

ULTRASOUND EVALUATION OF BLEEDING IN EARLY PREGNANCY

By

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SUMMARY

Ultrasonic scanning was done in 90 cases with bleeding in early pregnancy. The clinical diagnosis, ultrasonic diagnosis and follow up results are correlated and presented. It has been found that ultrasound has a definite edge over clinical diagnosis.

Introduction

The first trimester of pregnancy is a dynamic period that spans ovulation, fertilization, implantation and organogenesis. Bleeding is a very common complication in early pregnancy. The clinical approach though helpful is of limited value. In the present day, ultrasound has become an important non-invasive tool in the obstetrician's armamentarium. It is also relatively safe for the conceptus as exposure to ionising radiation is eliminated. In case of bleeding in early pregnancy, it can predict whether a pregnancy has a good chance of continuing or it is destined to fail or has already failed. It has been reported that blighted ovum can be diagnosed by certain ultrasonic features such as absence of a well-defined gestation sac, absence of foetal echoes, small for dates gestation sac and failure of growth over a period of one to two weeks (Donald *et al* 1972). Robinson (1972) has reported that ultrasound is a valuable diagnostic aid, especially in cases in which a complete abortion has been diagnosed.

Material and Methods

In the present study, 90 cases of bleeding in early pregnancy (i.e. 1st trimester and early second trimester) who attended Gynaecology out patient and emergency department at Dayanand Medical College and Hospital, Ludhiana were studied clinically and by ultrasonography in order to correlate the clinical and ultrasonic diagnosis with the outcome of such pregnancies. The scanning was done with the help of Toshiba's S.A.L. 304, Sonolayer Alpha Transducer Linear array PLA 308 M which is a real time scan and frequency of the transducer is 3.5 Mega Hertz. After applying the lubricating jelly liberally over the abdomen, scanning was done both in the longitudinal and transverse directions. Patients were advised to come with a full bladder which helps to visualise the uterus and embryo clearly.

When a patient presented with amenorrhoea followed by vaginal bleeding, her clinical details like age, parity, obstetric history, previous menstrual history and the details of the present pregnancy in terms of period of amenorrhoea at the time of first bout of bleeding, amount and duration of bleeding, history of expulsion of products were noted. The details of pertinent clini-

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Accepted for publication on 17-7-86.

cal examination were taken note of. Qualitative gravindex test was done in each case and as soon as possible ultrasound scanning was done. Ultrasound examination was reported after 1-2 weeks whenever thought necessary. The findings of clinical examination and ultrasonic findings were correlated and the course of pregnancy was followed up.

Observations and Results

The age of the patients ranged from 18 years to 40 years. The maximum cases were in 21-25 years age group. The parity of the patients ranged from nulliparity to para 3 and 56% of the total cases had a history of 1-3 spontaneous abortions in the past.

The time at which the first bout of bleeding occurred is shown in Table 1.

TABLE I
Time at which the First Bout of Bleeding Occurred

S. No.	Time at which 1st bout of bleeding occurred	No. of patients
1.	weeks	41
2.	9-10 weeks	17
3.	11-12 weeks	18
4.	13-14 weeks	13
5.	15-16 weeks	1

Table II shows the clinical diagnosis.

TABLE II
Clinical Diagnosis & Percentage Accuracy

Diagnosis	No. of cases	Percentage accuracy
Threatened abortion	62	69.4
Missed abortion	10	60
Ectopic pregnancy	8	87.5
Hydatiform mole	4	75
Incomplete abortion	3	66
Delayed period, not pregnant	3	100

Clinically there were 62 cases of threatened abortion, 10 cases of missed abortion, 8 cases of ectopic pregnancy, 4 cases of H. mole and 3 were cases of incomplete abortion and 3 were diagnosed as Delayed period.

Table III: Shows the ultrasonographic diagnosis and its percentage accuracy when judged by follow up of further course of pregnancy.

TABLE III
Ultrasonographic Diagnosis

Diagnosis	No. of cases	Percentage accuracy %
Threatened abortion	45	95.5
Missed abortion	9	100
Blighted ovum	11	100
Ectopic pregnancy	8	87.5
Hydatiform mole	5	100
Inevitable abortion	2	50
Inevitable abortion	3	100
Not pregnant	7	100

Table IV: Shows the correlation of clinical and ultrasonographic diagnosis and the follow up results.

Discussion

In 1944, Hertig and Livingstone concluded from their experience that a threatened abortion should be considered salvagable until proved otherwise. Now with the availability of ultrasound, it is possible to differentiate between a live pregnancy and a pregnancy that will inevitably end up in spontaneous abortion. It is an invaluable tool to determine foetal wellbeing at all stages of pregnancy apart from diagnosing foetal maturity, presentation, multiple gestation, congenital anomalies and the site of implantation of placenta.

TABLE IV
Follow Up Results

Disease	Clinically Diagnosed No. of cases	U/S Diagnosed No. of cases	Follow up & results
Threatened abortion	62	45	Out of 45, 42 cases continued or are continuing the pregnancy. 2 became missed abortion and 1 became inevitable. 8 cases have delivered by now.
Missed abortion	10	9	Out of 9 cases diagnosed by ultrasound products were obtained on evacuation. Out of 10 cases diagnosed clinically, 1 case came out to be H. Mole.
Blighted ovum	0	11	Three of them refused evacuation. The rest were confirmed on H.P.E.
Ectopic pregnancy	7	7	All cases confirmed by Needling 1st and Laparotomy later.
Hydatidiform mole	4	5	All confirmed by H.P.E. after evacuation.
Inevitable abortion	0	2	One aborted & one continuing the pregnancy.
Incomplete abortion	3	3	All cases evacuated and confirmed.
(Delayed period not pregnant)	3	7	Three cases refused a Diagnostic D & C (i) One case—HPE was proliferative endometrium. (ii) One case showed Progestational endometrium. (iii) One case showed a fibroid of uterus with endometrial hyperplasia. (iv) One case turned out to be ectopic pregnancy which later came as an emergency as ruptured ectopic pregnancy.

1. *Missed abortion*: The gestation sac is present but smaller than dates, foetal pole is present but no cardiac pulsations. If it is a case of a long duration the fluid gets absorbed, sac is not seen and only the foetal pole is seen.

2. *Anembryonic pregnancy or blighted ovum*: It is seen as a definite gestation sac but margins are blurred or crenated. There is no foetal pole or yolk sac. Fluid is there in the sac. The fertilized ovum develops upto the blastocyst stage, gets implanted but the inner cell mass does not develop and gets absorbed. That is how the foetal pole is absent. Syncytiotrophoblast grows for some time, so chorionic gonadotropins are produced and hence the pregnancy test is positive for some time. Later it becomes negative.

3. *Incomplete abortion*: Uterus is slightly larger than normal size, and it is not empty. There is no gestation sac or foetal pole but mixed irregular echoes are there.

4. *Complete abortion*: Smaller empty uterus.

5. *Ectopic Pregnancy*: (a) well formed gestation sac with foetal pole in adenexal area for an intact ectopic.

(b) Free fluid or hyperechoic areas around uterus in case of rupture or leak.

6. *H. Mole*: Big uterus, no gestation sac, multiple small anechoic areas seen and each is surrounded by an echoic rim. Diffused low level echoes comparable to those of placental tissue are seen.

For all these conditions, ultrasound is the only imaging modality that can accurately assess pregnancy during the critical period of 1st trimester (Lyons, E.A. and Levi, C. S., 1982).

In the present study, we have found that in cases where a definite gestation sac and foetal pole with positive foetal cardiac pulsations are present, the prognosis for continuation of pregnancy was excellent. Forty-two out of 45 cases i.e. 93.3% continued the pregnancy. It is comparable to 87% pregnancy continuation rate quoted by Margit Mantoni (1985).

In 45 cases where the foetal heart movement was not detected turned out to be cases of missed abortion, blighted ovum, incomplete abortion, hydatidiform mole and ectopic pregnancy as shown in Table III. The cause of vaginal bleeding in cases of threatened abortion with positive foetal heart was reported to be marginal separation of placenta, low lying placenta and intrauterine haematoma.

To conclude, ultrasonic diagnosis has an edge over clinical diagnosis by about 30% in cases of threatened abortion, by 40% in missed abortion, 25% in hydatidiform mole and about 35% in incomplete abortion. The diagnosis of blighted ovum was elicitable only by ultrasonic examination.

References

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