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ROLE OF USG IN EVALUATION OF FIRST TRMESTER BLEEDING PERVAGINUM IN A RURAL TERTIARY CARE HOSPITAL IN MAHARASHTRA, INDIA: A PROSPECTIVE OBSERVATIONAL STUDY

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ABSTRACT

BACKGROUND: Vaginal bleeding in the first trimester of pregnancy is a common obstetric problem.The common causes of bleeding during first trimester include various types of abortions, ectopic pregnancy & molar pregnancy. Clinical history & pelvic examination are inadequate in assessing the cause & prognosis.

OBJECTIVE of this study is to evaluate the role of USG in the evaluation of patients with first trimester bleeding & to prognosticate & predict the status of abnormal pregnancies.

METHODS: The study was carried out on 50 pregnant women who presented with bleeding per vaginum in first trimester of pregnancy visiting obstetrics & gynaecology department . The patients were included on the basis of clinically suspected first trimester bleeding (< 12 completed weeks). All non-obstetrical causes of vaginal bleeding & those with more than 12 completed weeks of gestation were excluded from the study. All patients referred to the Dept of Radio diagnosis with clinically suspected first trimester bleeding were evaluated with clinical history, clinical examination & ultrasonography.

RESULTS: Of the fifty cases of first trimester bleeding, 26 cases were diagnosed as threatened abortion clinically, out of which only 12 cases were confirmed. USG examination confirmed 12 cases of clinically suspected threatened abortions & aids in correctly diagnosing 8 cases which were missed on clinical examination. 12 cases out of 18 threatened abortions continue to term gestation with a successful outcome of 66%. All cases of threatened abortion (n=18), incomplete abortion (n=10), missed abortion (n=4), ectopic (n=4), inevitable abortion (n=4), blighted ovum (n=2), & HM (n=2), were correctly diagnosed on USG. 48 out of 50 cases were correctly diagnosed on USG compared to 18 out of 50 cases on clinical diagnosis with a disparity of 64%. 4 out of 5 proved ectopic pregnancies were correctly diagnosed both on USG & clinical examination.

CONCLUSION: USG is a non-invasive, non-ionizing, without any proved harmful effects on the developing fetus & easily available method of investigation to assess the patients with first trimester bleeding which is highly accurate in diagnosing the actual causes of bleeding & guides the clinician in choosing the appropriate line of management & prevents mismanagement of the cases. In the present study, 48 out of 50 cases were correctly diagnosed on USG compared to 18 out of 50 cases on clinical diagnosis with a disparity of 64%.

KEYWORDS : First Trimester Bleeding, Usg Examination, Clinical Examination

INTRODUCTION:

Nearly (27 to 30%) twenty seven to thirty percent of all pregnant women in their first trimester complain of bleeding. In these women who present with bleeding per vagina, during their first trimester several diagnostic possibilities can be considered. By mere clinical examination & also history, definitive diagnosis is usually impossible.

The three major causes of bleeding in first trimester are abortion, ectopic pregnancy & molar pregnancy. USG helps in assessing the type of abortion.

Early diagnosis & better management including post evacuation follow up of molar & ectopic pregnancy.

MATERIALS & METHODS:

The main sources of data for this study were 50 cases of pregnant women who presented with bleeding per vaginum during the first trimester between MAY 2018 to JUNE 2019 in the department of obstetrics & gynaecology at Shri Vasant Rao Naik Govt Medical College, Yavatmal,M.S. All patients referred to the Dept of Radio diagnosis with clinically suspected first trimester bleeding were evaluated with clinical history, clinical examination & ultrasonography as per st&ard proforma.This study was approved by the ethical committee of the institution.Relevant images were recorded.

INCLUSION CRITERIA:

All patients with clinically suspected first trimester bleeding (< 12 completed weeks)

EXCLUSION CRITERIA:

All non-obstetrical causes of vaginal bleeding.

All patients with more than 12 completed weeks of gestation.

OBSERVATION & RESULTS:

Table 1: showing findings of USG examination

USG examination	Number (n=50)	%
1.G sac	28	56.0
2.Foetal pole	21	42.0
3.Cardiac activity	18	36.0
4.Yolk sac	12	24.0
5.Subchorionic bleed	7	14.0
6.Placenta	6	12.0
7.Less Liquor	3	6.0

On USG examination, 28 cases (56%) out of 50 showed Gestational sac out of which 18 cases were of threatened abortion. Out of 21 cases in which Fetal node was visualized, 18 cases showed fetal cardiac activity. 2 cases with absent fetal cardiac activity were diagnosed as inevitable abortion & 1 case as missed abortion. Of the 3 cases which demonstrated less liquor, 2 cases were inevitable abortion & 1 case was threatened abortion. Yolk sac was detected in 12 cases. All were diagnosed as threatened abortion. Placenta was visualized in 6 cases & all were of more than 11 weeks gestation.

WE HAVE DIVIDED OUR STUDY GROUP INTO 3 MAIN CATEGORIES FOR THE PURPOSE OF STATISTICAL CORRELATION. THE 3 GROUPS ARE:

Viable intrauterine pregnancies

Nonviable intrauterine pregnancy

Ectopic pregnancy/gestation

The groups were formed on the basis of the subsequent line of management in the particular cases.

All cases of viable intrauterine pregnancies were to be followed up without intervention; while other cases were managed as appropriate based on the USG findings.

Table 2: Correlation of USG diagnosis with Final diagnosis- an evaluation

Parameters	Sen.	Sp	PPV	NPV	Accuracy	P value
Viable intrauterine pregnancy	100.00	100.00	100.00	100.00	100.00	<0.001**
Ectopic Pregnancy	80.00	100.00	1000.00	97.83	98.00	<0.001**
Nonviable intrauterine pregnancy	100.00	95.65	96.43	100.00	98.00	<0.001**

In present study, 18 cases of viable intrauterine pregnancies were correctly diagnosed on USG with zero false positive & zero false negativity with sensitivity, specificity, PPV, NPV & accuracy of 100% each.

80% of ectopic pregnancies were correctly diagnosed with a specificity & PPV of 100 % whereas 1 case was missed on sonography with a sensitivity of 80% & NPV of 97.83% with an accuracy of 98%.

Of the nonviable pregnancies diagnose on USG were conf irmed with a sensitivity & NPV of 100% whereas 1 case of false positive complete abortion was made on USG with a specificity of 95.65%, PPV of 96.43% & accuracy of 98%.

USG diagnosis proved to be very accurate on statistical evaluation with a very significant p value of <0.001.

Table 3: Correlation of Clinical diagnosis with USG diagn osis- an evaluation

Parameters	Sen.	Sp	PPV	NPV	Accuracy	P value
Viable intrauterine pregnancy	83.33	65.63	57.69	87.50	72.00	<0.001**
Ectopic Pregnancy	75.00	97.93	75.00	97.83	96.00	<0.001**
Nonviable intrauterine pregnancy	57.14	81.82	80.00	60.0	68.00	0.052+

Sen. Sensitivity; Sp: Specificity, PPV: Positive predictive Value; NPV: Negative Predictive value & Accuracy

In present study, when compared to the USG diagnosis, clinical diagnosis has true positive of 15, false positive of 11 & true negative of 21 in diagnosing viable pregnancies that constitutes threatened abortion . Clinical diagnosis has high false negative & true negative in diagnosing non viable intrauterine pregnancies. Our study has a sensitivity of 83.3, PPV of 57.7 & accuracy of 72% in diagnosing viable pregnancies with a very significant p value (< 0.001).

Clinical diagnosis of ectopic pregnancy has good specificity (97.93%), NPV (97.83%) & accuracy (96%) with p value < 0.001 which is very significant.

Clinical diagnosis has got very poor statistical correlation when compared to USG diagnosis in evaluating non viable intrauterine pregnancies with a sensitivity of 57.14 %, NPV of 60% & accuracy 68.0 % which shows a p value of 0.052.

This data shows that USG diagnosis is considerably more accurate than clinical diagnosis.

Table 4: Treatment

Treatment	Number (n=50)	%
Conservative	30	60
Laparatomy	3	6.0
D & C	17	34.0

Out of 50 cases of in our study, 30cases were managed conservatively. All threatened cases were managed with bed rest either in the hospital on in the home. All 4 cases of inevitable abortion were spontaneously aborted on expectant management. 1 out of the 4 missed abortions & 2 out of the 5 ectopic pregnancies were managed conservatively. All cases of complete abortion were treated with bed rest. 3 cases out of 5 of ectopic pregnancy were treated by laparotomy. All incomplete abortions & anembryonic gestation were surgically evacuated. 2 cases of H mole were treated by D&C.

DISCUSSION:

Bleeding per vaginum in the first trimester is 1 of the most common obstetric problems. By mere clinical history & examination definitive diagnosis is usually impossible. The causes of bleeding are many & cover a spectrum of conditions ranging from a viable pregnancy to non-viable pregnancy.

Ultrasonography has opened new dimensions in early pregnancy bleeding so that specific treatment, medical or surgical, can be immediately instituted. Accurate diagnosis of nature of the pregnancy (viable or non-viable) can avoid unnecessary hormonal treatment & prolonged hospit aliz ation. It also indicates the need for a Dilatation & Curettage by diagnosing retained products of conception in the uterine cavity. Ultrasonographic examination provides good index for evacuation in cases of abortion. Curettage is necessary if residual contents are seen but not when the uterus though bulky appears empty.

CONCLUSION :

Vaginal bleeding in the first trimester of pregnancy is a common obstetric problem & is a cause of anxiety & worry both to the patients & the obstetrician. Clinical history & pelvic examination are inadequate in assessing the cause & the prognosis.USG is a non- invasive, non-ionizing & easily available method of investigation to assess the patients with first trimester bleeding which is highly accurate in diagnosing the actual causes of bleeding & guides the clinician in choosing the appropriate line of management & prevents mismanagement of the cases. USG can assess some findings which are helpful in predicting the prognosis of the pregnancy.

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