http://jmscr.igmpublication.org/home/
ISSN (e)-2347-176x ISSN (p) 2455-0450
crossref DOI: https://dx.doi.org/10.18535/jmscr/v7i12.52

IGM Publication
Journal Of Medical Science And Clinical Research
An Official Publication Of IGM Publication

Need of Sonography in Vaginal Bleeding in Early Pregnancy; As a Primary Investigation

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Abstract
Objective: *Compare the diagnostic efficacy of ultrasound and clinical diagnosis in finding etiology of vaginal bleeding in early months of pregnancy.*
Material and Methods: *104 cases of bleeding per vaginum during pregnancy upto 20th weeks were evaluated clinically and ultrasonography for one and half year. Diagnostic efficacy of both were analyzed statistically.*
Result: *Diagnostic accuracy of ultrasongraphy is 93.26% as compared to clinical accuracy of 56.73%. Ultrasound proved to be more accurate with a significant p value of < 0.5 in evaluating ectopic pregnancy. In cases of threatened abortion USG having better sensitivity and specificity than clinical diagnosis, but difference is significant for specificity only. USG can predict the prognosis of threatened by assessing risk factor. Specificity of USG is low in molar pregnancy than clinical diagnosis. In diagnosing early pregnancy failure comprises of blighted ovum, molar pregnancy, missed, incomplete, complete and inevitable abortion, USG having better sensitivity and specificity than clinical diagnosis with a significant p value of < 0.001.*
Conclusion: *Even in the era of technology Importance of history and clinical examination could never be negated, but the team approach with use of ultrasound not only improves the diagnostic accuracy, but also helps us to have a better and direct insight of pathophysiology of early pregnancy complication and better management.*
Keywords: *Abortion, blighted ovum, pregnancy, Ultrasound.*

Introduction

Vaginal bleeding in pregnancy not only interrupts joy of pregnancy, but also put a question mark on hope of continuation of pregnancy. Vaginal bleeding is seen in 25% of patients in first few weeks of pregnancy.[1] It is also a leading cause of presentation for emergency care during early pregnancy which at times taxes the mind of obstetrician. Up till recent past the traditional method of management was in practice depending solely upon history, clinical examination and urine pregnancy test. This method might not prove satisfactory in many conditions and may delay management. This delay might be of drastic outcome and may threaten life of patient as in cases of ectopic pregnancy.

The role of diagnostic ultrasound in evaluation of early pregnancy vaginal bleeding is principally for detection of fetal life, diagnosis of blighted ovum and visualization of retained product of conception. Hydatidiform mole and ectopic pregnancy may also be diagnosed earlier. Diagnostic implication of ultrasound in various condition of bleeding per vagina in early month of

pregnancy can be promising in evaluating these condition; helping the clinician to have appropriate management so that unnecessary occupation of hospital bed and morbidity can be reduced at the same time viable pregnancies can be managed with good outcome. Further studies in devloping countries scenario is needed so that we can have our own evidence based management protocol.

Nature of Study– Prospective study.

Aim of the Study- Compare the diagnostic efficacy of ultrasound and clinical diagnosis in finding etiology of vaginal bleeding in early months of pregnancy and evaluating role of ultrasound in predicting outcome of these pregnancy.

Material and Methods

Inclusion Criteria

All consecutive Cases of bleeding per vaginum during pregnancy up to 20th week were selected for the study from those attending obstetrics and gynecology outpatient department and labour room of North eastern Indira Gandhi regional institute of health and medical sciences (NEIGRIHMS) in a study period of one year six month

Exclusion Criteria– Following patients were excluded from the study

Known cases of coagulopathy, Patient not sure of her last menstrual period. Patient having prior irregular prolonged cycle, Patient having dilation and evacuation or dilation and curettage prior to ultrasonographic examination.

Provisional clinical diagnosis was made in every case

Ultrasonographic examination was done with abdominal convex probe and /or vaginal probe to every patient under the study using following ultrasound machine

1. LOGIQ P5, MODEL NO-5372509 (GE ULTRASOND KOREA)
2. HEWLETT PACKWARD, MODEL NO - 5R5315 (M2410B ULTRASOUND SYSTEM).

According to the cases final diagnosis was confirmed clinicopathologically during operative interventions and with the help of histopathology report or after follow up in to 28th weeks of pregnancy during definitive management as required in threatened abortion.

Ultrasound findings were correlated with clinical and final diagnosis and results are analyzed statistically.

Results

We have followed 104 cases of early pregnancy complication .General obstetrical parameter of study group are given below

Table 1: Duration of Amenorrhea

Duration of Amenorrhea	Percentage
5-<9 weeks	41.34
9-<13 weeks	39.42
13- <17 weeks	15.38
17- <20weeks	3.84
total	100

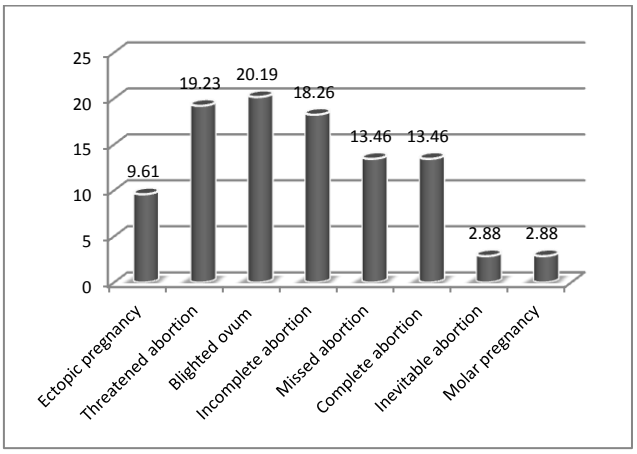
In our study it has been found that in maximum incidence of vaginal bleeding(41.34%) occurred between 5 to <9 weeks of gestation.

Table 2: Age distribution of subjects studied

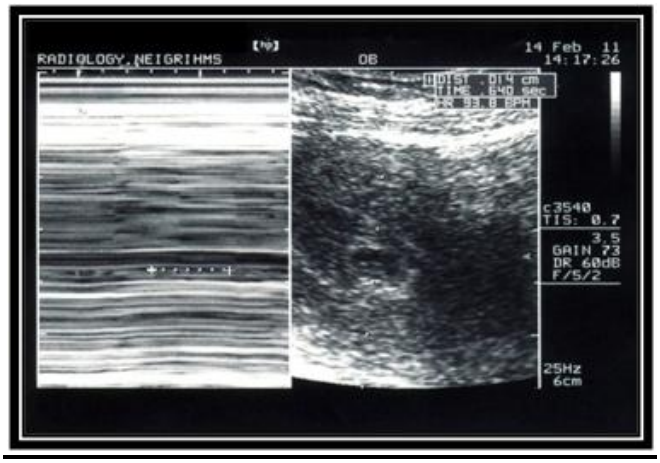
Age in Years	Percentage
16 – 20	8.65
21 – 25	34.62
26 – 30	35.58
31 – 35	12.50
36 – 40	6.73
41 – 45	1.92
Total	100.0

The highest incidence of bleeding per vagina during early months of pregnancy was found in the age group of 26 to 30 years (35.58%).The possible explanation could be that 21 to 30 years of age comprises the peak reproductive age in female in our country.

Bar 1: Final etiopathological diagnosis of early vaginal bleeding of 104 cases given below.



Blighted ovum constituted (20.19%) maximum no of cases.



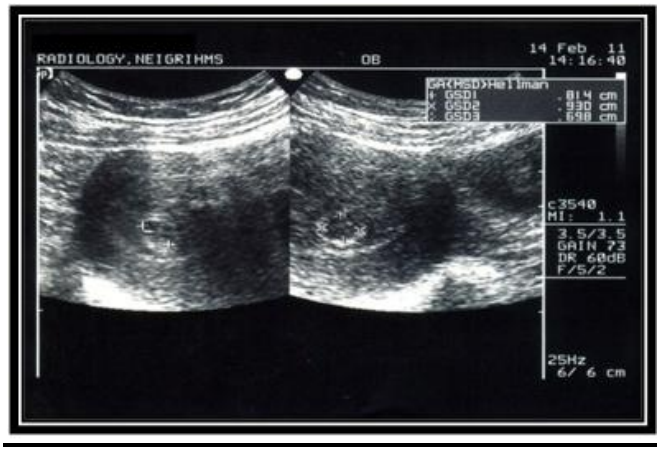


Image 1: Ultrasound image of Threatened abortion showing risk factor (less liquor and bradycardia)

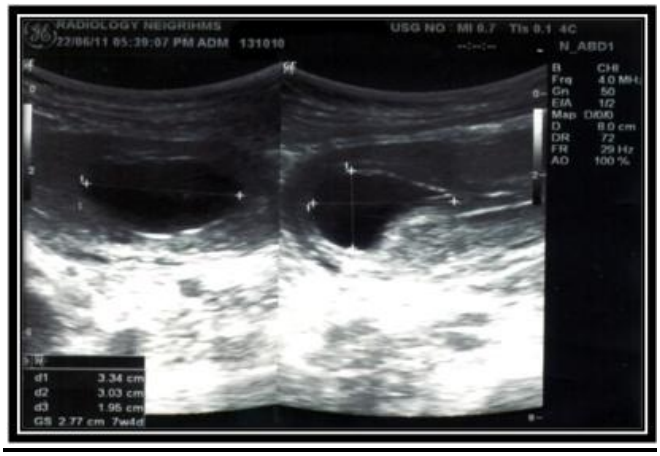


Image 2: Ultrasound image of blighted ovum

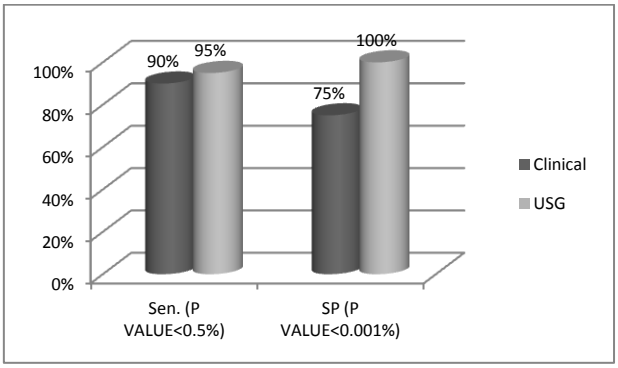
Discussion

Although in most cases of early pregnancy complication USG having better sensitivity and specificity than clinical diagnosis but to analyze statistically and compare diagnostic accuracy of two test, we have grouped early pregnancy complication in three groups.

1. viable intrauterine pregnancies (threatened abortion)
2. Ectopic pregnancy/ gestation
3. Early pregnancy failure (Nonviable intrauterine pregnancy)- this comprises of missed abortion, blighted ovum, incomplete abortion, complete abortion, molar pregnancy, inevitable abortion.

1. Threatened abortion – threatened abortion is one of the type of early pregnancy complication, where hope of continuation is always a positive aspect.

Bar 2: Comparison between diagnostic accuracy of clinical and USG diagnosis in diagnosing threatened abortion



As we can see in diagnosing threatened abortion USG having better diagnostic performance than clinical with significant difference of specificity (p value < 0.001). Out of 20 cases 15 continued up to live birth, while 5 cases progress to live abortion. out of five cases four cases having clinical risk factor of heavy bleeding with pain .ultrasound shows unfavourable risk factor; in two there was bradycardia, in one there was decreased liquor and in one there was discrepancy between CRL and menstrual age.

2. Ectopic Pregnancy-Diagnosing as well as excluding ectopic pregnancy timely is major challenge to avoid morbidity and mortality. So we have compared both in cases of ectopic pregnancy.

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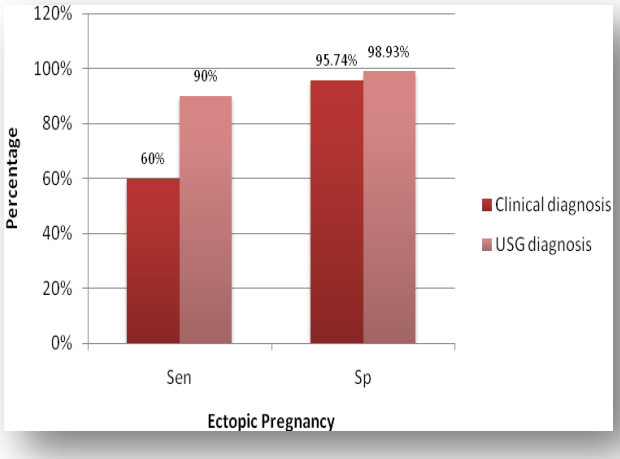
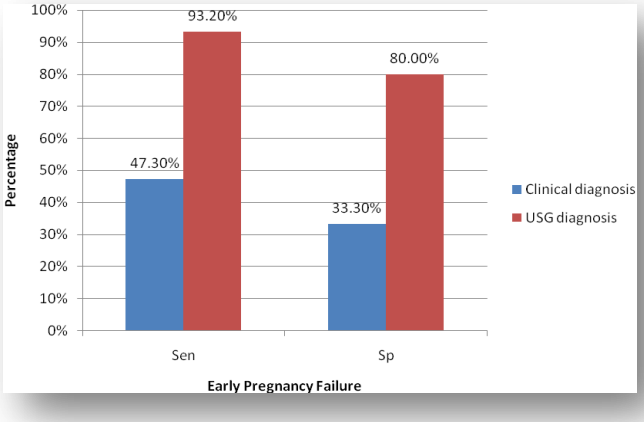
Bar 3: Comparison between clinical and USG diagnosis in ectopic pregnancy



Combining sensitivity and specificity of both test, efficacy of USG diagnosis is better than clinical diagnosis with p value significant (p <0.05)

3. Early Pregnancy Failure- (blighted ovum, molar pregnancy, inevitable, missed, incomplete and complete abortion). although in these cases we should not hope for viability, but accurate diagnosis is of utmost concern for reducing morbidity

Bar 4: Comparison of USG with clinical diagnosis is case of early pregnancy failure



So comparing diagnostic efficacy of USG with clinical diagnosis in diagnosing early pregnancy failures hows better sensitivity and specificity with significant difference (P value< 0.001)

Blighted ovum is not a clinical diagnosis. So all cases of blighted ovum diagnosed and followed by USG and with the help of histopathology.

Although incidence of molar pregnancy is very less to comment for comparison about performance of two tests, but out of three cases of molar pregnancy two cases diagnosed correctly by USG. But two cases of missed abortion were misdiagnosed as molar pregnancy by USG. These two cases were correctly diagnosed retrospectively by histopathology.

Only one case of molar pregnancy is diagnosed clinically out of three, but no false positive diagnosis of molar pregnancy was made clinically. So specificity of USG was low in cases of molar pregnancy as compared to clinical diagnosis

Table 3: We have compared the clinical and sonographic diagnostic accuracy of present study with other studies

STUDY	ACCURACY OF CLINICAL DIAGNOSIS	ACCURACY OF USG DIAGNOSIS
Iyer[2] et al (1992)	52%	92%
Ali [3]et al (2005)	59.8%	96%
Present study	56.73%	93.26%

Overall diagnostic accuracy of clinical and sonographic diagnosis of our study is 56.73% and 93.26% respectively. This is comparable with other studies by Iyer[2] et al and Ali[3] et al.

The greatest contribution that ultrasound has offered is detection of blighted ovum, which is otherwise almost impossible to detect clinically. Diagnosing blighted ovum not only helps to avoid battery of investigation to know the cause of early pregnancy failure, but patient got better satisfaction and relief from agony after knowing the scientific explanation of early pregnancy failure.

In Clinically suspected cases of threatened abortion, showing fetal heart pulsation not only confirm the viability, but also gives a tremendous psychological boost to the patients.

Our study shows we can predict the prognosis of threatened abortion clinically and more precisely by ultrasound. heavy bleeding is associated with more high risk of progression into abortion ,this is supported by study of Puscheck et al(2010).[4]

Ultrasound can assess risk factor like less liquor, bradycardia, descrepancy in gestational age which are helpful in predicting the prognosis of the pregnancy in threatened abortion. This is in agreement with studies that presence of any of three risk factors (fetal bradycardia, discrepancy between gestational sac and crown to rump length, and discrepancy between menstrual and sonographic age by more than one week) increases the rate of abortion from 6% when none are present to 84% when all three are present.[5]

Diagnosing non viable pregnancy in suspected cases of threatened abortion save the patient from futile progesterone support and hospital stay.

In case of atypical presentation of ectopic pregnancy, where clinician is helpless, timely diagnosis by USG help in avoiding mortality and morbidity associated with ruptured ectopic.

Diagnosing complete abortion in suspected case incomplete and missed abortion helps the clinician to avoid unnecessary surgical curettage.

Sensitivity of sonography is good in cases of molar pregnancy, but specificity is less as some missed abortion can be misdiagnosed as molar pregnancy, these cases can be ruled out with histiopathology.

Conclusion

So our study gives us a message that although even in era of technology, importance of clinical diagnosis cannot be overlooked but team approach with use of ultrasound and histopathology should be advisable. This team approach not only improves the diagnostic accuracy, but also helps us to have a better and direct insight of pathophysiology of early pregnancy complication and better management.

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