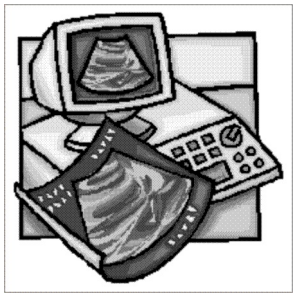
ORIGINAL PROF-818

# ULTRASONOGRAPHY;
## ITS VALUE IN THE MANAGEMENT OF FIRST TRIMESTER VAGINAL BLEEDING



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**ABSTRACT... Objective:** To find the value of ultrasound in the management of first trimester vaginal bleeding. **Material and Methods:** All patients reporting with vaginal bleeding in obstetrics and gynaecology Unit-III, Nishtar Hospital, Multan were included in the study. Non-pregnant patients and patients with vaginal bleeding due to the cause other than conception were excluded. After history, clinical examination and pregnancy test, ultrasonography was done with abdominal convex probe (3.5 Mhz) and/or vaginal (5 Mhz) probe to every patient. **Results:** Overall incidence of first trimester vaginal bleeding was 12.23%. Disparity between clinical and ultrasonic diagnosis was 17.3% in cases of incomplete abortion, 11.6% in cases of inevitable abortion, 9.7% in cases of threatened abortion, 3.8% in cases of missed abortion and 1.9% in cases of blighted ovum and 1.9% in cases of molar pregnancy. The confirmation of diagnosis after histopathology of surgically obtained specimen revealed least percentage of misdiagnosis on ultrasound evaluation. While in ectopic pregnancy no disparity found on clinical, ultrasonographic and surgical results, but it was misleading as only late cases with ruptured ectopic pregnancy and obvious clinical signs and symptoms were referred to the hospital. Otherwise USG would have shown increased sensitivity and specificity. **Conclusion:** Study has confirmed the superiority of USG scanning over conventional methods in earlier and more precise diagnosis and thus better treatment of patients having first trimester vaginal bleeding. It is more accurate, safe, non-invasive and quick in diagnosis and management. It prevents from undue surgical intervention as well as undue delay in surgery when required. Once bleeding has occurred repeat pregnancy test should he ignored and better not done at all. Thus USG should he an important diagnostic tool in every emergency unit but importance of clinical diagnosis cannot be overlooked.

## INTRODUCTION

Vaginal bleeding during first trimester has been established to occur in 16-20% of all pregnant women[1,2], while frequency of spontaneous abortion has been

traditionally estimated as 15-20%[3,4]. Most emergency admission to gynecological departments is abortions of one sort or the other. The incidence of first trimester threatened abortion is 30-40% of pregnancies. Other obstetric causes include ectopic and molar pregnancy. Overall incidence of ectopic pregnancies is 16/1000 pregnancies. The incidence of molar pregnancies is 1:1500 in USA.

About 15-20% of known pregnancies terminate in spontaneous abortion. About 80% of spontaneous pregnancy losse occur in first trimester. Incidence decreases with each gestational week. Only 3.2° % of patients experience a pregnancy loss after 8 weeks of gestation[5].

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.

Since the introduction of diagnostic ultrasound in obstetrical and gynecological practice there are revolutionary changes in the diagnosis and management of many condition including management of first trimester vaginal bleeding. Ultrasound is safe for the patients, foetus and ultrasonographer. It is non-invasive, painless and real time. The role of diagnostic ultrasound in evaluation of first trimester 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. The ultrasound can detect the intrauterine gestational sac after only 5 weeks of amenorrhoea or even earlier. Vaginal bleeding in first trimester is common and very worrisome to the patient. A sonogram can soothe maternal fears a lot by showing a normal alive fetus. The earlier detection and thus early management of the condition responsible for first trimester bleeding has changed the traditional plans of management of this condition. Thus it has a definite role in reducing the maternal mortality and morbidity. This study was done to find the value of ultrasound in the management of first trimester vaginal bleeding.

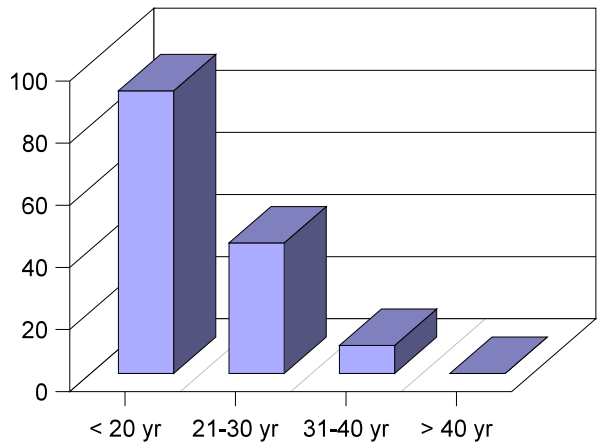
## MATERIAL AND METHODS

All the patients reporting with the first trimester vaginal bleeding in obstetrics and gynaecology unit-III, Nishtar Hospital, Multan were included in the study. After history, clinical examination, and pregnancy test, ultrasonography was offered with abdominal convex probe (3.5 Mhz) and/or vaginal (5 Mhz) probe to every patient.

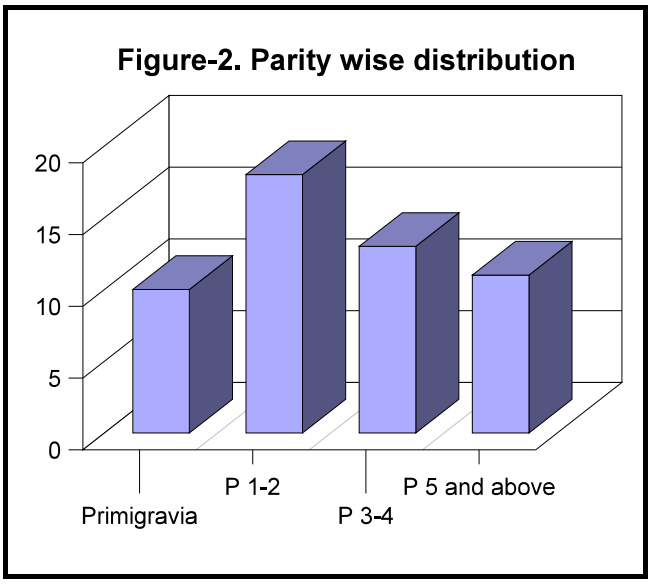
## RESULTS

425 patients were admitted in Gynecology and Obstetrics department of Unit-III during six months. Out of which 52 patients were with the first trimester vaginal bleeding. The overall incidence of first trimester vaginal bleeding was 12.23%.

**Figure-1. Age Distribution**




Among 52 patients with first trimester vaginal bleeding 42 (80.76%) were between the age of 20-30 years, 9 (17.80%) were between 31-40 years. No patient above 40 years was seen as shown in figure-1



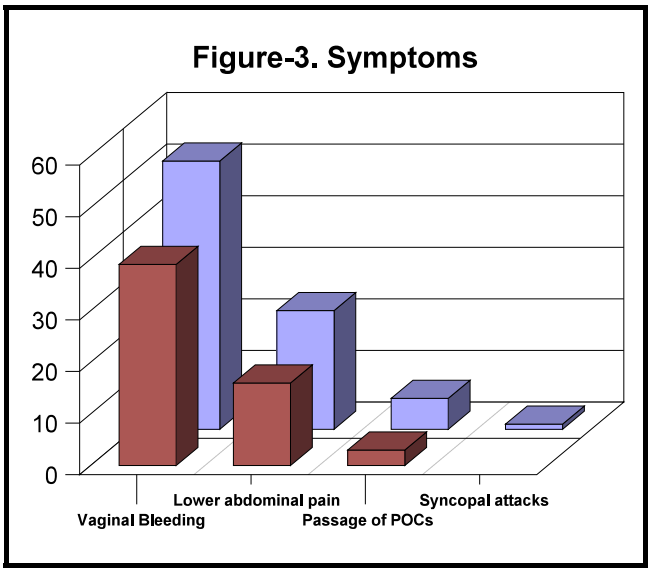
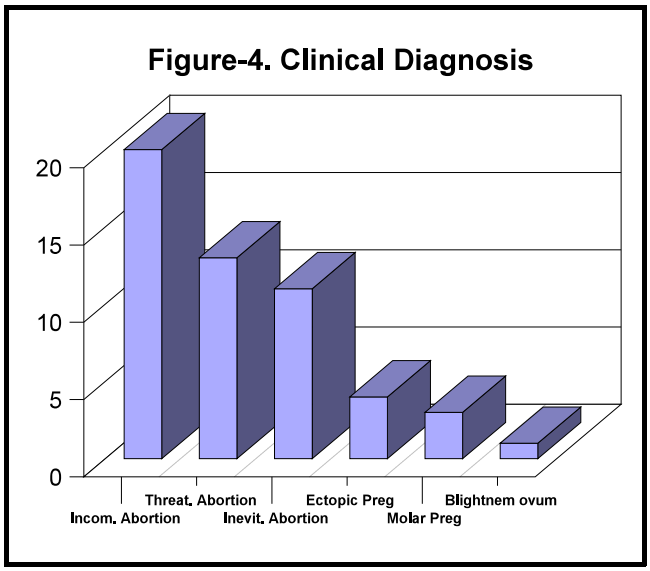




Figure-2 shows that out of 52 patients maximum patients 18 (34.61%) were in Parity. 1-2 group. Then 13 (25%) of patients were in Parity.3-4. Minimum number of patients was primigravida i.e. 10 (19.23%).

History of passage of clots found in 39 (75%) patients. Lower abdominal pain found in 23 (44.23%) patients and history of passage of POC's found in 6 (11.53%) patients as shown in figure-3.

Figure-4 shows that on clinical grounds incomplete abortion was found in 20 (38.46%). Threatened abortion diagnosed in 13 (25%) and inevitable abortion in 11 (2 1. 15%). Ectopic pregnancy suspected in 4 (7.49%) and molar pregnancy in 3 (5.76%). Blighted ovum was not diagnosed clinically.




On ultrasonography 29 (55.76%) cases were diagnosed as incomplete abortion while 8 (15.38%) cases were of threatened abortion. Ectopic pregnancy was diagnosed in 4 (7.6%) cases and molar pregnancy in 2 (3.84%) cases.

There were 3 (5.76%) cases with missed abortion and 1 (1.92%) case of blighted ovum. In case of incomplete abortion 3 patients were found negative for urine pregnancy test, while it was negative in 2 out of 3 patients of missed abortion. So, undue delay in the management of these cases was quite evident if it were only pregnancy test to be relied upon as shown in table-I.

The diagnosis, which was made ultrasonographically, was not found consistent with that made on clinical ground, thus changing the plan of management in individual cases (Table-II).

| Table-I ULTRASOUND DIAGNOSIS AND PREGNANCY TEST | | | |
|---|---|---|---|
| **Diagnosis** | **No of patients** | **%age** | **+ve pregnancy test** |
| Incomplete abortion | 29 | 55.76 | 26 |
| Threatened abortion | 8 | 15.38 | 8 |
| Inevitable abortion | 5 | 9.61 | 5 |
| Ectopic pregnancy | 4 | 7.64 | 4 |
| Molar pregnancy | 2 | 3.84 | 1 |
| Missed abortion | 3 | 4.76 | 2 |
| Blightened ovun | 1 | 1.92 | 1 |

| Table-II COMPARISON BETWEEN CLINICAL AND UTRASONOGRAPHIC DIAGNOSIS | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Clinical diagnosis** | **No of cases** | **Incomplete abortion** | **Threatened abortion** | **Inevitable abortion** | **Ectopic preg** | **Motor preg** | **Missed abortion** | **Blightened ovum** | **Complete abortion** |
| Incomplete abortion | 20 | 16 | 2 | - | - | - | 2 | - | - |
| Threatened abortion | 13 | 5 | 6 | - | - | - | 1 | 1 | - |
| Inevitable abortion | 11 | 6 | - | 5 | - | - | - | - | - |
| Ectopic preg | 4 | - | - | - | 4 | - | - | - | - |
| Molar preg | 3 | 1 | - | - | - | 2 | - | - | - |
| Missed abortion | 1 | 1 | - | - | - | - | - | - | - |
| Blightened ovum | - | - | - | - | - | - | - | - | - |
| Complete abotion | - | - | - | - | - | - | - | - | - |
| Total | 53 | 29 | 8 | 5 | 4 | 2 | 3 | 1 | - |

Out of 52 patients, 8 (15.38%) of threatened abortion, who were managed conservatively. 37 (71. I 5%) had ERPOC. Laparotomy for ectopic pregnancy done in 4 (7.69%). Suction and curettage for molar pregnancy done in 2 (3.84%) as shown in table-III.

The comparison between clinical diagnosis and by ultrasonographic diagnosis reveals disparity. In incomplete abortion disparity is 17.3%, inevitable abortion 11.6%, threatened abortion it was 9.7%. No disparity in case of ectopic pregnancy. Missed abortion showed 3.8% of disparity (Table-IV).

| Table -III TYPES OF MANAGEMENT | | |
|---|---|---|
| **Procedure** | **No of Pts** | **%age** |
| Evacuation of retained products of conception (ERPOC) | 37 | 71.15 |
| Conservative | 08 | 15.38 |
| Laparotomy | 04 | 07.49 |
| Suction and curettage | 02 | 03.84 |
| Dilation and curettage | 01 | 01.92 |
| Missed abortion | 01 | 01.92 |
| Blightened ovum | - | - |

| Table -IV DISPARITY BETWEEN CLINICAL AND ULTRASONOGRAPHIC DIAGNOSIS | | | |
|---|---|---|---|
| **Diagnosis** | **By clinical examination** | **By ultrasound** | **Disparity** |
| Incomplete abortion | 20 (38.4%) | 29 (55.76%) | 17.3% |
| Threatened abortion | 13 (25.0%) | 08 (15.30%) | 09.6% |
| Inevitable abortion | 11 (21.2%) | 05 (09.6%) | 11.6% |
| Ectopic pregnancy | 04 (07.6%) | 04 (07.6%) | - |
| Molar pregnancy | 03 (05.7%) | 02 (03.8%) | 1.92% |
| Missed abortion | 01 (1.92) | 03 (05.7%) | 03.8% |
| Blighted ovum | - | 01 (1.92%) | 1.92% |

Out of 52 patients, 8 were treated conservatively (with threatened abortion on USG) and 44 had some surgery. After surgery, diagnosis was confirmed. Incomplete abortion was found in 30 (57.69%) patients, inevitable abortion in 4 (7.69%) patients. Ectopic pregnancy was confirmed in 4 (7.69%) patients. Two (3.84%) cases of molar pregnancy and 1 (1.92%) blighted ovum were confirmed as shown in table-V.

| Table-V CONFIRMATION OF DIAGNOSIS ON SURGERY | | |
|---|---|---|
| **Procedure** | **No. of patients** | **% Age** |
| Incomplete abortion | 30 | 57.69 |
| Inevitable abortion | 04 | 07.69 |
| Ectopic pregnancy | 04 | 07.69 |
| Missed abortion | 03 | 05.76 |
| Molar pregnancy | 02 | 03.84 |
| Threatened abortion | 01 | 01.92 |

| Table-VI PERCENTAGE OF MISDIAGNOSIS | | | | |
|---|---|---|---|---|
| **Procedure** | **Clinical** | | **Ultrasound** | |
| | **Surgical** | **Clinical** | **Surgical** | **USG** |
| Incomplete abortion | 10 | 19.3% | 01 (1.92%) | - |
| Inevitable abortion | 07 | 13.5% | 01 (1.92%) | - |
| Ectopic pregnancy | - | | - | |
| Missed abortion | 03 | 03.8% | - | |
| Molar pregnancy | 01 | 1.92% | - | |
| Threatened abortion | 01 | 1.92% | - | |

Clinically the percentage of misdiagnosis was quite high in cases of incomplete abortion 19.3% and inevitable abortion 13.5%. While on USG it was 1 .9% each for incomplete and inevitable abortion. As for as missed abortion was concerned only one out of three is diagnosed clinically, while on ultrasound all the three were diagnosed. So USG was found to be more specific in those cases as shown in table-VI.

## DISCUSSION

The introduction of ultrasonography in clinical practice has revolutionized the diagnosis and management of first trimester vaginal bleeding. The study further confirmed the relative superiority of ultrasound examination over the conventional methods in this regard[6,7,8].

However, the importance of history and clinical examination could never be negated[9]. In our country, sophisticated equipments can never be offered to every pregnant female with complication. It is, therefore, required that the emphasis should be made on better clinical training of the doctors concerned, so that in the conditions of non-availability of these equipments, patients can be managed accordingly.

According to Longley and Sabbagha it must serve as a starting point. In addition, knowledge of the gynaecologists suspicions is essential and serves as a guide for the sonographer conducting the examination[10]. But it must be kept in mind that the clinical approach though helpful, is of limited value in the diagnosis and thus the management of first trimester complicated pregnancies[6,11]. The solution to the problem lies in obtaining the help of ultrasound scan in this context. That is why it has been called as obstetrician stethoscope[6].

First trimester vaginal bleeding occurs in approximately 16-20% of pregnancies and is a frequent gynaecological cause of emergency department admission[12]. The incidence of first trimester vaginal bleeding in our unit at Nishtar Hospital, Multan during the said period was 23.11%, out of 425 patients. The incidence was slightly high but this was not a true incidence for a specific population, because Nishtar Hospital, Multan is a tertiary referral center and selected cases are referred to this hospital. In this study main emphasis was made on the role of ultrasonography in the management of first trimester vaginal bleeding.

In a study done by Drrumrn[8], the ultrasonic diagnosis of threatened abortion was 32.5%, incomplete abortion was 28.1%, complete abortion was 17.4%, blighted ovum was 11.1%, missed abortion was 10.8%, and molar pregnancy was 0.1%. In another study done in Holy family Hospital, Rawalpindi out of 142 patients of first trimester vaginal bleeding 57.74% were of threatened abortion, 27.5% were of blighted ovum, 9.15% were of missed abortion, 7.04% were of incomplete abortion and 0.7% were of ectopic pregnancy[6].

Personal communication of Sr. Shahida Zaidi, FCPS, who is running an ultrasound institute at Karachi, it was found that out of 64 patients with bleeding in first trimester of pregnancy seen in last quarter of 1996, 50% were threatened abortion, 6.24% were of incomplete abortion, 3.12% were of blighted ovum and 3.12% were of ectopic pregnancy while remaining were having fetus with no heart beat. In another study done at California USA at emergency department 70% of the patients were of threatened abortion, 6% were of ectopic pregnancy, 2% were of blighted ovum and 15 were of molar pregnancy[13].

While in our study ultrasound diagnosis revealed that out of the patients presented with first trimester vaginal bleeding 55.76% were of incomplete abortion, 15.38% were of threatened abortion, 9.16% were of inevitable abortion, 5.76% were of missed abortion, 1.92% were of blighted ovum, 7.64% were of ectopic pregnancy and 3.84% were of molar pregnancy. So all these studies confirmed that major share of first trimester vaginal bleeding goes to the abortion of either one or the other type.

In a study done at Lady Willington Hospital, Lahore in patients with first trimester abortion, the disparity between clinical and ultrasonic diagnosis was 10.3% in threatened abortion, 6.18% in incomplete abortion, and 4. 12% in cases of missed abortion. While in our study the disparity between clinical and ultrasonic diagnosis was 17.3% in cases of incomplete abortion, 11.6% in case of inevitable abortion and 9.7% in cases of threatened abortion, 3.8% in cases of missed abortion, 1.9% in cases of blighted ovum and 1.9% in case of molar pregnancy. The confirmation of diagnosis after histopathology of surgically obtained specimen revealed least percentage of misdiagnosis on ultrasound

evaluation. In cases of ectopic pregnancy no disparity on clinical and ultrasonic diagnosis obtained and same was proven on surgery even. But it was not true that clinical assessment has same specificity and positive predictive value as obtained on ultrasonography.

The result was misleading, as patients were referred only when it was too late and rupture of ectopic pregnancy had already occurred leading to obvious clinical signs and symptoms. Similarly in our study we could not find even a single case of complete abortion as patients were referred to the hospital only when conditions were deteriorating. In Pitzburgh School of Medicine, it was concluded that USG is a highly reliable test in the management of women thought to have complete spontaneous abortion. 98% of the patients detected on USG with empty uterus had uneventful recovery without curettage and 69% of patients with suspicions of retained product of conception were proved histopathologically positive[14].

Thus ultrasound prevents from undue surgical intervention as well as undue delay in surgery when it is required. After surgical intervention it was confirmed on histopathology of the specimen obtained that percentage of misdiagnosis was less with ultrasonography and only two cases were misdiagnosed out of 52 i.e. 3.8%. On the other hand the rate of misdiagnosis was 40.3% when relied upon conventional method only (21 out of 52 misdiagnosed).

The results obtained had shown clearly that ultrasonography was more sensitive and specific for the diagnosis and thus management of first trimester vaginal bleeding and were consistent with the results of other studies one in context[6,7,8,11,12].

## CONCLUSION

The study has further confirmed the superiority of ultrasound scanning over conventional methods in earlier and more accurate diagnosis and thus better treatment of patients having first trimester vaginal bleeding. It is more accurate, safe, non-invasive and quick in diagnosis and management of such cases. It can diagnose the threatened abortion positively and thus gives a tremendous psychological boost to the patients. Missed abortions, blighted ovum and incomplete abortions are reliably diagnosed in most cases long before the pregnancy test become negative. So these cases can be treated without undue delay.

Patients with complete abortions are accurately identified so that unnecessary curettage can be avoided. Similarly ectopic pregnancy and molar pregnancy are accurately identified and treated in time thus reducing morbidity and mortality of the patients in such cases. While on the other hand, history and clinical findings are often misleading in cases of first trimester vaginal bleeding. Once bleeding occurs the pregnancy test should be ignored or better not done at all. In our opinion, it is more than a stethoscope as it is providing direct visual aid for better management. It is recommended that ultrasonic aid might be provided to every emergency unit dealing with obstetrics and gynaecology for better outcome. However, the importance of clinical diagnosis cannot be overlooked.

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# Keep Your Face to the Sunshine and You Cannot See the Shadow

**Shuja Tahir**