Original Article

To Evaluate the causes of Bleeding per Vagina in first Trimester of Pregnancy by Ultrasonography

Archana Bhatnagar[1] , Vimal Kishore Bhagat[2] *

[1] Associate Professor,Department of Radio diagnosis, MGM Medical College and M. Y. Hospital Indore,M.P, India

[2] Associate Professor,Department of Community Medicine, Srinivas Institute of Medical Science and Research Centre, Mangalore, Karnataka,India

Received: 22-02-2021 / Revised: 29-04-2021 / Accepted: 21-05-2021

Abstract

Background &Method: This prospective study was done in the Department of Radiodiagnosis & Obstetrics and Gynaecology of Mahatma Gandhi Medical College & M.Y. Hospital, Indore, Madhya Pradesh, India after getting approval by ISRB (Institutional Scientific Review Board).A total of 100 patients who were referred to our department with clinical history of positive urine pregnancy test and vaginal bleeding during first trimester of pregnancy from April 2019 to October 2020 after written consent and PCPNDT registration were assessed. Various causes of vaginal bleeding confirmed by transabdominal and transvaginal ultrasound and beta human chorionic gonadotropin testing aid was done.**Result:**Age ranged from 18 to 35 years which show that most of the patients belongs to age group of 21 to 25 years making 42%. 31(31%) patients belongs to 26 to 30 years, 15(15%) patients to 17 to 20 years and the least common age group was between 31 to 35 years constituting 12(12%) patients. The mean age group is 24.00 (SD= 3.16).On the basis of clinical diagnosis in patients with bleeding per vaginum during first trimester of pregnancy maximum 40(40%) patients were diagnosed as threatened abortion, while 17(17%) patients as incomplete abortion , 13(13%) patients as missed abortion , 11(11%) patients as complete abortion , 7(7%) patients as inevitable abortion, 6(6%) patients as molar pregnancy, 6(6%) patients as ectopic pregnancy.the study of 95 patients with intrauterine pregnancy showing G-sac in 62(65.26%) cases and was absent in 33(34.74%) cases. 44(46.31%) shows yolk sac and were absent in 51(53.68%). CRL was found 38(40%) and were absent in 57(60%). Cardiac activity was seen in 9(9.48%) patients and 86(90.52%) patients had absent cardiac activity.**Conclusion:**Vaginal bleeding in the first trimester of pregnancy is a common obstetric problem. Ultrasound has become a valuable aid in the diagnosis and prognosis of various causes of bleeding per vaginum in first trimester of pregnancy. Ultrasound positively helps in accessing the continuation of pregnancy, timely intervention for abnormal pregnancy and avoiding unnecessary intervention in those cases who do not need them. In the above study it was demonstrated that it played an important part in diagnosing the causes of vaginal bleeding during first trimester of pregnancy.

Keywords: Bleeding, Vagina, Ultrasonography & Pregnancy.

Introduction

First trimester bleeding is any vaginal bleeding during the first three months of pregnancy i.e.till 12 weeks[1].Vaginal bleeding in the first trimester is frequently encountered situation causing anxiety to the patient and obstetrician alike. First trimester is a very crucial period of pregnancy having a high risks of pregnancy loses[2].Whenever the patient comes to clinician with vaginal bleeding during the first trimester of pregnancy it often becomes difficult to diagnose the exact cause of bleeding, hence ultrasonography has proven to be a major tool for diagnosis, viability of the fetus and also early diagnosis of the life threatening condition like ectopic pregnancy therefore helpful in proper management of the patient.

Ultrasonography has revolutionized the management of early pregnancy complications. Fortunately with the gradual advancement of technology since 1958, sonography can now be used to find the exact causes of bleeding so that appropriate therapeutic measures can be undertaken at the earliest possible time.Ultrasound is non invasive, safe, accurate, cost effective, available at remote places and without hazards of radiation has gained wide acceptability, as an integral part of basic investigative procedures[3].It helps to determine whether pregnancy is intrauterine or ectopic; confirm cardiac activity; define the cause of vaginal bleeding and pelvic pain in first trimester; estimate the gestational age, mean sac diameter, embryonic pole length, crown – rum length, yolk sac; evaluate a suspected hydatidiform mole and to diagnose or evaluate multiple gestation[4].The most common indication for emergency referral in early pregnancy is vaginal bleeding[5].Vaginal bleeding during early gestation occurs in 20-25% of pregnant women[6].The three major causes of bleeding in first trimester are threatened abortion(47%), ectopic pregnancy(4.67%) and gestational trophoblastic disease (1.87%). Other causes are complete abortion (12%), incomplete abortion (8.41%), missed abortion (11%), subchorionic hematoma, intrauterine fetal demise[7].

*Correspondence

Dr. Vimal Kishore Bhagat

Associate Professor,Department of Community Medicine, Srinivas Institute of Medical Science and Research Centre, Mangalore, Karnataka, India

E-mail: drarchb@gmail.com

Material & Method

This prospective study was done in the Department of Radiodiagnosis & Obstetrics and Gynaecology of Mahatma Gandhi Medical College & M.Y. Hospital, Indore, Madhya Pradesh, India after getting approval by ISRB (Institutional Scientific Review Board).

A total of 100 patients who were referred to our department with clinical history of positive urine pregnancy test and vaginal bleeding during first trimester of pregnancy from April 2019 to October 2020 after written consent and PCPNDT registration were assessed. Various causes of vaginal bleeding confirmed by transabdominal and transvaginal ultrasound and beta human chorionic gonadotropin testing aid was done.The data will be analyzed by calculating the sensitivity, specificity, positive predictive

value, negative predictive value and diagnostic accuracy of the techniques.

Inclusion criteria:

1. Patients presenting from first day of last menstrual cycle to 12 weeks of pregnancy with positive urine pregnancy test with clinical history of bleeding per vagina are included in the study.
2.Patients of age groups 18-45 years will be included in the study.

Exclusion criteria:

1.Women of reproductive age with amenorrhoea with negative urine pregnancy test.
2.All the non-obstetrical causes of vaginal Bleeding.
3.All patients with amenorrhoea more than 12 wks and those who refuse to undergo PC & PNDT registration.
4.Bleeding per vaginum due to recently taken abortifacient.

Statistical Analysis:

1. Data were tabulated in the Microsoft Excel sheet, for the analysis of data.
2. Further depiction of data was done in the form of various tables and charts.
3. SPSS was used to analyze the data.
4. Appropriate statistical tests like sensitivity, specificity and measurement of agreement like Cohen's Kappa were applied.
5. P-values of <0.05 were considered statistically significant.

Results

Table 1: Distribution of cases according to age group

Age (in Years)	Number of cases (N)	Percentage(%)
18-20	15	15
21-25	42	42
26-30	31	31
31-35	12	12
Total	100	100

As shown in the above chart and table, study group age ranged from 18 to 35 years which show that most of the patients belongs to age group of 21 to 25 years making 42%. 31(31%) patients belongs to 26 to 30 years, 15(15%) patients to 17 to 20 years and the least common age group was between 31 to 35 years constituting 12(12%) patients. The mean age group is 24.00 (SD= 3.16).

Table 2: Clinical findings in first trimester vaginal bleeding

Clinical findings		Number of cases(N)	Percentage(%)	Total
Pain in abdomen	Present	64	64	100
	Absent	36	36	
Duration of bleeding(days)	1-2	25	25	100
	3-4	38	38	
	5-6	20	20	
	7-8	12	12	
	>9	5	5	

In present study 64(64%) patients presented with pain abdomen before, during or after bleeding. Out of 5 ectopic pregnancies all were associated with pain abdomen. Out of 6 cases of inevitable pregnancies 4 cases were associated with pain abdomen. Out of 40 cases of threatened abortion 20 (50%) patients, 17 cases of incomplete abortion 8(47%) patients, 13 cases of missed abortion 6(46%) patients, 4 cases of molar pregnancy 2(50%) patients, 5 cases of subchorionichaematoma 4(80%) and 10 cases of complete abortion presented with pain in abdomen.The duration of bleeding ranges from 1 to 9 days with majority for 3-4 days in 38(38%) patients with bleeding. Least common was >9 days constituted 5(5%) patients. 25(25%) patients presented with 1-2 days of bleeding, 20(20%) patients with 5-6 days and 12(12%) patients presented with bleeding for 7-8 days.

Table 3: Clinical diagnosis in patients with bleeding per vagina

Causes	Number of cases(N)	Percentage(%)
Threatened abortion	40	40
Incomplete abortion	17	17
Missed abortion	13	13
Complete abortion	11	11
Inevitable abortion	7	7
Molar pregnancy	6	6
Ectopic pregnancy	6	6
Total	100	100

On the basis of clinical diagnosis in patients with bleeding per vaginum during first trimester of pregnancy maximum 40(40%) patients were diagnosed as threatened abortion, while 17(17%) patients as incomplete abortion , 13(13%) patients as missed abortion , 11(11%) patients as complete abortion , 7(7%) patients as inevitable abortion, 6(6%) patients as molar pregnancy, 6(6%) patients as ectopic pregnancy .

Table 4: A ultrasonographic findings in uterine pregnancy

Findings	Present		Absent	
	Number of cases(N)	Percentage(%)	Number of cases(N)	Percentage (%)
Gsac	62	65.26	33	34.74
Yolk sac	44	46.31	51	53.68
CRL	38	40	57	60
Cardiac Activity	9	.09	86	90.52

Above table and graph shows the study of 95 patients with intrauterine pregnancy showing G-sac in 62(65.26%) cases and was absent in 33(34.74%) cases. 44(46.31%) shows yolk sac and were absent in 51(53.68%). CRL was found 38(40%) and were absent in 57(60%). Cardiac activity was seen in 9(9.48%) patients and 86(90.52%) patients had absent cardiac activity.

Discussion

Bleeding per vaginum in the first trimester pregnancy is one of the most common obstetric problems. Nearly twenty five percent (25%) of all pregnant women presents with history of bleeding during first trimester. By mere clinical history and examination definitive diagnosis is usually not possible. The causes of vaginal bleeding varies and it covers a spectrum of conditions ranging from viable to non-viable pregnancy. Ultrasonography has opened new dimensions in early pregnancy bleeding so that specific treatment, medical or surgical, can be accordingly instituted at the earliest. Accurate diagnosis of nature of the pregnancy can avoid unnecessary hormonal or invasive treatment and prolonged hospitalization. Ultrasound is a non-invasive, safe, cost-effective, easily available imaging modality, without the use of ionizing radiation. It has gained wide acceptability,as an integral part of basic imaging modalities. With USG, a normal pregnancy with excellent chance for a viable birth could be differentiated from a pathological pregnancy which warrants an immediate termination. A woman, who presents with poor history,posses a diagnostic challenge both to the obstetrician and the sonologist. Clinical history and pelvic examination are inadequate in assessing the condition and the prognosis. Ultrasound (both transabdominal and transvaginal) plays an important role in the evaluation of the causes of the first trimester bleeding, prognosticate and predict the status of the pregnancy.Most of the patients 64%(64 out of 100 cases) in our study presented with complaints of pain in abdomen during first trimester of pregnancy along with vaginal bleeding among which most of the cases 38%(38 out of 100 cases) had duration of bleeding for atleast 3-4 days. Similarly, L.V. Khatod et al in 2017[1] in the study observed that pain in abdomen was most commonly seen associated complaint in majority 48(44.86%) of patients in their study during first trimester vaginal bleeding. Also, the most commonly observed duration of bleeding was for 3-4 days by Dr. Vidya 2016[8]and Iyer et al in 1992[9].

Conclusion

Ultrasound is a non invasive, safe, accurate, cost effective, available at remote places and without hazards of radiation has gained wide acceptability,as an integral part of basic investigative procedures. It helps to determine whether pregnancy is intrauterine or ectopic and hence early management of the patients in abnormal pregnancies.

Vaginal bleeding in the first trimester of pregnancy is a common obstetric problem. Ultrasound has become a valuable aid in the diagnosis and prognosis of various causes of bleeding per vaginum in first trimester of pregnancy. Ultrasound positively helps in accessing the continuation of pregnancy, timely intervention for abnormal pregnancy and avoiding unnecessary intervention in those cases who do not need them. In the above study it was demonstrated that it played an important part in diagnosing the causes of vaginal bleeding during first trimester of pregnancy.

References

1. Vas W, Suresh PL, Tang-Barton PL, et al. Ultrasono-graphic differentiation of cervical abortion from cervical pregnancy. J Clin Ultrasound. 1984;12(9);553–557.
2. Salma Chowdhury, Tanvirul Hasan, Mir Moyeedul Islam, Susmita Nargis,ABM Moniruddin.Sonological Evaluation of Causes of First Trimester Bleeding. 2019; 10(1):9
3. Awdhut Tiparse,Birwa Gandhi,Arpita Patel. Ultrasono-graphic evaluation of first trimester bleeding. Int J Reprod Contracept Obstet Gynecol. 2017 ;6(8):3614-3617.
4. Manik Mahajan,Poonam Sharma,Sonika Gupta. Ultra sono graphic Evaluation of First Trimester Bleeding and its Clinical Assessment:A Prospective Study, JMSCR.2019;7(6) : 9
5. Timor-Tritsch IE, Monteagudo A, Santos R, et al.The diagnosis,treatment, and follow-up of caesarean scar pregnancy. Am J Obstet Gynecol. 2012;207(1):44.e1–e13.
6. Everett C. Incidence and outcome of bleeding before the 20th week of pregnancy: prospective study from general practice. Bmj, 1997; 315(7099):32-34.
7. Mamatha Shivanagappa,Sneha Gubbi Sagar,Nandish Manoli. Ultrasound Evaluation of Vaginal Bleeding in First Trimester of Pregnancy:A Comparative Study with Clinical Examination. International Journal of Scientific Study .2015 ; 3(5):9
8. Vidya A. Thobbi, Gururaj Deshpande, Uma A Salma Afreen and RumaNooreen: Ultrasonographic evaluation of first trimester vaginal bleeding, Al Ameen J Med Sci; 2016;9(2):1
9. Iyer LJ, Bhattacharya M. Role of ultrasonography in early pregnancy complications. J Postgrad Med 1992;38:115-6.

Conflict of Interest: Nil
Source of support: Nil