RESEARCH ARTICLE

BLEEDING PER VAGINUM IN FIRST TRIMESTER OF PREGNANCY: ROLE OF ULTRASONOGRAPHY AND ITS CLINICAL CORRELATION

*Dr. Divya Bagoria, Dr. Reena Mathur, Dr. Avinash Gupta, Dr. Sumitra Choudhary and Dr. Jaya Pamnani

JLN Medical College and attached group of hospitals, Ajmer -305001

ARTICLE INFO	ABSTRACT
	Aims & Objectives of the study: The purpose of this prospective study is to show the importance of ultrasonography in cases of bleeding in first trimester which helps in confirming the pregnancy & precisely identifying the cause of vaginal bleeding occurring in the first trimester and to define correlation of ultrasound findings with clinical diagnosis. **Materials and Methods:** The present Hospital based prospective cohort study was conducted on 100 patients in our department during the period of eighteen months; from 1stApril 2015 to 31st August 2016. Patients presenting anywhere from the first day of the last menstrual cycle to the first twelve weeks of pregnancy were included. Women of reproductive age with a missed period but a negative urine pregnancy test and patients who refused to admission were excluded **Results:** Majority of patients in the present study belonged to 26 – 30 years of age. The most common cause of bleeding in first trimester was threatened abortion (32%). The total number of disparities between clinical and ultrasound diagnosis of the causes of bleeding in first trimester was 64%. The accuracy of ultrasound compared to that of clinical diagnosis was 100% in the detection of threatened abortion, blighted ovum, incomplete abortion, complete abortion and vesicular mole. It was found the accuracy was 66.7% in the diagnosis of ectopic pregnancy. **Conclusion:** Ultrasound is a very valuable tool in the diagnosis of various causes of bleeding per vaginum in first trimester of pregnancy. It is the only imaging modality which is easily accessible and by which an accurate assessment of the first trimester bleeding can be done from diagnostic and prognostic point of view.

INTRODUCTION

Vaginal bleeding in the first trimester of pregnancy is a common obstetric problem and causes worry and anxiety both to the patient. First trimester is a dynamic period which spans ovulation, fertilization, implantation and organogenesis. 20-25% of pregnant women will have bleeding of some degree during early months of gestation. The significance of bleeding in early pregnancy in a given patient may range from an inconsequential episode to a life threatening emergency. The three major causes of bleeding in first trimester are abortion, ectopic pregnancy and molar pregnancy and causes unrelated to pregnancy like cervical erosion, polyp, vaginal varicose or cervical carcinoma. Ultrasound helps in assessing the type of abortion.

Aims & Objectives of the Study

The purpose of this prospective study is to show the importance of ultrasonography in cases of bleeding in first trimester which helps in:

*Corresponding author: Dr. Divya Bagoria,
JLN Medical College and attached group of hospitals, Ajmer -305001

- To confirm the pregnancy & precisely identifying the cause of vaginal bleeding occurring in the first trimester.
- To define correlation of ultrasound finding with clinical diagnosis.
- To predict the perinatal outcome of pregnancies with first trimester bleeding and the influence of USG acquired information on care and cost of care.
- Role of endovaginal sonography in precisely evaluating and diagnosing the causes of first trimester bleeding.

MATERIALS AND METHODS

The present Hospital based prospective cohort study was conducted on 100 patients in the department of Radio-diagnosis, J.L.N. Medical College and Hospital, Ajmer during the period of eighteen months; from 1st April 2015 to 31st August 2016. A complete history was followed by physical examination of all systems including gynaecological examination.

The results of the examination and history helped to come to a clinical diagnosis. For all the ultrasound examinations in this study full bladder technique was used for trans abdominal scans and empty bladder technique for transvaginal scans.

In the present study, 55% cases were with more than 10 weeks of amenorrhoea, complained of bleeding. The least problematic period was 8-10 weeks as 17% had bleeding during this period, 28% cases less than 8 weeks complained of

Table. showing disparity between clinical diagnosis and ultrasound diagnosis

Cases	Clinical diagnosis	USG diagnosis	Disparity
Threatened Abortion	58	32	26
Missed Abortion	20	18	2
Anembryonic pregnancy	0	14	14
Complete Abortion	0	10	10
Incomplete Abortion	16	12	4
Inevitable Abortion	0	4	4
Ectopic Pregnancy	4	4	0
Vesicular Mole	0	4	4
T.O Mass	2	2	0
Total	100	100	64

Table. showing comparison of different authors study and present study for incidence of bleeding in first trimester of pregnancy

Study group	Percentage (%)
James R. Scott, 1999	20-25
Funderbert *et al.* (2000)	2
Kiran Pandey, 2000	15
Present study	11

Table. showing comparison of clinical and USG diagnosis of few studies

Study	Clinical diagnosis	USG diagnosis	Disparity	
			Number	Percentage%
1. Anuradha Khanna Chandra Prakash *et al.* (1992)	58	24	34	50
2. TG Gorade *et al.* (1991)	63	43	20	68
3. P Reddi Rani *et al.* (2000)	100	58	42	42
4. Present study	100	36	64	64

Table. Comparison of USG accuracy with some studies available

Causes of Bleeding	Study of Rama Sofat[7]	Study of Neelam B[8]	Present Study
Threatened Abortion	95.5	98.2	100
Missed Abortion	100	100	100
An embryonic gestation	100	0	100
Incomplete Abortion	50	100	100
Complete Abortion	-	-	100
Inevitable Abortion -	100	-	100
Ectopic Pregnancy	87.5	-	66.7
Vesicular Mole	100	100	100
Low lying placnta	-	100	-
Delayed periods	100	100	-

INCLUSION CRITERIA: Patients presenting anywhere from the first day of the last menstrual cycle to the first twelve weeks of pregnancy.

EXCLUSION CRITERIA: Women of reproductive age with a missed period but a negative urine pregnancy test and patients who refused to admission.

RESULTS

The present study comprises of 100 cases. Out of total 892 cases, 100 cases had bleeding per vaginum in first trimester constituting a percentage of 11%. Majority of patients in the present study belonged to 26 – 30 years of age, totalling 37%, and 35% were from the age group 20 – 25 years, 19% were less than 20 years and 9% were more than 30 years. Of the women more than 30 years, 5 cases were of threatened abortion, one case of incomplete abortion and an embryonic pregnancy each and 2 were ectopic pregnancies.

bleeding. So the most vulnerable period of pregnancy for bleeding to occur according was more than 10 weeks.

Distribution of Cases according to Causes of Bleeding In First Trimester
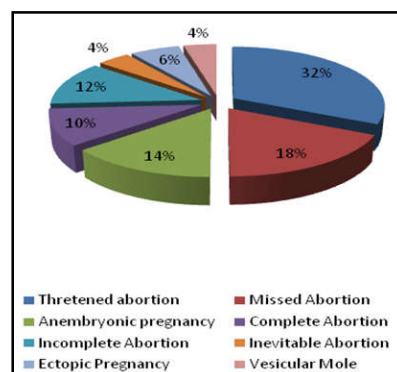
The most common cause of bleeding in first trimester was threatened abortion (32%). The next common cause was missed abortion in 18% of cases, followed by Anembryonic pregnancy in 14%. In our study out of 100 cases 92% had abortion as the major cause of bleeding in first trimester. The rest cause for bleeding per vaginum in first trimester is ectopic pregnancy and hydatidiform mole which constitutes 4% each. In the present study, 58% were diagnosed as threatened abortion clinically, 20% as missed abortion, 16% as incomplete abortion. In 4% diagnosis of Ectopic pregnancy was made. In 2% a clinical diagnosis of a Tubo – ovarian mass was made. In the present study, ultrasound diagnosis of threatened abortions was made in 32%, 18% were diagnosed as missed abortions, 14% were diagnosed as an-embryonic pregnancy. Of the other cases, 10% were complete abortions, 12% were incomplete abortions, 4% were inevitable abortions, ectopic pregnancy and vesicular mole each and the remaining 2% was diagnosed by ultrasound examination as Tubo-ovarian masses.

The total number of disparities between clinical and ultrasound diagnosis of the causes of bleeding in first trimester was 64%. All the cases diagnosed clinically as ectopic pregnancy were ectopic pregnancy on ultrasound and also on laparotomy. Both the vesicular moles were misdiagnosed as Threatened Abortion. 2 cases diagnosed as T.O. Mass turned out to be ectopic pregnancy. Ultrasound diagnosis has got a greater reliability. There is 100% sensitivity of ultrasound diagnosis in all cases except ectopic pregnancy.

DISCUSSION

Nearly 25% of all pregnant women in their first trimester complain of bleeding. By mere clinical history and examination definitive diagnosis is usually impossible. The sonographic landmarks of first trimester of pregnancy have been well recognized and they include identification of gestational sac, fetal pole, fetal cardiac activity, yolk sac and amnion. The invaluable role of these landmarks, gestational sac and fetal biometry in diagnosing pathological pregnancy and predicting pregnancy outcome has been clearly documented. The above table shows that the incidence of bleeding in early pregnancy varies widely from 1 to 25%. In our study the incidence was 11%. In the present study, age group showing maximum incidence of bleeding per vaginum was 26-30 years and constituted 44%. Studies have shown increased risk of abortion with advancing maternal age and parity. Advancing maternal age is associated with adverse pregnancy outcome, this is also studied by Andrew Cziezel *et al*. (1984) in their study which concluded incidence of spontaneous abortion as 50% after age of 40 years. In our study 100 clinically diagnosed cases were confirmed on ultrasound with disparity of 64%. The present study is comparable to T G Ghorade's study. Anuradha Khanna, P Reddi Rani has got disparity of 50% and 42% between clinical and ultrasound diagnosis respectively. The results of present study are comparable with the studies of Rama Sofat and Neelam B. 100% ultrasound accuracy was noted in the diagnosis of threatened abortion, incomplete abortion, blighted ovum, complete abortion and vesicular mole. The accuracy of ultrasound diagnosis in the present study is less compared to that of Rama Sofat. In the present study, accuracy in diagnosing ectopic pregnancies was 66.7%.

Summary

In my study, I have evaluated 100 cases of bleeding in first trimester to know the role of ultrasound examination versus clinical examination. By mere clinical examination, it was not possible to diagnose many cases correctly. There was a disparity of 64% between clinical and sonological diagnosis. The accuracy of ultrasound compared to that of clinical diagnosis was 100% in the detection of threatened abortion, blighted ovum, incomplete abortion, complete abortion and vesicular mole. It was found the accuracy was 66.7% in the diagnosis of ectopic pregnancy. 2 case of the ectopic pregnancies in the study was wrongly diagnosed T.O. mass by ultrasound examination.

Conclusion

Ultrasound is a very valuable tool in the diagnosis of various causes of bleeding per vaginum in first trimester of pregnancy. It not only helps in ruling out the dilemma when assessed clinically but also is more accurate, safe, non invasive and quick in diagnosis and management of such cases. It is the only imaging modality which is easily accessible and by which an accurate assessment of the first trimester bleeding can be done from diagnostic and prognostic point of view. Ultrasound positively helps in accessing the safe continuation of pregnancy, timely intervention for abnormal pregnancy and avoiding unnecessary intervention in those cases who do not need them.

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