

## ULTRASONOGRAPHIC STUDIES IN CASES WITH BLEEDING IN LATER PART OF PREGNANCY

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### SUMMARY

Ultrasonic scanning was done in 170 cases with bleeding in later part of pregnancy (>20 weeks gestation) for placental localization. In cases where placenta was in lower part of uterus and gestation period was less than 32 weeks rescanning was done after 34 weeks to assess the placental site and placental migration. The details of the cases were presented.

### Introduction

The common causes of bleeding in later part of pregnancy are placenta previa, accidental hamorrhage and local lesions. The incidence of antepartum hemorrhage varies from 1 to 33%. The incidence of placenta previa and accidental hemorrhage is variable. In South India accidental hemorrhage is three to four times more frequent as compared to placenta previa (Bhatt, 1982).

Accurate localization of the placenta is of considerable importance in the management of bleeding in later part of pregnancy. Ideally a technique for placental localization must be reliable, safe for mother and fetus involve no maternal discomfort and be effective at any point of gestation (Doran *et al*, 1974). At present, diagnostic ultrasound appears to fulfil all of these criteria. The reliability and accu-

racy of ultrasound for placental localization compare favourable with arteriography and isotope placentography (Gottesfeld *et al*, 1966; Kohorn *et al*, 1969). However, unlike these techniques the use of sonar is not associated with maternal or fetal exposure to ionizing radiation. Moreover, the placenta may be localized by sonar at any time after the twelfth week of pregnancy.

During gestation placenta does not have always same position but it migrates sometimes. King (1973) described a series of patients in whom placenta previa was seen early in pregnancy with the placenta changing to a position in the upper segment of the uterus towards term. This phenomenon is called placental migration and is attributed to differential growth rate of the uterus and placenta.

In the present study, ultrasonic scanning was carried in cases with bleeding in later part of pregnancy i.e. after 20 weeks of gestation for localization of placenta.

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Rescanning was carried out to assess placental migration.

#### Material and Methods

One hundred, seventy pregnant women with bleeding after 20 weeks gestation were selected for this study. Detailed complaints and previous obstetric history were entered in specified proforma. Ultrasonic scanning was done with gray scale compound contact scanner (Ultrasonograph EPTM (Unirad) GZD Model 849) using 3.5 M H<sub>2</sub> transducer.

The method described by Donald and Abdulla (1968) was used for localisation of placenta. Scanning was done when the bladder was partially distended. This permits visualization of the cervix and lower uterine segment and show to what extent the placenta covers the internal os. Scanning was done in supine position. Liquid paraffin was applied liberally on abdomen to get good acoustic coupling. Longitudinal scans over the abdomen were made from xiphisterum to symphysis pubis. This reveals the position of the placenta and further scans in transverse section at different levels were taken to confirm the diagnosis. Placenta previa was diagnosed definitely by ultrasound when placental tissue covers some or all of the internal os. Partial or complete placenta previa can be identified. A placenta that lies within the lower uterine segment but only approaches the cervical os without covering it was defined as low lying placenta. The viability of the fetus was confirmed by seeing the fetal heart movements by the method described by Robinson (1972).

#### Follow Up

In cases where initial scan showed placenta in lower part of uterus either low lying placenta, partial or complete placenta previa and the gestation period

was less than 32 weeks rescan was done at 34 weeks to determine the site of placenta and to assess the placental migration. The accuracy of placental site diagnosis was confirmed by noting the position of placenta at cesarean section.

#### Results

Initial ultrasonic scan showed placenta in the upper part of uterus in 104 cases (63%), complete placenta previa in 16 cases (10.1%), partial placenta previa in 18 cases (10.9%) and low lying placenta in 27 cases (16%). The placental site on initial scan according to gestation is shown in Table I. Scan photographs showing complete placenta previa, partial placenta previa and low lying placenta are shown in Fig. 1-3. In addition to the above findings ultrasonic findings suggestive of vesicular mole was present in 1 case and missed abortion in 4 cases. The gestation period at initial scan in these cases was between 21 and 24 weeks.

Thirty-nine cases who showed placenta in lower part of uterus on initial scan (before 32 weeks of gestation) were rescanned after 34 weeks of gestation. Rescan showed that in 16 cases (41%) the placenta has migrated to upper part of uterus. Table II shows incidence of placenta in lower part of uterus on initial scan and rescanning.

Rescan showed that when initial scan showed complete placenta previa, in 90.9% of cases there was no change in placental position. In cases with low lying placenta and partial placenta previa on initial scan, in 46% of the cases there was no change in the placental position and in 54% of patients the placenta had migrated to upper part of uterus. In 23 cases placental location was confirmed at cesarean section. In this group ultrasound predicted correctly the location in 22 cases (96%).

TABLE I  
Placental Site on Initial Scan According to Gestation

Gestation period at initial scan (Weeks)	No. of cases	Upper part of uterus	Placental site		
			Low Lying placenta	Partial placenta previa	Complete placenta previa
21-24	18	8	1	2	2
	Vesicular Mole	1		Missed abortion 4	
25-28	32	17	8	3	4
29-32	52	33	8	6	5
33-36	56	37	9	6	4
37-40	12	9	1	1	1
Total:	170	104 (63%)	27 (16%)	18 (10.9%)	16 (10.1%)

TABLE II

Incidence of Low Lying Placenta on First Scan (Before 32 Weeks) and Rescanning After 34 Weeks

Gestation period (weeks)	No. of cases	Upper part of uterus	Placental site		
			Low lying placenta	Partial placenta previa	Complete placenta previa
21-32 (First scan)	97	58	17	11	17
34 (Rescan)	39	16	7	6	10

Discussion

This study suggests that placental localisation by ultrasound is an accurate method. In the present study, the accuracy rate of ultrasound placentography was 96%. This accuracy rate was comparable to that reported by Donald and Abdulla (1968), Kohoron *et al* (1969) and Gottesfeld (1966).

During gestation, placenta does not have always the same position but it migrates sometimes. This change expresses itself so that the distance between the lower placental edge and the internal cervical os

becomes longer during the course of gestation.

It is now clear that an apparently low lying placenta in early pregnancy must be considered as a anatomical variant (King, 1973; Wexler and Gottesfeld, 1977). In all cases where initial scan in second trimester shows placenta previa should be scanned atleast once later in pregnancy and the diagnosis should be given according to the last finding.

In our study, 16 out of 39 cases (41%) who showed placenta previa on initial scan showed placental migration on rescan after 34 weeks gestation.



There are few reports on changes of placental site diagnosed by repeated ultrasonic examination. All these authors followed the cases when they found placenta previa on scanning either done for some indication or prior to amniocentesis (Kurjak *et al* 1976, Champman *et al* 1979).

The incidence of placenta previa on initial and rescan is high in our study compared to other reports. The reason could be due to the types of cases studied. In our series all cases were symptomatic with recurrent vaginal bleeding whereas in earlier reports the cases were not having complaint of vaginal bleeding and the placenta previa was detected on routine scanning or prior to amniocentesis.

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See Figs. on Art Paper II