

Original research article**A study on management of first trimester vaginal bleeding****¹Dr. Uma A Salma Afreen, ²Dr. Asha Rani KNM, ³Dr. Snehalata Desia**¹Assistant Professor, Department of OBG, VIMS, Ballari, Karnataka, India²Associate Professor, Department of OBG, VIMS, Ballari, Karnataka, India³Post Graduate, Department of OBG, VIMS, Ballari, Karnataka, India**Corresponding Author:**

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Abstract

Ultrasound supports the differentiation into threatened, incomplete or complete abortion and shows the way to appropriate clinical management. About 30 to 40% of pregnancies fail after implantation, but 10-15% manifest with clinical symptoms. Vaginal bleeding in first trimester may as well be symptom for a variety of other causes of early pregnancy pathologies such as missed abortion, blighted ovum and ectopic pregnancy. A detailed clinical examination including complete general physical examination, pelvic examination and ultrasound examination was done to arrive at a diagnosis. Data was collected in a preformed proforma. Clinical diagnosis and ultrasound findings were correlated. Analysis was based on proportions, chi-square test and unpaired t tests. Out of 100 cases, 39 cases were managed conservatively as ultrasound showed viable pregnancy, 57 cases underwent instrumental evacuation as they were non-viable and 1 case underwent Laparotomy and 1 case no follow up.

Keywords: Ultrasound, vaginal bleeding, first trimester**Introduction**

Because of the complex sequence of events that accompany first trimester development, it is not unusual for complications to occur. Approximately 15% of clinically recognized pregnancies are spontaneously miscarried. Vaginal spotting or frank bleeding is very common and experienced by 25% of patients during few weeks of pregnancy. Vaginal bleeding during this period indicates an abnormality interrupting the normal development of an early gestation ^[1].

Often the bleeding is temporary and self-limited and is likely due to the implantation of the conceptus into the decidualized endometrium. Ultrasound performed on these patients is normal. Real time ultrasonography plays an important role in the diagnosis and management of various causes of early pregnancy complications ^[2].

Clinical signs, such as abdominal pain and vaginal bleeding in early pregnancy are in first line suspicious of spontaneous abortion. Ultrasound supports the differentiation into threatened, incomplete or complete abortion and shows the way to appropriate clinical management. About 30 to 40% of pregnancies fail after implantation, but 10-15% manifest with clinical symptoms. Vaginal bleeding in first trimester may as well be symptom for a variety of other causes of early pregnancy pathologies such as missed abortion, blighted ovum and ectopic pregnancy ^[3].

In Threatened abortion, the commonest symptom in early pregnancy is vaginal bleeding which occurs in 25% of clinically apparent pregnancies, is usually slight may be brownish or bright red in colour. The bleeding usually stops spontaneously. Pelvic and lower abdominal pain that is characteristically colicky or period-like may occur with or without bleeding. The symptoms of normal pregnancy such as nausea, vomiting, breast tenderness may regress due to decreased HCG levels. Physical signs include P/S: Bleeding through external os, P/V: Uterine size corresponds to period of amenorrhoea, closed external os. In some in whom the foetus is non-viable, they abort either spontaneously or after a delay of weeks. In the rest half in whom the foetus is alive continue with pregnancy ^[4].

Along with clinical examination, ultrasound helps in diagnosing most of the cases. Other methods of assaying foetal viability are assays of various hormones like HCG, estrogen, progesterone. HCG assay is reliable and if there is no quantitative increase in the HCG level over a period of several days, it indicates pregnancy failure. On ultrasound examination, a well formed gestation ring with central echos from embryo, presence of fetal cardiac motion, with this there is 98% chance of continuation of pregnancy ^[5].

Methodology**Source of data**

The study includes women presenting with a history of bleeding per vagina in the first trimester of

pregnancy.

Inclusion criteria

Women presenting from first day of last menstrual cycle to 12 weeks of gestation with history of bleeding per vagina will be included in the study.

Exclusion criteria

- Women of reproductive age with a missed period but negative unne pregnancy test.
- Women with bleeding per vagina due to uterine anomaly and pathology.
- Women with more than 12 completed weeks of gestation.

Method of collection of data

It was a cross sectional study of patients presenting with bleeding per vagina in the first trimester of pregnancy during the study period. Informed consent and ethical committee clearance was taken. Clinical details like age, parity, consanguinity, obstetric history, menstrual history and details of present pregnancy in terms of period of amenorrhea, at the time of first episode of bleeding, amount and duration of bleeding whether associated with pain abdomen or not and history of expulsion of fleshy mass /clots were noted. A detailed clinical examination including complete general physical examination, pelvic examination and ultrasound examination was done to arrive at a diagnosis.

Data was collected in a preformed proforma. Clinical diagnosis and ultrasound findings were correlated. Analysis was based on proportions, chi- square test and unpaired t tests.

Results

Table 1: Showing the management of cases of first trimester bleeding

Management	No. of cases	Percentage (%)
Conservative	39	39
Instrumental evacuation	57	57
Laparotomy	01	01
Total	97	97

Out of 100 cases, 39cases were managed conservatively as ultrasound showed viable pregnancy, 57 cases underwent instrumental evacuation as they were non-viable and 1case underwent Laparotomy and 1 case no follow up.

We have divided our study group into 3 main categories for the purpose of statistical correlation. The 3 groups are:

1. Viable intrauterine pregnancy
2. Nonviable intrauterine pregnancy
3. Ectopic pregnancy

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

All cases of viable intrauterine pregnancies were followed up without intervention, while other cases were managed appropriately based on the ultrasound findings.

Table 2: Correlation of clinical diagnosis with final diagnosis -an observation

Parameters	True positive	False positive	False negative	True negative
Viable	33	4	4	59
Ectopic	2	0	0	98
Non-viable	59	4	33	4

The table shows 33 cases of true positive and 59 true negative, with 4 false positive 4 false negative of viable pregnancies, similarly ectopic pregnancy 2 true positives and 98 true negatives with zero false positives and false negatives and non- viable pregnancy shows 59 true positives 4 true negatives with 4 false positives and 33 false negatives.

Table 3: Correlation of clinical diagnosis with final diagnosis-an evaluation

Parameters	Sensitivity (%)	Specificity (%)	PPV (%)	NPV (%)
Viable	89	93	89	93
Ectopic	2	100	100	98
Non-viable	30	49	37	43

This shows a sensitivity of 89%, specificity of 93%, PPV of 89% and NPV of 93%, in diagnosing viable pregnancies.

Of the 2 ectopic pregnancies diagnosed clinically, all were confirmed with specificity of 100% and PPV

of 100% and NPV of 98%.

In diagnosing nonviable pregnancies, clinical diagnosis has got very poor statistical correlation with a sensitivity of 30%, specificity of 49%, PPV of 37%, NPV 43%.

Table 4: Correlation of ultrasound diagnosis with final diagnosis -observation

Parameters	True positive	False positive	False negative	True negative
Viable	37	0	0	63
Ectopic	2	0	0	98
Non-viable	59	0	0	41

The table shows 37 cases of true positive and 63 true negative, with zero false positive and false negative of viable pregnancies, similarly ectopic pregnancy 2 true positives and 98 true negatives with zero false positives and false negatives and non- viable pregnancy shows 59 true positives 41 true negatives with zero false positives and false negatives.

Table 5: Correlation of ultrasound diagnosis with final diagnosis - an evaluation

Parameters	Sensitivity (%)	Specificity (%)	PPV (%)	NPV (%)
Viable	100	100	100	100
Ectopic	100	99	95	100
Non-viable	98	100	100	98

In present study, 37 cases of viable intrauterine pregnancies were correctly diagnosed on ultrasound with zero false positive and zero false negativity with sensitivity, specificity, PPV, NPV of 100% each.

All cases of ectopic pregnancies were correctly diagnosed with a sensitivity of 100%, specificity of 99% and PPV of 95% and NPV of 100%.

The nonviable pregnancies diagnosed on ultrasound were confirmed with a sensitivity of 98% and NPV of 98%

Ultrasound diagnosis proved to be very accurate on statistical evaluation with sensitivity and specificity of 100%.

Discussion

In our study, mean gestational age at which cases presented with bleeding in first trimester was 9 weeks. Majority of the cases that is 35 of them with bleeding per vagina were between gestational ages 6-8 weeks, 32 cases had bleeding between gestational ages 8-10 weeks and 33 cases had bleeding between gestational age 10-12 weeks. A similar study done by Neelam Bharadwaj^[7] majority of patients were in gestational age of 8-10 weeks constituting 35 cases, 6-10 weeks 30 cases and 12 weeks 22 cases.

In present study various abortions contributed to a major cause of first trimester bleeding constituting 96%. In P Reddi Rani^[8], Satish K Bhargava's^[9] study group also abortion is the leading cause of early pregnancy bleeding with an incidence of 61% and 81.6% respectively.

The incidence of ectopic pregnancy is 2% compared to Satish K Bhargava's^[9] study with incidence of 13% and 21%. The incidence of H. mole in present study is 2% compared to other studies of P Reddi Rani *et al.*^[8] and Satish K Bhargava^[9] who had an incidence of 18% and 4.35% respectively.

In our study out of 40 cases of sonographically diagnosed threatened abortion, subchorionic bleed was noted in 27 cases, which is 27% when compared to Steven R *et al.*^[10], and Jan Fog Peduson *et al.*^[11] which is 20% and 18%. Our study has got increased incidence of subchorionic bleeds.

In our study the incidence of viable pregnancies on ultrasound is 37% and 59% of non-viable pregnancies which is similar to Charles W Schauburger *et al.*^[12] study.

Conclusion

Clinical history and examination along with Ultrasound is a very valuable tool in the diagnosis of various causes of bleeding per vagina' in first trimester of pregnancy. It not only helps in ruling out the dilemma, but also is more accurate, in diagnosis and management of such cases.

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