

ROLE OF TRANSVAGINAL ULTRASONOGRAPHY IN EVALUATION OF SUSPECTED ECTOPIC PREGNANCY

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SUMMARY

23 patients with suspected ectopic pregnancy on the basis of clinical presentation were subjected to transvaginal ultrasonography examination. 19 patients had ectopic pregnancy confirmed operatively within 48 hours of the ultrasound examination. A complex adnexal mass highly suggestive of an ectopic pregnancy was found in 7 patients (31%). A distinct gestational sac was apparent in 12 patients (52%). Fluid in the Pouch of Douglas was noted in 11 (47%) patients. Transvaginal ultrasonography was found to be highly accurate in identifying an ectopic gestation.

INTRODUCTION

The management of ectopic pregnancy has witnessed a change over the years, with a dramatic shift on the emphasis. At one time the concerns were how to make a diagnosis and how to keep the patient alive. The present emphasis is on an early and accurate diagnosis with minimally invasive techniques and treatment aimed at the preservation of fertility. Ultrasonography is one such noninvasive tech-

nique often used to evaluate patients suspected to have an ectopic pregnancy. The present study tries to evaluate the role of transvaginal ultrasound in the diagnosis of ectopic pregnancy.

MATERIALS AND METHODS

The study was carried out at the KEM hospital over a period of one year from January 1992 to December 1992. 23 patients referred to this hospital and found to have clinical features of suspected ectopic pregnancy were subjected to a transvaginal ultrasonography in addition

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to investigations such as colpopuncture and urine pregnancy tests. A laparoscopy was also performed in 4 cases. The patients in this study were seen in the out patients department or in the receiving room during emergency hours.

DIAGNOSIS

The mean age of the patients was between 15-40 years and parity between zero and 4.

Eight patients (34.8%) gave a significant past history viz., use of IUCD, PID, infertility, appendicectomy, tubal ligation and previous tubal surgery (Table I).

Most of these patients presented with a short period of amenorrhoea or irregular menstruation followed by symptoms like lower abdominal pain or bleeding per vaginum (Table II).

The following investigations were done in patients clinically suspected to have ectopic pregnancy.

1. Urine Pregnancy Test :

Sensitivity 20 MIU/ML

Results are summarised in Table III.

2. Colpopuncture :

This was done in 14/23 patients.

Results are summarised in Table IV.

Table I
Past History

Past History	No.	%
IUCD use	1	4.35
PID	2	8.7
Infertility	3	13.05
Tubal Ligation	1	4.35
Tubal Surgery	1	4.35

Table II
Clinical Features

Symptoms/Sign	No.	%
Menstrual irregularity	20/23	86
Abdominal pain	19/23	82.5
Vaginal bleeding	21/23	91.2
Adnexal mass	8/23	33.3
Perabdomen tenderness	16/23	69.56
Forniceal tenderness	11/23	47
Cervical tenderness	10/23	43.47

3. Transvaginal ultrasonography was done in all patients in this study.

The findings suggestive of ectopic pregnancy were -

- a) A gestational sac with a fetal pole with or without cardiac activity in the adnexal region with no evidence of an intrauterine gestational sac.
- b) free fluid in the pouch of Douglas.
- c) A mass with mixed echogenic areas in the adnexal region separate from the recognizable ovary.
- d) An empty sac like structure surrounded by a thick ring of echoes in

Table III
Results of urine pregnancy test

	Confirmed ectopic	No evidence of ectopic
Pregnancy test Positive	18	0
Pregnancy test Negative	1	4

Table IV
Results of colpopuncture

	Confirmed ectopic	No evidence of ectopic
Colpopuncture Positive	9	0
Colpopuncture Negative	3	2

False Negative rate was 21.4%

the adnexal region.

An endometrial cast of 4-15 mm was a common finding. The findings are summarised in table V.

The results obtained in our series were comparable with those in other series.

DISCUSSION

Ectopic gestation still remains an

elusive diagnosis inspite of advanced in the medical field. Immunological pregnancy test to be performed on urine can be very useful when positive but cannot rule out the diagnosis when negative. The sensitivity of the test is a crucial point. Elisa tests can be as sensitive as 50 MIU/ML but even at this sensitivity false negatives do occur. Clearly the frequency of false negative tests is directly dependent on the sensitivity. We had a false negative rate of 21% in our series.

Ultrasonography has made dramatic changes in our approach to patients with suspected ectopic pregnancy. An endovaginal route is preferred. It does not require a full urinary bladder. A higher frequency scanner can be used, thereby improving the resolution. Haemoperitoneum even though minimal can be easily evaluated. Lastly it is a technique which can be applied to all cases and is totally noninvasive. The only exception

Table V
Ultrasonography findings

No.	Findings	Number	Percentage
I.	Adnexal Mass	19/23	83%
	1. Gestational sac with fetal pole	12/23	52%
	2. Complex adnexal mass separate from ovary	7/23	31%
	3. Fluid in the POD	11/23	47%
II.	Tubo-Ovarian Mass	2/23	8%
III.	Intrauterine Pregnancy	1/23	4%
IV.	Ovarian Cyst.	-	-
V.	Normal Pelvic Scan	1/23	4%

False Negative 0%

Table VI
Sonography findings in patients with ectopic pregnancy

Sonography findings	Sharma et al		Timor Tritch et al		Romero et al		Our series	
	No.	%	No.	%	No.	%	No.	%
Adnexal Mass			50/106	46.7	76/220	34	18	83
1. Gestational sac with fetal pole	8	16					12	52
2. Complex adnexal mass distinguishable from ovary	8	16					7	31
3. Fluid in the POD			16/107	15	29/220	13	11	47
Tubo-ovarian mass							2	8
Intra-uterine pregnancy	24	48	43/107	40.2	74/220	33	1	4
Ovarian Cyst.	2	4						
Normal Scan.	8	16	13/107	-12.2%			1	4
Spontaneous abortion					52/220	23.6		

Table VII

False Negative rate of ultrasonography for the diagnosis of ectopic pregnancy

Author	Year	Route	Fase Negative Rate	Percentage
Decrospigny	1987	Transvaginal	7/36	19
Shapiro and Cullen	1988	Transvagialn	1/22	4.5
Timor Tritch	1989	Transvaginal	0/50	0
Rajan	1991	Transvaginal	2/18	11
Sharma et al	1992	Transabdominal	1/11	9.99
Das et al	1993	Transvaginal	0/13	0
Our series		Transvaginal	0/19	0

being patients clinically unstable or in shock where an exploratory laparotomy is indicated in any case. The possible findings include an empty uterus, fluid in the pouch of Douglas and an adnexal mass. Table VI compares the findings in our series with those reported by others. Though transvaginal sonography is proving much superior a false negative endovaginal scan is still a distinct possibility and has been reported by other authors (Table VII).

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