

## TRANS-ABDOMINAL ULTRASONOGRAPHY IN SUSPECTED ECTOPIC PREGNANCY

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### SUMMARY

Out of 50 patients referred to radiology department with clinical suspicion of ectopic pregnancy, 10 cases of ectopic pregnancy were diagnosed on trans-abdominal Ultrasonography and one of ovarian pregnancy at operation. The remaining 39 cases were not pregnant (8 cases), intrauterine pregnancy (19 cases), P.I.D. (6 cases), Polycystic ovaries (2 cases) and threatened abortion (4 cases).

### INTRODUCTION

Ectopic pregnancy is a serious condition and it accounts for 10% of maternal deaths and recent reports have emphasized that its incidence is increasing (Flett, et al., 1950-85; Cole 1988; Newton 1988, Chambers et al., 1990). Clinical diagnosis is correct in less than 50% of cases (Weckstein 1985). as the symptoms and signs are similar to those of many other gynaecological disorders the clinical suspicion will be high in any woman of child bearing age who presents with amenorrhea, lower abdominal pain and abnormal vaginal bleeding. Ectopic pregnancy is suspected by clinicians 10 times more than it occurs and radiology departments providing an ultrasound service for gynaecological patients will receive many referrals for a suspected ectopic pregnancy (Kadar, et al, 1981).

The pseudogestation sac of an ectopic pregnancy may be mistaken for the true gestational sac and lead to erroneous diagnosis of intrauterine pregnancy (Marks et al., 1979). Flett et al. (1988) described the double decidual sign of true gestational sac and stressed that the true gestational sacs are eccentrically placed in the uterus, whereas the pseudogestational sac is central because it represents fluid in the cavity.

The value of adnexal findings in the diagnosis of ectopic pregnancy has been questioned, since the appearances are often non-specific. The presence of fluid in the cul-de-sac may indicate a hemoperitoneum and has been used to raise the index of suspicion for ectopic gestation. If large hemoperitoneum is present, fluid can also be visualized in the flanks. Although fluid collections are hypoechoic clotted blood in the cul-de-sac can produce hyperechoic image and this should raise the index of suspicion of hemoperitoneum (Newton, 1988, Kadar 1981).

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### MATERIAL AND METHODS

Fifty patients of age ranging from 18-41 years were referred to Radiology department of I.G. Medical College, Shimla for sonographic evaluation for clinical suspicion of ectopic pregnancy during the years 1987-1990. Majority of patients had abdominal pain (95%) and amenorrhea/vaginal bleeding/tenderness in flanks (75%).

Transabdominal sonography was performed with 3.5 MHz linear/sector transducers. The pelvis was scanned in longitudinal, transverse and oblique planes with a standard full bladder technique.

### RESULTS

Of the 50 patients, 20 (40%) had normal gestational sac in the uterus with clear adnexa while 8 (16%) had both empty uterus and clear adnexa.

Eight (16%) cases had clear demonstration of ectopic pregnancy. [right fallopian tube (4 cases), left fallopian tube (2 cases), ruptured ectopic in relation with right fallopian tube (1 case) left ovarian ectopic (1 case)]. In all these cases of ectopic pregnancy, there was demonstration of gestational sac outside the uterus in addition to indirect signs of mild to moderate enlargement of uterus and fluid in cul-de-sac. In one of these cases even cardiac pulsation were demonstrated in tubal pregnancy (Fig. 1).

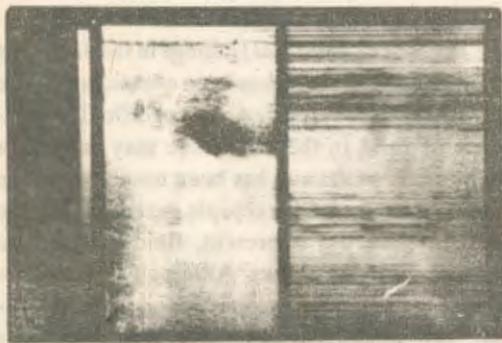


Fig. 1 : "Ultrasonography showing gestational sac outside uterus with cardiac tracing and fluid in Cul-de-sac".

Eight (16%) had complex masses in relation with right tubo-ovarian area of which 5 had thickened adnexae with mixed echo-pattern, more like PID, while 3 cases had hypoechoic areas with additional findings of mild to moderate enlargement of uterus/fluid in cul-de-sac favouring ectopic pregnancy.

Of the remaining 6 cases, 2 had cystic ovaries on left side while 4 were of threatened abortion.

All 8 cases of ectopic pregnancy on USG, were confirmed at surgery. Of 8 complex echogenic masses, 6 were diagnosed as PID and 2 as chronic ectopic pregnancy at surgery.

One out of 20 cases having normal gestational sac in uterus actually turned out as an ovarian ectopic at surgery.

### DISCUSSION

Sonographic examination of the pelvis is widely used to evaluate clinically stable patients suspected of having ectopic pregnancy, but it is well recognised that sonography often is more helpful in excluding an ectopic pregnancy by identifying normal intrauterine gestation than in imaging the ectopic foetus itself.

In the present series, ectopic pregnancy was present in 11 (22%) cases of those in whom it is suspected, it has been documented by various studies that ectopic pregnancy is suspected 10 times more often than it occurs and its incidence is also increasing. Many of those suspected of ectopic pregnancy were not even pregnant. In 8 cases we were able to demonstrate gestational sac outside the uterus in relation to fallopian tubes/ovarian area. Out of 8 cases, 7 cases had tubal pregnancy and it has been reported as high as 95% by Clark (1975). Kadar et al (1986) observed that the sonographer must differentiate between the poorly defined hypoechoic areas and gestation/pseudogestation sac which are surrounded by a characteristic echogenic rim and stressed that hypoechoic areas have been reported to occur more often than pseudogestational sacs in ectopic pregnancy. Schoenbaum et al (1978) reported that though a mass, uterine en-

largement or displacement and fluid in cul-de-sac can be observed in pelvic inflammation, endometriosis, threatened/missed abortion, torsion and rupture of ovarian cysts, a suggestive clinical picture coupled with the absence of sonographic intrauterine pregnancy, strongly suggests ectopic pregnancy.

Our 8 patients had complex masses out of which five had thickened adnexa with mixed echopattern suggestive of PID, while 3 patients had hypoechoic areas with moderate enlargement of uterus and fluid in cul-de-sac suggestive of ectopic pregnancy. Various studies have pointed out that sonographic appearances of pelvic masses are non-specific and such cystic or complex pelvic masses have been reported to be present in sonogram in over 90% of chronic ectopic/PID.

The appearance of foetal heart activity im-

aged outside the uterus is a very rare diagnostic finding of an ectopic pregnancy. It was demonstrated in one of our cases at 7 week gestation. In one case, we missed ovarian ectopic pregnancy on USG.

REFERENCES

1. Chambers S. SE., Muir B. B., Haddad N. G. : *Brit. J. of Radiology*. 63 : 246, 1990.
2. Clark J. F., Jones S. A. : *J. Reprod. Med.* 14 : 30, 1975.
3. Cole S., Clarke J. A. : *Brit. Med. J.* 297 : 1046, 1988.
4. Flett. G. M. M., Uraquhart D. R., Frasher C., Terry P. B., Fleming J. C. ; *Brit. J. of Obstet. & Gynec.* 95 : 742, 1988.
5. Kadar N., Caldwell B. V., Romero R. : *Obstet and Gynec.* 58 : 156, 1981.
6. Marks W. N., Filly R. A., Callen P. W., Laing F. C. : *Radiology*, 133 : 451, 1979.
7. Newton J. : *Brit. Med. J.* 297 : 633, 1988.
8. Schoenbaum S., Rosendorf L., Kappleman N., Rowan T. : *Radiology* 127 : 757, 1978.
9. Weckstein L. N. : *Obstet. and Gynec. Survey* : 40, 259, 1985.