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Role of usg in Ectopics: Recent Update

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Abstract

This study is undertaken to emphasize the role of ultrasonography in the diagnosis of ectopic pregnancy and clinical analysis of the same in a tertiary care referral hospital.

Methodology

One hundred patients with provisional diagnosis of ectopic pregnancy were studied. Physical examination, urine pregnancy test, transabdominal scan using 5 MHz transducer or transvaginal ultrasonography of 7 MHz was done. The diagnosis of ectopic pregnancy was confirmed by direct observation by laparotomy or laparoscopy (which was taken as gold standard).

Results

The study showed ectopic pregnancy was most common in gravida 2 and in age group 26–30 years with most of them having married life <10 years. One or more risk factors were found in 66 % of cases. 54 % of cases presented with acute symptoms, 14 % of cases in shock. Among clinical presentation pain abdomen, history of amenorrhea, bleeding per vaginum, abdominal tenderness, and cervical motion tenderness was most common. In ultrasonography, complex mass in adnexa was present in 60 % of cases and hemoperitoneum in 50 %. 96 % of cases were tubal pregnancy with most of them tubal rupture. In 98 % of cases, radical surgery was done. Salpingectomy was the most common surgery done (90 %). There was no negative laparotomy in this study. There was no maternal mortality in this series.

Conclusions

In all the 100 cases of ectopic pregnancy studied, the ultrasonography provided definitive diagnosis resulting in 100 % sensitivity and 100 % specificity, predictive value of positive test being 100 %. Ultrasonography done in earlier weeks of gestation had sensitivity of 96 % and false negative 4 %.

Keywords: Ectopic pregnancy, Laparotomy, Laparoscopy, Ultrasonography

Introduction

The implantation of the blastocyst outside the endometrial lining of uterus is called as "Ectopic Pregnancy." The incidence varies from 1 in 300 to 1 in 150 deliveries. Although overall incidence of ectopic pregnancy has increased, the risk of death from ectopic pregnancy has declined by 90 %.

Ectopic pregnancy is often proclaimed as "the great masquerader," as the diagnosis is complicated by a wide spectrum of clinical presentation varying from asymptomatic cases to hemoperitoneum and shock. The classical triad of amenorrhoea, abdominal pain, and vaginal bleeding is seen in only 50 % of patients with ectopic pregnancy. A more common

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complication is the poor reproductive potential after an ectopic pregnancy. Physcians should maintain a high index of suspicion for ectopic pregnancy and should be cognizant of the importance of early diagnosis and early intervention. Hence, early diagnosis and treatment decrease both morbidity and mortality related to ectopic pregnancy.

Women who present with pain and bleeding in the first trimester, the differential diagnosis include normal early pregnancy, abortion, molar pregnancy, and ectopic pregnancy. The exact diagnosis can be made out with ultrasonography [1]. Women with damaged fallopian tubes, pelvic infection, smoking, assisted reproductive techniques are at higher risk for ectopic pregnancy. Even many women can develop an ectopic without any of the risk factors [2]. Increasingly, the ectopic pregnancy is diagnosed before the appearance of symptoms and signs due to wider availability of transvaginal sonography and serum β hcg estimation [3].

Pelvic ultrasound has revolutionized the diagnostic process of ectopic pregnancy and is now considered the gold standard for the diagnosis of ectopic pregnancy [4]. Transvaginal ultrasonography, in particular, may identify masses in the adnexa as small as 10 mm in diameter and can provide more detail about the character of the mass. At the same time, evaluate the contents of the endometrial cavity and assessment for the presence of free peritoneal fluid. In adnexa, a live embryo seen in up to a quarter of patients, gestational sac in 70 %, as complex mass in 90 % of patients with an ectopic pregnancy. Free intraperitoneal fluid is reported in 60 % of cases in transvaginal sonography. Echogenic or particulate fluid correlates with hemoperitoneum [5]. Multiple parameters have sensitivity and specificity of 100 % in the diagnosis [6].

Methods

The present study was carried out in patients with ectopic pregnancy attending hospital from October 2020 to September 2021.

Inclusion criteria: all patients suspected of having ectopic pregnancy by history and clinical examination and ultrasonography were included.

Exclusion criteria: intrauterine gestation and Ectopic pregnancy managed by expectant or medical line of treatment were excluded.

One hundred patients with provisional diagnosis of ectopic pregnancy were studied. Clinical examination, urine pregnancy test, transabdominal or transvaginal ultrasonography was done. The diagnosis of ectopic pregnancy was confirmed by direct observation by laparotomy/laparoscopy, which was taken as gold standard. The different surgical methods of treatment were noted and post-operative follow-up was done.

Results

During the study period from October 2020 to September 2021, 100 patients suspected of ectopic pregnancy were studied. Peak age of incidence was 26–30 years (44%), followed by patients in age group of 21–25 (28%). 16% patients were above 30 years and 12% below 22 years. 2nd gravida were the most sufferers (38%). Primi and 3rd gravida were 24 and 28%, respectively. Least incidence was found in 4th and above (10%) of the cases had married life <10 years.

90% of cases were referred with 58% belonging to lower socioeconomic status. One or more risk factors were identified in 58 patients (66%). The most common cause being post tubectomy. In post tubal sterilization procedures, most of them were following abdominal tubectomy (14 cases). In this study, all cases of ectopic pregnancy were following 3 years of sterilization. 4 cases were with consecutive ectopic pregnancy. Among 6 cases following IUCD, 4 had previous LSCS. In infertile patients, secondary infertility was common (14 cases) compared to primary infertility .

Most of the cases in our study presented with acute symptoms (54 %) and 30 of them had hemoperitoneum more than 1000 ml. 14 cases presented with shock. The most common presentation being pain abdomen followed by amenorrhea and bleeding per vaginum. On examination, 48 % cases presented with pallor and 14 % of cases with shock. Most common clinical finding being abdominal tenderness and cervical motion tenderness . 62 % of the cases had positive culdocentesis suggesting blood in the pelvic cavity. All the 100 cases had urine pregnancy test positive.

Most common ultrasonography finding was complex mass in the adnexa in 30 % of the cases; the complex adnexal mass was present with hemoperitoneum. In 4 cases, the adnexal mass was on the opposite side as confirmed by laparotomy.

In all the 100 cases studied, ultrasonography

provided the definitive diagnosis resulting in 100 % sensitivity and specificity. Predictive value of positive test being 100%.

In 4 cases, the previous scan done 15 days prior had shown complete abortion with no evidence of extrauterine pregnancy. As the symptoms persisted, the repeat scan showed hemoperitoneum with adnexal mass. Hence, the earlier scan had sensitivity of 96%, specificity 100%, and false negative being 4%. 96% were tubal pregnancy. Right being the most common site. Among tubal pregnancies, 48% were tubal rupture .

In 98% of cases, radical surgery was done. Salpingo ophorectomy was done in 6 cases. 2 cases were of ovarian pregnancy. In 14% of cases, salpingectomy was done in opposite tube.

Discussion

Incidence of ectopic pregnancy in this study was 1 in 143 which is comparable to other Indian studies of Arora et al. (1 in 160) [9] and Arup et al. (1 in 161) [3]. The peak age of incidence was 26–30 years and majority was gravid 2 or less; it is consistent with study by Arup et al. 66% of cases had one or more risk factors similar to study by Arup et al. In their study, most common was tubal pregnancy, and salpingectomy was the treatment in majority (81.9%) which is comparable with our study (90%). Study by Adhikari et al. [10] shows similar findings with our study. Most common ultrasonography finding being complex adnexal mass (61%), with our study showing 60%. But in our study, half of these cases had echogenic fluid in the cul de sac. Study done by Naseem et al. [6] showed sensitivity and specificity of 100% in the diagnosis of ectopic pregnancy by ultrasonography.

Conclusions

Ectopic pregnancy is one of the obstetric emergencies with long-term morbidity and mortality. Hence, high degree of suspicion, early diagnosis, and treatment improves the future reproductive potential. Ultrasonography helps in early diagnosis. Hence, all early pregnancies should undergo Ultrasonography for viability and site of pregnancy. It can be considered as the gold standard in the diagnosis of ectopic pregnancy. It serves as single most, non-invasive, diagnostic test. It can be even used as single alone test.

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Conflict of Interest – Nil

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