

# ROLE OF ULTRASOUND IN THE MANAGEMENT OF FIRST TRIMESTER HAEMORRHAGE

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## SUMMARY

An analysis of 652 patients with first trimester haemorrhage is presented. The clinical, ultrasound and pathological findings are reviewed. The value and reliability of ultrasound scanning in demonstrating normally progressing pregnancies, missed abortion, complete abortion, ectopic gestation and vesicular mole is discussed. The study evaluates the usefulness of scan and its reliability in diagnosing accurately the aetiology of the bleed.

### Introduction

First trimester haemorrhage has been estimated to occur in 16% of all pregnant women (South and Naldrett, 1973); and it has been estimated that 10-20% of all pregnancies spontaneously abort (Scott, 1976; Donald, 1979).

To further assess the value of ultrasound in the management of first trimester bleeding and the subsequent outcome of affected pregnancies, a study was carried out at the Nowrosjee Wadia Maternity Hospital.

### Material and Methods

The sonar equipment used is the A.D.R. Diagnostic Ultrasound; and the "full bladder technique" was employed.

To determine the value of sonar, 652 cases who presented at the Nowrosjee Wadia Maternity Hospital from April 1984 to March 1985 with first trimester haemorrhage were analysed so as to com-

pare results in those who were scanned—286 patients (44%) against those who were not scanned—356 patients (56%).

### Results

Table I shows the clinical diagnosis made in 652 patients with first trimester haemorrhage.

A total of 286 (44%) patients were scanned. One hundred and seventy-two (70.5%) cases presenting with a clinical evidence of threatened abortion underwent a scan as compared to only 17 (8%) patients presenting as incomplete abortion; the remaining 194 (92%) patients with incomplete abortion being curetted immediately as an emergency procedure.

Table II shows the correlation between the presenting complaint and the scan diagnosis.

Standard literature implies that slight vaginal bleeding is indicative of a threatened abortion, whereas heavy painful bleeding with passing of clots is diagnostic of inevitable or incomplete abortion; but symptoms can often be misleading as seen from our study where only 55

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TABLE I

*Division of Patients into Unscanned/Scanned Groups on Basis of Clinical Diagnosis*

Clinical diagnosis	Unscanned group		Scanned group		Total No. of patients	
	Patients	%	Patients	%	Patients	%
Threatened abortion	72	29.5	172	70.5	244	38
Missed abortion	66	59.5	45	40.5	111	17
Incomplete abortion	194	92	17	8	211	32
Complete abortion/ Delayed period	34	55	28	45	62	10
Vesicular mole	—	—	9	100	9	1
Ectopic gestation	—	—	15	100	15	2
Total patients	356	56	286	44	652	

TABLE II

*Correlation Between Presenting Complaint and Scan Diagnosis*

	Threatened abortion	Missed abortion/ Incomplete abortion/ Blighted ovum	Complete abortion/ Delayed period	Vesicular mole/ Ectopic gestation
(1) Blood stained discharge: 104 patients (36%)	55 (53%)	32 (31%)	10 (10%)	7 (6%)
(2) Mild to moderate painless bleed: 125 patients (44%)	42 (34%)	56 (45%)	22 (18%)	5 (3%)
(3) Moderate to heavy painful bleed: 57 patients (20%)	12 (21%)	24 (42%)	20 (35%)	1 (2%)

(53%) patients who presented with slight blood stained discharge had a threatened abortion; and conversely as many as 12 (21%) patients who presented with profuse painful bleeding still retained a viable intrauterine pregnancy as confirmed on ultrasound.

Table III compares the clinical and the scan diagnosis in cases with threatened abortion.

Of the 172 patients who were clinically thought to have threatened abortion and underwent a scan the diagnosis was confirmed in 98 patients (57%). However in 62 patients (36%) the sonar revealed a missed or incomplete abortion requiring subsequent curettage. Also 8 patients (4.5%) demonstrated an empty uterine cavity, a finding consistent with complete abortion or delayed periods and these were soon discharged.

A solitary case of polyp thought to be a threatened abortion was diagnosed reliably on ultrasound.

Three cases were diagnosed as placenta praevia on sonar while 2 were twin gestations with only one foetus viable the other missed, proving that few cases of first trimester haemorrhage may be due to the death of one twin, the survivor continuing till term.

An accurate prediction of subsequent abortion was made in 3 cases, who showed either the gestational sac too low in the cervix or formation of a large retroplacental haematoma.

Of the 98 patients who were confirmed to be threatened abortion on scanning, 5 subsequently aborted within a week of the scan as against 8 patients in the unscanned group. Could a missed abortion be clinically misinterpreted and subsequently abort.

Table IV shows that amongst those diagnosed clinically as missed abortion, 34 patients (75.5%) were confirmed on ultrasound as missed abortion. In a solitary case a vesicular mole was diagnosed

TABLE III

*Ultrasonic Diagnosis in 172 Patients With Clinical Diagnosis of Threatened Abortion*

Ultrasound diagnosis	No. of patients	Per cent
Threatened abortion	98	57
Missed abortion/Blighted ovum	46	27
Incomplete abortion	16	9.5
Complete abortion/Delayed period	8	4.5
Vesicular mole/Ectopic gestation	3	1.5
Polyp	1	0.5
Total	172	

TABLE IV

*Ultrasonic Diagnosis in 45 Patients With Clinical Diagnosis of Missed Abortion*

Ultrasound diagnosis	No. of patients	Per cent
Threatened abortion	2	4.5
Missed abortion/Blighted ovum	34	75.5
Incomplete abortion	4	9
Complete abortion/Delayed period	4	9
Vesicular mole	1	2
Total	45	

on sonar, the uterine size being smaller than the period of gestation. The incidence of blighted ovum was 3%.

Only 17 patients (Table V) with a clinical diagnosis of incomplete abortion underwent an ultrasonic examination, the diagnosis being confirmed in 12 patients (71%). Here again a clinically missed vesicular mole was detected on sonar.

Twenty-eight patients (45%) with a clinical impression of complete abortion or delayed period were scanned. Twenty-six patients (93%) were confirmed to have an empty uterine cavity on ultrasound.

Two patients were curetted despite scan confirmation for persistent vaginal bleeding. The material on histology showed no products of conception.

Table VI correlates the histopathological result with the diagnosis of missed abortion in the scanned and unscanned group. It was found that a significantly higher number of patients i.e. 31 patients (42%) underwent an unnecessary curettage in the unscanned group with missed abortion ( $p < 0.05$ ).

A similar situation prevails in cases of incomplete abortion (Table VI) with a significantly higher number of unnecessary curettages being performed in the unscanned group i.e. 28 patients (40%) ( $p < 0.05$ ); thus exposing the patient to risk of anaesthesia, genital tract trauma and infection.

The pregnancy test was done in 38 patients with a clinical diagnosis of missed or complete abortion. All the 6 patients

TABLE V  
*Ultrasonic Diagnosis in 17 Patients with Clinical Diagnosis of Incomplete Abortion*

Ultrasound diagnosis	No. of patients	Per cent
Incomplete abortion	12	71
Complete abortion/Delayed period	4	23.5
Vesicular mole	1	5.5
Total	17	

TABLE VI  
*Correlating Histopathological Result With Diagnosis of Missed Abortion and Incomplete Abortion in Scanned and Unscanned Groups*

Histopathological result	Scanned Group				Unscanned Group			
	Missed abortion		Incomplete abortion		Missed abortion		Incomplete abortion	
	Patients	%	Patients	%	Patients	%	Patients	%
Negative	1	3	1	8	31	42	28	40
Positive	25	97	11	92	23	58	42	60

with a positive test were scanned showing 2 cases to be definitely missed abortion on ultrasound; thus showing that ultrasound makes a reliable diagnosis of missed abortion much before the pregnancy test can become negative.

TABLE VII

Average Stay in Hospital in 102 Patients With Doomed Pregnancies

	Average stay in hospital
Cases confirmed as complete abortion/delayed periods after sonar (52 patients)	0.8 days
Cases undergoing curettage which were histopathologically (50 patients)	3.5 days

The stay in hospital of those undergoing sonography; after sonar, was reduced especially in cases where scan revealed an empty uterine cavity.

Ultrasonography was done in 15 patients of clinically suspected ectopic gestation.

TABLE IX  
Vesicular Mole  
Scan done to rule out vesicular mole—9 patients

Ultrasound diagnosis	No. of patients
Vesicular mole	2
Multiple pregnancies	1
Mistaken maturity	6

Of the 9 clinically suspected cases of vesicular mole only 2 were confirmed on scanning, while 4 cases that were clinically missed were diagnosed by ultrasound. In all 6 cases the diagnosis was confirmed on histopathology.

Discussion

The incidence of first trimester bleeding is difficult to calculate since it is often not reported by the patient. Figures varying from 16% to 2.4% have been reported.

The number of patients who aborted following bleeding before 20 weeks of gestation was 34.9% in Bennet and Kerr-

TABLE VIII

Ectopic Gestation

(Scan done to rule out ectopic gestation — 15 patients)

Ultrasound diagnosis	No. of patients	Per cent
Probably ectopic gestation	6	40
Intrauterine pregnancy	1	6.5
No evidence of intrauterine pregnancy	8	53.5

Six patients were reported as probable ectopic gestation on the scanner; however only 2 patients of these 6 were subsequently confirmed to be ectopics on laparoscopy/laparotomy. Sonar was useful in pinpointing an ectopic gestation which was missed on clinical examination.

Wilson's study (1980) of 150 patients, with a history of bleeding in early pregnancy.

Varma (1972) reported a normally progressing gestation in 62% as compared to 57% in the present study.

Utilizing ultrasound as a diagnostic modality in the management of abortion.

Robinson (1972) reported misleading results in 5% (7 patients) while Drumm's study (1975) reported an incidence of 2.5% (6 cases). In the present study the incidence of incorrect reporting was 6 patients (2%).

Ultrasound is valuable in deciding the line of management in first trimester haemorrhage, as in the absence of sonar the incidence of unnecessary curettages with "Pathology Negative" was 41% in our study which compares favourably with an incidence of 39% as demonstrated by Drumm (1975). However, in the group where ultrasound was used to confirm the clinical diagnosis the incidence of unnecessary curettages could be drastically reduced to 1%.

Patients in whom diagnosis of complete abortion was confirmed by ultrasonic scan, had a shorter stay in hospital than did those who had not been scanned. Similar findings were also reported by Robinson (1972).

Diagnosis of ectopic gestation is often difficult when the clinical picture is not classical. Of the 15 patients referred with a clinical diagnosis of ectopic gestation ultrasound revealed a probable ectopic gestation in 6 cases. However, on laparoscopy/laparotomy the incidence of

wrong diagnosis was 26% as compared to 10% in Varma's study (1972).

Vesicular mole can be the clinician's pitfall as of the 9 clinically suspected cases, only 2 cases were confirmed by the scan as compared to Varma's study (1972) where 7 out of 15 cases were confirmed.

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