

Study of Ultra-Sonographic Evaluation of Vaginal Bleeding in Pregnancy of Maharashtra Population

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Received: 25-01-2024 / Revised: 23-02-2024 / Accepted: 26-03-2024

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Conflict of interest: Nil

Abstract:

Background: Vaginal bleeding during the first trimester is a common obstetric condition. If it persists after the first trimester of pregnancy, it must also be treated as an emergency and the causes viewed ultrasonographically to avoid morbidity and mortality of the fetus.

Method: 300 pregnant women between 18 to 45 aged with vaginal bleeding studied clinical examination, USG/TVS routine blood examination, and CT BT was also studied.

Results: The highest bleeding age group was 21–30 years, followed by 31–40 years. In the USG study, the majority of obstetrical findings were found in less than 20 weeks of gestation when compared with more than 20 weeks. Abortion disorders, subchorionic hemorrhage, and the location of the placenta are observed only in USG findings, which were missing in clinical studies.

Conclusion: The USG/TVS technique is ideal to finalize the diagnosis of vaginal bleeding during pregnancy. It will be a tool for obstetricians and gynecologists to treat such patients efficiently and avoid life-threatening emergencies, morbidity, and mortality in pregnant women.

Keywords: bleeding pregnancy, USG, TVS, gestation.

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Introduction

Ultra-sonography was invented by Ian Donald in 1958 and started in India around early 1980s as a method of detecting fetal anomalies. Now this technique is regarded as a milestone of modern medicine to diagnose diseases of abdominal and pelvic organ viscera's [1]. Any discharge of blood from the vagina during pregnancy constitutes vaginal bleeding. The bleeding is often known to occur at the point of conception until the pregnancy; vaginal bleeding is common. In the first trimester, complications are often considered to be a sign of a problem in pregnancy. It occurs in 20–25% of pregnant women [2].

The significance of the initial diagnosis and clinical approach to vaginal bleeding depend on age and bleeding characteristics. Vaginal bleeding during pregnancy is associated with an increased risk of many adverse outcomes, including preterm labor (PTL), preterm premature rupture of membranes (PPROM), and antepartum hemorrhage (APH) [3].

As bleeding persists later in pregnancy, the risk of associated morbidities increases. 50% of women who suffer from vaginal bleeding during early pregnancy go on to have a normal pregnancy [4].

The major causes of vaginal bleeding are abortion, ectopic pregnancy, and molar pregnancy. Hence, an attempt was made to evaluate different anomalies of pregnancy and compare the clinical diagnosis and USG findings in different gestational weeks of pregnancy to rule out the major causes of vaginal bleeding during pregnancy.

Material and Method

300 (three hundred) women aged between 18 to 45 years, regularly visited the obstetrics and gynecology department of Symbiosis Medical College for Women and Symbiosis University Hospital and Research Centre Lavale Pune, Maharashtra 412115, were studied.

Inclusion Criteria: Pregnant women presenting vaginal bleeding of any cause were selected for study and given written consent to include in the study.

Exclusion Criteria: Women with vaginal bleeding without pregnancy were excluded from the study.

Method: The complete obstetric history, clinical data, age, parity of gestational age, menstrual history, and details of present and previous pregnancies were noted.

Details of vaginal bleeding, including time of the first episode, quantity, duration, associated pain in the in the abdomen, and history of the expulsion of fleshy mass clots, were also noted in the predesigned Performa. A complete general physical examination, clinical examination, and details of the pelvic examination were also noted in every patient.

Every patient was subjected to trans-abdominal and trans-vaginal ultrasonography. The trans-vaginal ultra-sonography was performed whenever the trans-abdominal ultra-sonography was not conclusive or equivocal. The trans-vaginal sonography was done using a TVS 5.7 MHz transducer. The clinical findings and operative procedures were correlated.

The duration of the study was from July 2023 to January 2024.

Statistical analysis

USG and clinical findings were studied and compared with percentages. The statistical analysis was carried out in SPSS software.

Observation and Results

Table 1: Distribution of age in vaginal bleeding in pregnant patients 26 (8.6%) were less than 20 years old, 160 (53.3%) were aged between 21 -30 years, 98 (32.6%) were between 31-40 years, and 16 (53%) were > 40 years of age.

Table 1: Distribution of age groups in vaginal bleeding in pregnancy patientsNo. of patients: 300

Age group	No of patients (300)	Percentage (%)
Less than 20	26	8.6
21-30 year	160	53.3
31-40 year	98	32.6
> 40 years	16	5.3

Table 2: USG findings less than 20 weeks of gestation: 20 complete abortions, 22 incomplete abortions, 35 intrauterine deaths, 40 missed abortions 15: No gestation sac, 15 partial placentas Previa, 16 placenta Previa, 6 uncertain findings, and 56 vesicular moles

USG findings in more than 20 weeks of gestation: 24 abortion placentas, 4 intrauterine deaths, 10 low-lying placentas, 16 total placenta previa, 21 upper segment placentas,

Table 3: Comparison of clinical diagnosis with USG findings

- Abruptio placenta 12 in clinical diagnosis and 24 in USG findings.
- Blighted ovum was zero in clinical diagnosis and 12.0 in USG findings.
- Complete abortion: 22 clinical diagnoses and 20 USG findings
- Ectopic gestation was 17 in clinical diagnosis and 15 in USG findings.
- Intrauterine deaths were 21 in clinical diagnosis and 39 in USG findings.
- Low-lying placenta zero in clinical diagnosis and 10 in USG findings
- Missed abortions were 15 in clinical diagnosis and 40 in USG findings.
- No gestational sac was zero in clinical diagnosis and 15 in USG findings.
- Placenta location was not possible in clinical diagnosis, and 17 placentas were located in USG findings.
- Total placenta previa was zero in clinical diagnosis and 16 in USG findings.
- Uncertain findings were zero in clinical findings and 6 in USG findings.
- Vesicular mole 28 was clinical diagnoses and 56 were USG findings.

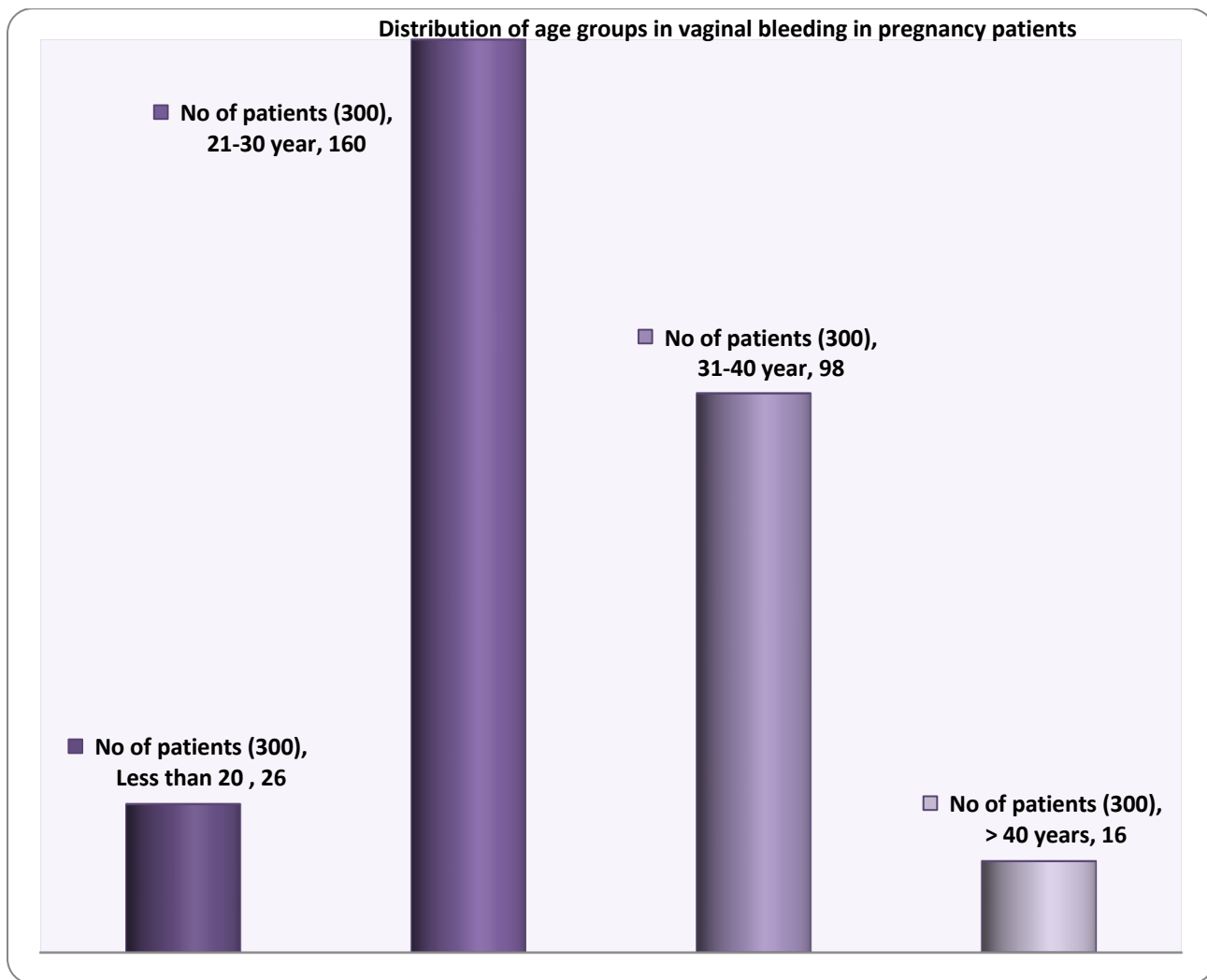


Figure 1: Distribution of age groups in vaginal bleeding in pregnancy patients

Table 2: USG Findings in different gestation weeks

USG Finding	Less than 20 weeks	More than 20 weeks
Abruptio placenta	0	24
Complete Abortion	20	0
Incomplete Abortion	22	0
Intra Uterine death	35	4
Low lying placenta	0	10
Missed Abortion	40	0
No gestation sac	15	0
Partial placenta Previa	15	0
Placenta localisation Not possible	-	-
Total placenta Previa	0	16
Uncertain findings	6	0
Upper segment placenta	0	21
Vesicular mole	56	0
Total	225	75

Table 3: Comparison of clinical diagnosis with USG findings

Diagnosis	Clinical diagnosis	USG Findings
Abruptio placenta	12	14
Blighted ovum	0	12
Complete abortion	22	20
Ectopic gestation	17	15
Incomplete abortion	44	22
Intra uterine death	21	39
Live foetus	0	0
Low lying placenta	0	10
Missed abortion	15	40
No gestational sac	0	15
Partial placenta Previa	0	15
Placenta location	0	17
Not possible	0	0
Total placenta Previa	0	16
Uncertain findings	0	6
Upper segment placenta	0	21
Vesicular mole	28	56

Discussion

Present study of ultra-sonographic evaluation of vaginal bleeding during pregnancy in Maharashtra population. In the study of the distribution of age, 26 (8.6%) were less than 20 years old, 160 (53.3%) were aged between 21-30 years, 98 (32%) were aged between 31-40 years old, and 16 (5.3%) were above 40 years old (Table 1). USG findings in different gestation weeks: in less than 20 weeks of gestation, 20 complete abortions, 22 incomplete abortions, 35 intrauterine deaths, 40 missed abortions, 15 no gestational sacs, 15 partial placental previa, 16 placenta previa, 6 uncertain findings, and 56 vesicular moles. In more than 20 weeks of gestation, there were 24 abruptio placentas, 4 intrauterine deaths, 10 low-lying placentas, 16 total placentas previa, and 21 upper-segment placentas (Table 2). In comparison of clinical diagnosis with USG findings, abruptio placenta 12 in clinical diagnosis, 24 in USG findings, blighted ovum zero in clinical diagnosis, and 12 in USG findings. Complete abortion: 22 in clinical diagnosis, 20 in USG findings. Ectopic gestation is 17 in clinical diagnosis and 15 in USG findings. In competitive abortion, 44 clinical studies and 22 USG findings. Intrauterine death: 21 in clinical diagnosis; 39 in USG findings; low-lying placenta: zero in clinical diagnosis. Missed abortion: 15 in clinical diagnosis, 40 in USG findings, No gestational sac zero in clinical diagnosis, 15 in USG findings; partial placenta pervia zero in clinical diagnosis, 15 in USG findings; placenta location was not possible in clinical diagnosis and 17 USG findings; total placenta previa zero in clinical diagnosis, 16 in USG findings; uncertain finding zero in clinical diagnosis, 6 in USG findings; upper segment placenta zero in clinical diagnosis, 21 in USG findings; vascular mole 28 in clinical diagnosis and 56 in USG findings (Table 3). These findings

are more or less in agreement with previous studies [5,6,7].

Bleeding in the early stages of pregnancy indicates the abnormality of the fetus, as observed in our study (Table 2). The diagnosis of viability and non-viability during pregnancy can help in the early termination of pregnancy, and thus physiological and psychological consequences can be prevented in pregnant women [8]. In the majority of cases, the clinical and pelvic examination does not clearly delineate the viability of the pregnancy in terms of vaginal bleeding until confirmed in USG. Hence, USG played a vital role in finding out the viability of the fetus in vaginal bleeding. Abruptio placenta, low-lying placenta No-gestational sac, total placenta Previa, upper segment placenta, and vesicular mole can be observed and appreciated only in the USG study [9].

Hence the causes of bleeding covered a spectrum of conditions, from non-viable pregnancy to various abnormalities of the placenta and its locations. The USG examination was a good indicator for evacuation in cases of abortion. Using ultrasound pregnancy with higher chances of viable birth could be differentiated from pathological pregnancy warranting immediate termination.

Summary and Conclusion

In the present, USG evaluation of vaginal bleeding has proved that it is a very valuable tool in the diagnosis of various causes of bleeding per vaginum in the first trimester of pregnancy and in the prolonged later period of pregnancy too. USG positively helps in accessing safe continuation of pregnancy and timely intervention for abnormal pregnancy. An embryonic gestation is diagnosed only by USG. But this study demands hematological, pathophysiological, nutritional,

embryological, genetic, pharmacological, and hormonal studies because the exact pathogenesis of bleeding in different trimesters of pregnancy is still unclear.

Limitation of study: Owing to the tertiary location of the research center, the small number of patients, and the and the lack of the latest techniques, we have limited findings and results.

This research paper was approved by the ethical committee of Symbiosis Medical College for Women and Symbiosis University Hospital and Research Centre, Lavale, Pune, Maharashtra 412115.

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