotomy mainly due to the non-availability of laparoscopy in our centre, the nature of presentation and the financial capability of the patients and their relations. These factors still remain the determinants of clinician's choice of patients' management in low resource settings of the world.

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