

A Comparative study of Ultrasonographic Evaluation of Vaginal Bleeding in Pregnancy with Clinical Examination

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Received: 05-07-2020 / Revised: 16-08-2020 / Accepted: 22-08-2020

Abstract

Background: Vaginal bleeding is common in pregnancy. The causes for the vaginal bleeding cannot be evaluated by clinical and pelvic examination alone. Ultrasonography can have an important role in establishing the diagnosis. **Materials and Methods:** A prospective study was conducted in a tertiary care centre among 110 pregnant attending the OBG department with vaginal bleeding. The pregnant women with vaginal bleeding were evaluated both clinically and ultrasonographically. **Results:** Most of the women in this study belonged to 21 – 30 years of age. Abruptio placenta, Complete abortion, Incomplete abortion, ectopic gestation, intra uterine death, missed abortion, total placenta previa by clinical diagnosis were misdiagnosed as per ultrasonographic examination. The sensitivity of clinical diagnosis was 100%, specificity was 36.2%, PPV was 51.6% and NPV was 100% in comparison with the ultrasonography in the viable pregnancy. In non viable pregnancy, the sensitivity of clinical diagnosis was 92.9%, specificity was 25%, PPV was 46.4% and NPV was 83.3% in comparison to ultrasonography. **Conclusion:** Ultrasonography helps in establishing the diagnosis of vaginal bleeding during pregnancy.

Keywords: Vaginal bleeding, Abruptio placentae, Ultrasonography, Diagnostic accuracy, pregnancy.

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Introduction

Any discharge of blood from vagina during the pregnancy constitutes the vaginal bleeding. The bleeding is often known to occur at point from conception till the term pregnancy. About 20 – 25% of the patients during first trimester lands up in vaginal bleeding[1]. During early pregnancy, vaginal bleeding is associated with 1.6 fold increased risk of adverse outcomes including pre term labor (PTL), preterm premature rupture of membranes (PPROM) and ante partum haemorrhage (APH)[2]. The literature available had shown that, the bleeding which occurs during early pregnancy can persist or recur in pregnancy and risk associated morbidity also grows. Only 50% of the pregnant women with vaginal bleeding during the early pregnancy are shown to result in normal pregnancy[3]. The diseases resulting in vaginal bleeding are variables and cover a spectrum of diseases ranging from viable to non viable pregnancy.

The definitive diagnosis of the vaginal bleeding is not possible only by clinical and pelvic examination[4]. Trans abdominal and trans vaginal ultrasonography plays an important role in evaluation of the causes of vaginal bleeding, prognostication and prediction of status of abnormal pregnancy and helps in confirmation of viability. The diagnosis of nature of diseases for vaginal bleeding during pregnancy can prevent unnecessary complications and misdiagnosis[5]. Many studies are available to diagnose etiology of first trimester vaginal bleeding. But the literatures about vaginal bleeding in pregnancy are scant. Hence, this study was undertaken in order to evaluate the vaginal bleeding during pregnancy.

Material and methods

A prospective study was undertaken among 110 pregnant women attending Outpatient department and labour room of obstetrics and gynaecology department of a tertiary care center. This study was conducted for a period of one year from January, 2019 to December, 2020. Pregnant women presenting with vaginal bleeding of any cause were included in to the study. The women

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with non obstetric causes of vaginal bleeding, women who refused to give consent were excluded. Purposive sampling technique was used in the study. The clinical data including age, parity, gestational age, complete obstetric history and menstrual history, personal history and details of present and previous pregnancy, details about vaginal bleeding including time of first episode, quantity, duration, associated pain abdomen and history of expulsion of fleshy mass/ clots were noted in a predesigned proforma. A complete general physical

examination, clinical examination and detailed pelvic examination was conducted. All the patients were subjected for trans abdominal and trans vaginal ultrasonography. The trans vaginal sonography (TVS) was conducted whenever trans abdominal ultrasonography was not conclusive or equivocal. The transabdominal sonography was done and TVS using 5 – 7 MHz transducer. The clinical finding and operative procedures were correlated. The ethical clearance was obtained by the institution ethics committee.

Results

Table 1: Distribution of stud group according to age group

Age group	Frequency	Percentage
Less than 20 years	8	7.3
21 – 30 years	57	51.8
31 – 40 years	38	34.5
More than 40 years	7	6.4
Total	110	100

This study had shown that, more than half of the cases belonged to 21 – 30 years of age. It was followed by 31 – 40 years and less than 20 years.

Table 2: Distribution of stud group according to USG findings according to gestational age

USG findings	Less than 20 weeks n (%)	More than 20 weeks n (%)
Abruptio placenta	0	10 (20.4)
Complete abortion	5 (8.2)	0
Incomplete abortion	6 (9.8)	0
Intrauterine death	10 (16.4)	0
Low lying placenta	0	3 (6.1)
Missed abortion	17 (27.9)	0
No gestational sac	0	5 (10.2)
Partial placenta previa	5 (8.2)	0
Placenta localisation not possible	6 (9.8)	0
Total placenta previa	0	6 (12.2)
Uncertain findings	2 (3.3)	0
Upper segment placenta	0	8 (16.3)
Vesicular mole	10 (16.4)	7 (14.3)
Total	61 (100)	49 (100)

χ^2 value=93.331

df=14

p value=0.000, Sig

Abruptio placenta (20.4%), Low lying placenta (6.1%), No gestational sac (10.2%), Total placenta previa (12.2%), Upper segment placenta (16.3%), Vesicular mole (14.3%) were the common ultrasonographic findings resulting in vaginal bleeding in pregnant women with gestational age of more than 20 weeks. Complete abortion (8.2%), incomplete abortion (9.8%),

Intrauterine death (16.4%), Missed abortion (27.9%), partial placenta previa (9.8%), Uncertain findings (3.3%) and vesicular mole (16.4%) were the causes of vaginal bleeding in pregnant women with gestational age of less than 20 weeks. This difference in causes was statistically significant between the two groups.

Table 3: Comparison of clinical diagnosis with USG findings

Diagnosis	Clinical diagnosis	Scan findings	Final diagnosis
Abruptio placenta	11.8	9.1	9.1
Blighted ovum	0	4.5	4.5
Complete abortion	6.4	5.5	5.5
Ectopic gestation	12.7	0	0
Incomplete abortion	15.5	9.1	9.1
Intrauterine death	7.3	2.7	2.7
Live fetus	0	15.5	15.5
Low lying placenta	0	4.5	4.5
Missed abortion	5.5	4.5	4.5
No gestational sac	0	5.5	5.5
Partial placenta previa	0	5.5	5.5
Placenta localisation not possible	0	4.5	4.5
Total placenta previa	17.3	4.5	4.5
Uncertain findings	0	1.8	1.8
Upper segment placenta	0	7.3	7.3
Vesicular mole	10.0	15.5	15.5

Abruptio placenta, Complete abortion, Incomplete abortion, ectopic gestation, intra uterine death, missed abortion, total placenta previa by clinical diagnosis were misdiagnosed as per ultrasonographic examination.

Table 4: Predictive value of the USG with clinical diagnosis

Viability	Sensitivity (%)	Specificity (%)	PPV (%)	NPV (%)
Viable	100	36.2	51.6	100
Non viable	92.9	25.0	46.4	83.3

The sensitivity of clinical diagnosis was 100%, specificity was 36.2%, PPV was 51.6% and NPV was 100% in comparison with the ultrasonography in the viable pregnancy. In non viable pregnancy, the sensitivity of clinical diagnosis was 92.9%, specificity was 25%, PPV was 46.4% and NPV was 83.3% in comparison to ultrasonography.

Discussion

This study was undertaken to study the causes of vaginal bleeding during pregnancy. Bleeding in early stage of the pregnancy indicates the abnormality of the developing embryo. The diagnosis of viability and non viability during the pregnancy can help in early termination of pregnancy and thus prevent the physical and psychological consequences in the pregnant women[6]. The clinical and pelvic examination does not clearly delineate the viability of the pregnancy in vaginal bleeding. Majority of the cases in this study were aged between 21 – 30 years. Abruptio placenta, Low lying placenta, No gestational sac, Total placenta previa, Upper segment placenta, Vesicular mole were

the common ultrasonographic findings in pregnant women with gestational age of more than 20 weeks. Complete abortion, incomplete abortion, Intrauterine death, Missed abortion, partial placenta previa, Uncertain findings and vesicular mole were the causes of vaginal bleeding in pregnant women with gestational age of less than 20 weeks which was statistically significant. A study by Sumathy et al also noted similar findings[7]. Abruptio placenta, Complete abortion, Incomplete abortion, ectopic gestation, intra uterine death, missed abortion, total placenta previa by clinical diagnosis were misdiagnosed as per ultrasonographic examination. The misdiagnosis of vaginal bleeding can be compared with the study by Sumathy et al & Gorade et al, the disparity was shown to be 72%.^{7, 8} But studies by Khanna has noted disparity as 50% and Reddi noted disparity as 42% [2,9]. The sensitivity of clinical diagnosis was 100%, specificity was 36.2%, PPV was 51.6% and NPV was 100% in comparison with the ultrasonography in the viable pregnancy. In non viable pregnancy, the sensitivity of clinical diagnosis was 92.9%, specificity was 25%, PPV was 46.4% and NPV was 83.3% in comparison to ultrasonography. A study

by Sofat et al had shown that, the accuracy of clinical diagnosis as 30% in threatened abortion, 40% in missed abortion, 95% in molar pregnancy and 35% in incomplete abortion[10].

Conclusion

The causes of vaginal bleeding in pregnancy may not be evaluated completely by clinical examination. Ultrasonography effectively helps the treating obstetrician for accurate diagnosis and appropriate treatment of vaginal bleeding.

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Source of Support: Nil

Conflict of Interest: Nil