

First Trimester Tubal Ectopic Pregnancy

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ABSTRACT

About 1% of pregnancies is in an ectopic location with implantation not occurring inside of the womb, and of these 98% occurs in the Fallopian tubes. However, implantation can also occur in the cervix, ovaries, and abdomen. Ultrasound scan was performed on a 19-year-old nulliparous female at the Ultrasound Unit of Crystal Specialist Hospital, Lagos, Nigeria. The patient had complained of abdominal pain and vaginal bleeding. Transabdominal scan revealed an empty uterus and extra-uterine embryo implanted in the right adnexa. The fetal pole had a crown-rump-length (CRL) of 13 mm and the gestational age (GA) was 7 weeks 4 days; expected date of delivery (EDD) was 04/03/14. Ectopic pregnancies are usually associated with maternal morbidity and mortality resulting from complications. This case highlights the importance of ultrasound sonography in obstetrics and its adjunct purpose in the preoperative diagnosis and management of ectopic pregnancy.

Key words: Ectopic pregnancy; extra-uterine; fallopian tube; first trimester; obstetrics; ultrasound scan; ultrasound

Introduction

An ectopic pregnancy, or eccyesis, is described as a complication of pregnancy in which the embryo implants outside the uterine cavity.^[1] About 1% of pregnancies is in an ectopic location with implantation not occurring inside of the womb, and of these 98% occurs in the Fallopian tubes. However, implantation can also occur in the cervix, ovaries, and abdomen. The vast majority of ectopic pregnancies implant in the Fallopian tube.^[2,3]

Reports show that pregnancies can grow in the fimbrial end (5% of all ectopic pregnancies), the ampullary section (80%), the isthmus (12%), and the cornual and interstitial parts of the tube (2%).^[4,5] Mortality of a tubal pregnancy at the isthmus or intrauterine portion of the tube (interstitial pregnancy) is higher as there is increased vascularity that may result more likely in sudden major internal hemorrhage. Tubal ectopic pregnancy has been hypothesised to be caused by a

combination of retention of the embryo within the fallopian tube due to impaired embryo-tubal transport and alterations in the tubal environment allowing early implantation to occur.^[6]

Ectopic pregnancies are difficult to diagnose; misdiagnoses could have a fatal outcome. Ten percent of all ectopic pregnancies at Ile-Ife, Nigeria over a 15-year period (1985-1999) were misdiagnosed initially at presentation.^[7] There were five maternal deaths among the 38 misdiagnosed cases compared to two maternal deaths among the 342 initially correctly diagnosed cases.^[7] This paper reports an unusual case of early diagnosis of tubal ectopic pregnancy through transabdominal ultrasound scan.

Case Report

Ultrasound scan was performed on a 19-year-old nulliparous female patient who complained of amenorrhea, abdominal pain, bleeding, and cramps along with slightly distended lower abdomen. Siemens Ultrasound machine (Sonoline 450 SL, made in Germany) with a 3.5 MHz probe was used. The patient admitted to a family history of ectopic pregnancy. The present conception was her first. A transabdominal scan was performed for a panoramic view of abdominal and pelvic structures.

Longitudinal scan revealed the empty uterus in an anteverted position posterior to the urinary bladder, which was

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recognized as a pear-shaped structure. The uterus measured 68 mm by 50 mm. In the extreme lateral right adnexa (tubo-ovarian area), and indenting the posterior wall of the bladder was a viable fetal pole in an extrauterine gestational sac of diameter 20 mm [Figure 1]. The crown-rump-length (CRL) was 13 mm and gestational age (GA) was 7 weeks 4 days; expected date of delivery (EDD) was 04/03/14. There was no free fluid in the recto-uterine pouch.

Discussion

Ectopic pregnancies are among the leading cause of mortality in women, especially in the Sub-Saharan region,^[8,9] a case fatality of 37 per 1000 has been reported for Lagos, Nigeria.^[10] They are also usually associated with life-threatening complications that necessitate the importance of early diagnosis. Detection of an adnexal mass separate from the ovaries is diagnostic of ectopic pregnancy.^[11] Ectopic pregnancies are often diagnosed by high resolution vaginal ultrasonography^[12] or vaginal ultrasound combined with a discriminatory serum level of beta subunit human chorionic gonadotropin (hCG) of 1000 IU/L.^[11] The absence of intrauterine sac with hCG levels above 6500 IU/L secondary to complaints of abdominal pain, second degree amenorrhea and irregular vaginal bleeding has been cited to be indicative of ectopic pregnancy.^[13,14]

The use of this threshold in combination with sonographic detection of an adnexal mass was diagnostic of ectopic pregnancy with a sensitivity of 97%, a specificity of 99%, a positive predictive value of 98% and a negative predictive value of 98%.^[11]

Ectopic pregnancy was visualized as an extrauterine gestational sac with a fetal pole in a patient that presented with vaginal bleeding, abdominal cramps, and pain. Typically, the ectocyesis was detected in the uterine tube, which is the site of location of most ectopic pregnancies.^[2] The preoperative

detection of tubal pregnancy in this report is rare and underscores the diagnostic benefit of ultrasonography in obstetrics. Though transvaginal sonography and hCG are the routine tools reported in literature for the diagnosis of ectopic pregnancy; and some authors have advocated the sole use of endovaginal techniques for the diagnosis of ectopic pregnancy,^[15] the use of abdominal scan proved very accurate in this case in revealing the ectopic pregnancy in the early stage. This case further highlights the relevance of transabdominal scan, considering the fact that negative endovaginal examinations had been reported in patients with obvious ectopic pregnancies.^[15]

The gestational sac diameter (GSD), as opposed to the CRL of the fetal pole, does not appear to reflect the actual GA because it is still very small. This might be due to the constant pressure from the urinary bladder and adjacent anatomical structures like the colon and small intestines.

Ectopic pregnancy is currently deemed to be a major clinical problem and the rate has increased with stimulated ovulation, *in vitro* fertilization, embryo transfer, and microsurgical techniques. Late diagnosis and misdiagnosis can result in maternal morbidity, mortality as well as high hospital cost. The use of endovaginal examinations combined with transabdominal scans would be helpful in the detection of ectopic pregnancies. For this reason, we strongly advocate the use of ultrasound sonography in the management of early pregnancy.

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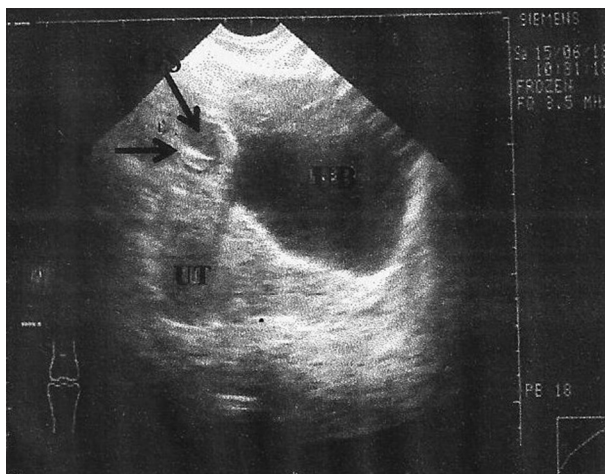


Figure 1: Longitudinal pelvic scan of an ectopic pregnancy in a young adult female. GS = gestational sac; FP = fetal pole; UT= uterus; UB= urinary bladder

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