

# Placenta Previa: the role of Ultrasound in assessment during Third Trimester

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## Abstract

**Objective:** To assess the role of ultrasound in detecting the migration of placenta previa during the third trimester at Lady Willingdon Hospital and Jinnah Hospital, Lahore during the period July 2000 to September 2002.

**Methods:** Eighty pregnant women with the diagnosis of placenta previa at 28 to 32 weeks of gestation were included in the study. After base line ultrasound, scan was repeated every two weeks until delivery or placental migration for more than 3 cm from internal cervical os. Detailed information for placental position, distance from cervical os and relation to presenting part was recorded. Women with major degree placenta previa were admitted in the hospital at 32 -34 weeks of gestation. Delivery plan was made according to degree of placenta previa by completed 37 weeks of gestation. Cesarean section was done for the women with major degree placenta previa and minor degree placenta previa with antepartum hemorrhage and obstetric indication .

**Results:** Out of 80 women placental migration to a distance of more than 3-5 cm from the internal cervical os occurred in 20 cases (12 anterior/anterolateral, 8 posterior/posterolateral) by 36 weeks of gestation and 20 had complete placenta previa. Out of remaining 40 cases, 12 patients had vaginal delivery and 28 had cesarean section. Placental migration was not observed in women with total placenta previa or posterior placenta previa when the distance of lower edge of placenta was less than 1 cm from the internal os.

**Conclusion:** Ultrasound is important for the diagnosis of placental localization and placental migration during third trimester. Placental migration takes place more often in anterior than in complete or posterior placenta previa (JPMA 54:81 ;2004).

## Introduction

Placenta previa is the placenta, implanted entirely or in part in the lower uterine segment. Most important in diagnosis is the distinction between major and minor degree placenta previa. The causes of placenta previa are frequently unclear. The most identifiable etiological factor is previous uterine damage. 1 Transabdominal, transvaginal and transperineal ultrasound has been used to localize the placenta with variable success rate. 2-4 Sonographic diagnosis of placenta previa has an excellent record of accuracy and safety. 5 Transvaginal ultrasound utilizes higher frequencies of ultrasound and provides a better resolution of lower edge of placenta. It is the most accurate method for diagnosis and localizing placenta previa. 6 The source of diagnosis and management difficulty is "rising placenta". Although around 5% of women have ultrasound evidence of low placenta at 20 weeks, only 10% of this 5% (i.e. 0.5% overall) actually have a placenta previa at delivery. 7 The apparent change of placental position results from formation of

lower uterine segment. Placenta previa appears to migrate to a more fundal position in advancing pregnancy due to more rapid growth of lower uterine segment. Furthermore, this phenomenon is more pronounced in the anterior than in the posterior low lying placenta. 8-10 The present study was conducted to evaluate the role of ultrasound in diagnosing placental migration in the second half of the pregnancy and deciding for mode of delivery in diagnosed cases of placenta previa.

## **Subjects and Methods**

A study was carried out in Gynae unit 3, Lady Willingdon Hospital Lahore and Jinnah Hospital Lahore, from July 2000 to September 2002. During this period 80 patients were selected for this study. Patient's history was recorded and those with clinical diagnosis of placenta previa were referred to radiology department for confirmation by ultrasound. Along with other parameters of obstetrical ultrasound, placental localization, relation of placenta to the internal cervical os and at least 5 cm of lower uterine wall were clearly visualized in all cases. Saggital scans for the whole length of cervix and the lower part of the uterus were first obtained in each patient. Measurements were taken by tracing the distance between the lower edge of placental tissue and the internal cervical os in the absence of uterine contraction. The relationship between the presenting part and the lower placental edge was documented. In indicated cases, where findings were not confirmed by transabdominal ultrasound, transvaginal ultrasound was performed. The transducer was inserted cautiously into the vagina, upto a short distance from the cervix under the continuous observation of the image. Baseline ultrasound was done. The placenta previa was diagnosed when the placental tissue was found to cover the internal cervical os or while placenta lying within 5 cm from the internal cervical os. Patients were counseled for diagnosis and expected management. The patients with major degree placenta previa or with antepartum hemorrhage were admitted to the hospital by 32-34 weeks of gestation The ultrasound for placenta was repeated every two weeks afterwards to assess placental migration Delivery plan was made according to the degree of placenta previa by 37 weeks of gestation in stable patients. The stable patients with minor degree placenta previa (anterior type 1 and 2, posterior type 1) were planned for vaginal delivery Cesarean section was decided for the major degree placenta previa and minor degree placenta previa with antepartum hemorrhage In indicated cases of antepartum hemorrhage, emergency cesarean section was done .

## **Results**

Eighty selected cases with the diagnosis of low lying placenta at 28-32 weeks diagnosed either on routine obstetric ultrasound or presenting with vaginal bleeding in mentioned period, were included in the study. Out of 80 patients, the initial sonographic examination showed 28 cases to have anterior or anterolateral placenta previa Placental migration to distance more than 3 cm from the internal cervical os was observed in 12 cases (Table).Of the remaining 16 cases, 8 had vaginal delivery and 8 cesarean section due to antepartum hemorrhage or major degree placenta previa The cases who had vaginal delivery, the presenting part (head) was below the lower edge of the placenta. Thirty two cases had posterior or posterolateral placenta previa at the initial sonographic assessment

Migration 3 cm above the internal os was observed in only 8 cases (Table) In the remaining 24 cases, 4 patients had vaginal delivery and 20 had cesarean section Twelve cases had emergency cesarean section due to antepartum hemorrhage while 8 had elective cesarean section at 37 weeks of gestation Twenty cases had placenta previa completely covering the internal os No placental migration was observed in these patients (Table). Twelve cases in this group had emergency cesarean section due to antepartum hemorrhage 8 had elective cesarean section after completing 37 weeks of gestation. In this study no significant placental migration was observed in either anterior or posterior previa after 36 weeks The placental migration was observed more frequently in anterior placenta previa than in posterior placenta previa Emergency cesarean section was more frequent either in posterior placenta previa or placenta completely covering the os Two cases had cesarean hysterectomy due to post partum hemorrhage One case was of previous cesarean section and anterior placenta previa while the other was with complete placenta previa.

## **Discussion**

The term "placental migration" is used to describe positional changes in lower placental edge towards a more fundal position and away from the internal cervical os It correlates with the concept of a dynamic placenta that mobilizes itself from the lower uterine segment synchronous with the formation of upper segment. 11 However no histological evidence of such migration has ever been confirmed. Sonographic observations of changes in distance between the lower placental edge and internal cervical os occurring during the second trimester and early third trimester are well documented. 12,13 This was observed in our study in cases with anterior, anterolateral, posterior and posterolateral placenta previa. It is because the lower segment grows faster than the placenta and the net result of this differential growth rate is that the lower placental edge appears to move away from the internal cervical OS 14,15 This study shows that the placental implantation site, the distance of the lower placental margin from the internal cervical os, the relationship between the presenting part and the placental margins are important sonographic findings, In stable patients, vaginal delivery was achieved in the cases where presenting part (head) was below the lower placental edge In this study, major degree placenta previa in third trimester remained the same. This finding is the same as reported by others. 2,8 The cesarean section rate was higher in posterior placenta previa as compared to anterior placenta previa .Placental migration and likelihood of vaginal delivery was less often in posterior placenta previa as compared to anterior placenta previa. Two cases had cesarean hysterectomy. Cesarean hysterectomy rate was higher as compared to other population In cases with total placenta previa, 60% patients had emergency cesarean section due to antepartum hemorrhage. Preoperative counseling is important in these patients for emergency blood transfusion and risk of cesarean hysterectomy. Ultrasound is important for the diagnosis of placental localization and placental migration during third trimester, Placenta migration is more often in anterior placenta previa as compared to complete or posterior placenta previa.

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