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Original Research Article

Ultrasound Evaluation of Vaginal Bleeding in First Trimester Pregnancy: A Prospective Study

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Abstract

Background & Methods: The aim of the study is to study Ultrasound evaluation of vaginal bleeding in first trimester pregnancy. All ages of the study's patients participated in a prospective, duration-based study. 306 patients admitted to our hospital with history of bleeding in the first trimester of pregnancy in whom ultrasound evaluation was done were studied.

Results: In the present study, the most common transvaginal ultrasound finding was RPOC (43.46%) followed by blighted ovum (18.95%).

Conclusion: USG played a very important role in the diagnosis of cause of first trimester bleeding. It can diagnose threatened abortion positively. Ectopic, threatened abortion, inevitable abortion and complete molar pregnancy are reliably diagnosed. Patient with complete abortions were accurately identified, so that unnecessary curettage was avoided with a consequent reduction in morbidity. In the present study, 18.95% had Blighted Ovum, 0.98% had Complete Mole, 3.27% had Ectopic,10.13% had inevitable abortion ,1.96% had Mole ,10.46% had Embryonic demise ,0.65% had Fibroid, 11.11% had Missed abortion ,0.65% had Partial Mole,0.98% had complete mole, 43.46% had RPOC ,11.76% had Threatened Abortion ,0.98% had USG Inconclusive and 0.33% had Uterine Anomaly.

Keywords: Ultrasound, Vaginal, Bleeding & Pregnancy.

Study Design: Prospective Study.

1. INTRODUCTION

Vaginal bleeding is any bleeding through the vagina, including bleeding from the vaginal wall itself, as well as (and more commonly) bleeding from another location of the female reproductive system, often the uterus [1]. Usually, it is brought on by hormonal issues or other reproductive system issues, including irregular uterine bleeding, or it is a typical part of the monthly cycle. Pregnancy-related vaginal bleeding may be a sign of a potential pregnancy problem that requires medical attention. It is one of the most frequent and a potentially serious cause which calls for an emergency consultation during pregnancy. Blood loss per vaginam (Latin: through the vagina) (PV) typically arises from the lining of the uterus (endometrium), but may arise from uterine or cervical lesions, the vagina, and rarely from the fallopian tube [2].

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Vaginal Bleeding occurring in an early pregnancy pose diagnostic challenges for both obstetrician and sonologist. First trimester is a dynamic period which marks ovulation, fertilization, implantation and organogenesis. Nearly 20- 25% of pregnant women present with bleeding of some degree during early months of gestation [3]. It is a symptom that frequently interrupts the normal development of early gestation. Vaginal bleeding during first trimester has been estimated to occur in 16% of all pregnant women while frequency of spontaneous abortion is estimated at 20%. [4]

The major causes of bleeding during pregnancy in the first trimester include abortion, ectopic pregnancy and molar pregnancy and certain conditions unrelated to pregnancy like cervical erosion, cervical polyp and cervical carcinoma. [5]

Even with the most recent advancements in technology and laboratory diagnostics, early detection is still a goal that is frequently not met. By mere history or clinical examination, a definitive diagnosis is usually impossible, ultrasonography has opened new dimensions in early pregnancy complications so that specific treatment can be immediately instituted [6]. Before the invention of ultrasound technology, the diagnosis of the reason for bleeding during the first trimester was made using the patient's medical history, clinical observations, and the results of a positive or negative pregnancy test. These do not specifically point out the source of the bleeding or help with decision-making. Ultrasonography helps in the early diagnosis, appropriate management and a post evacuation follow up of molar pregnancy which with a backup of serum β HCG, follow up of such cases becomes feasible [7]. Life threatening emergency like an ectopic pregnancy when evaluated by ultrasound helps in confirming the diagnosis and also in deciding the mode of approach, conservative management alternatively will help preserve the fertility when possible[8].

2. MATERIAL AND METHODS

306 patients with bleeding PV in first trimester of pregnancy referred to the Department of Radiodiagnosis, G.R.M.C. Gwalior for diagnosis and evaluation for the cause of bleeding.

All ages of the study's patients participated in a prospective, duration-based study. 306 patients admitted to our hospital with history of bleeding in the first trimester of pregnancy in whom ultrasound evaluation was done were studied. At admission a detailed obstetric history and clinical examination was done to arrive at a provisional diagnosis. Abdominal and Transvaginal ultrasonography was done in all cases. Role of ultrasound in diagnosis and subsequent management of these patients who presented with vaginal bleeding during first trimester.

Inclusion Criteria

- Patients with history of per vaginal bleeding in the setting of amenorrhea of upto 12 weeks or known pregnancy in the first trimester (either from a urine pregnancy test (UPT) or B HCG levels) in Jay Arogya group of hospitals, Gwalior.

Exclusion Criteria

- Patients not giving consent.
- Amenorrhea without PV bleeding.
- Patients in whom a urine UPT or serum B HCG levels had excluded pregnancy.
- Amenorrhea with UPT and B HCG negative.
- Bleeding in 2nd or 3rd trimester of pregnancy.

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3. RESULT

Table 1: Age Group Distribution

	Frequency	Percentage
19-25	104	33.99
26-35	173	56.54
36-45	26	8.50
46-55	3	0.98
Total	306	100

In the present study, age group was categorised into four groups as followings: 19-25 years (33.99%), 26-35 years (56.54%), 36-45 years (8.50%), 46-55 years (0.98%). Most common age group was 26-35 years (56.54%) whereas 46-55 years was least common observed during the study.

Table 2: Clinical Symptoms

	Frequency	Percentage
Amenorrhea, PV bleeding	306	100
Pain	221	72.22
Nausea, Vomiting	89	29.08
Others	50	16.34
Total	306	100

Out of 306 patients, 100% had Amenorrhea, PV bleeding, 72.22% had Pain, 29.08% had nausea with vomiting, 16.34% had others type of clinical symptoms like headache, dizziness, fever were observed during the study.

Table 3: Concurrent Medical Illness

	Frequency	Percentage
Infection	20	6.54
Diabetes	10	3.27
Hypertension	5	1.63
Epilepsy	2	0.65
Asthma	2	0.65
Others	1	0.33

In the present study, we were observed following type of concurrent medical illness: Infection (6.54%), Diabetes (3.27%), Hypertension (1.63%), Epilepsy (0.65%), Asthma (0.65%), and others like allergy, polycystic kidney and peptic ulcer disease (0.33%).

Table 4: TVS Findings

	Frequency	Percentage
Blighted Ovum	58	18.95
Complete Mole	3	0.98
Ectopic	10	3.27
Inevitable abortion	31	10.13
Mole	6	1.96

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Embryonic demise	32	10.46
Fibroid	2	0.65
Missed abortion	34	11.11
Partial Mole	2	0.65
Polyp	1	0.33
RPOC	133	43.46
Threatened Abortion	36	11.76
USG Inconclusive	3	0.98
Uterine Anomaly	1	0.33

In the present study, the most common transvaginal ultrasound finding was RPOC (43.46%) followed by blighted ovum (18.95%).

Table 5: Correlation of TAS Findings with TVS Findings

S.NO.	DIAGNOSIS		TAS	TVS
1	RPOC/INCOMPLETE ABORTION	No.	120	133
		%	90.2%	100%
2	BLIGHTED OVUM	No.	53	58
		%	91.3%	100%
3	THREATENED ABORTION	No.	30	36
		%	83.3%	100%
4	EMBRYONIC DEMISE	No.	29	32
		%	90.6%	100%
5	INEVITABLE ABORTION	No.	20	25
		%	80%	100%
6	ECTOPIC	No.	8	10
		%	80%	100%
7	MOLAR PREGNANCY	No.	5	5
		%	100%	100%
8	FIBROID	No.	2	2
		%	100%	100%
9	POLYP	No.	1	1
		%	100%	100%
10	UTERINE ANOMALY	No.	1	1
		%	100%	100%

4. DISCUSSION

Bleeding per vaginum in the first trimester is one of the most common emergencies encountered which warrants for an ultrasound examination [9]. The causes of bleeding are many and cover a spectrum of conditions ranging from a viable pregnancy to that of a non-viable one. Accurate diagnosis of the nature of pregnancy (viable or non-viable) can help institute the appropriate treatment. The sonographic landmarks of the first trimester of pregnancy have been well recognized which includes identification of gestational sac, fetal pole, fetal cardiac activity, movements, yolk sac and amnion. The invaluable role of these landmarks, gestational sac and fetal biometry in diagnosing abnormalities and predicting the pregnancy outcome has been clearly documented [10].

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Depending upon the correct diagnosis the management may vary from conservative observation to invasive laparotomy.
Ultrasound is a non-invasive, easily accessible, and highly diagnostic tool in the modern era of obstetrics. Accurate diagnosis and proper intervention is mandatory to save not only the fetus but also the mother. Hence the differential diagnosis must be kept in mind before deciding further management [11].
In the present study, 100% had Amenorrhea, PV bleeding, 72.22% had Pain, 29.08% had nausea with vomiting, 16.34% had others type of clinical symptoms observed during the study observation [12].
6.54% had Infection, 3.27% had Diabetes, 1.63% had Hypertension, Epilepsy, 0.65% had Asthma and 0.33% had others type of clinical symptom observed during the study.

5. CONCLUSION

USG played a very important role in the diagnosis of cause of first trimester bleeding. It can diagnose threatened abortion positively. Ectopic, threatened abortion, inevitable abortion and complete molar pregnancy are reliably diagnosed. Patient with complete abortions were accurately identified, so that unnecessary curettage was avoided with a consequent reduction in morbidity. In the present study, 18.95% had Blighted Ovum, 0.98% had Complete Mole, 3.27% had Ectopic,10.13% had inevitable abortion ,1.96% had Mole ,10.46% had Embryonic demise ,0.65% had Fibroid, 11.11% had Missed abortion ,0.65% had Partial Mole,0.98% had complete mole, 43.46% had RPOC ,11.76% had Threatened Abortion ,0.98% had USG Inconclusive and 0.33% had Uterine Anomaly.

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