

Original Article

Assessment of placental migration in mid trimester low lying placenta

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Abstract

Objectives: To assess the migration of low lying placenta diagnosed in the second trimester. **Methods:** All the antenatal women under going routine obstetric ultrasound around 18-20 weeks were subjected to transvaginal USG to detect low lying placenta (lower edge of placenta within 3 cm from the internal os). These cases were followed 4 weekly by TVS to note the placental migration till term / delivery which ever was earlier. **Results :** Of the total 507 cases, only 41 (8.08%) women had low lying placenta in the mid trimester. Follow up of these 41 cases indicated that in 29 (70.73%) cases it had migrated to the upper segment at term/delivery. The migration of placenta was 91.66% & 76.91% where the distance between the leading edge of the placenta and internal os was more than 2 cm and between 1.5-2 cm respectively. Migration was not observed in women where the distance was less than 1.5 cm. Placental migration was 64.51% in anteriorly situated placenta and 90% in posteriorly situated placenta. The rate of placental migration was 78.57%, 62.5% and 40% in women who had previous normal delivery, prior history of D&C/MRP & prior birth by caesarian section respectively. **Conclusions:** The prevalence of low-lying placenta in mid trimester is 8.08%, which reduces to 2.36% at term due to placental migration. The rate of placental migration was 70.73%. Factors like the initial distance between the lower edge of the placenta and internal os, placental position and previous birth by cesarean section influenced placental migration.

Key words: low lying placenta, placenta previa, placental migration

Introduction

Low lying placenta is common observation at the routine obstetrics USG done in second trimester which alarms the obstetricians about the possibility of placenta

continuing to remain in the lower segment and its associated maternal and fetal morbidity / mortality. The phenomenon of placental migration is an apparent change in the position of placenta with advancing gestational age and has been well documented with transabdominal USG¹. Transvaginal USG is a well-established, safe and accurate method of placental localization and is superior to transabdominal USG. The prevalence of low lying placenta in the midtrimester where the placenta is lying within 3 cm from the internal os diagnosed sonographically in the second trimester ranges from 6-46% and reduces to as low as 0.5% at term due to placental migration². Placental migration is a positional change of the placenta from the lower

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segment to upper segment due to the net result of differential growth of placenta towards well vascularized fundus and degeneration of peripheral villi in the lower uterine segment that receives less blood supply and the differential growth rates of lower segment of the uterus and placenta³. The present study was undertaken to evaluate the phenomenon of placental migration and the factors influencing placental migration.

Methods

All the registered antenatal women attending KLES Hospital and MRC, Belgaum from 1st December 2000 to 30th November 2001 undergoing routine obstetric transabdominal USG at 18-20 weeks of gestation were subjected to transvaginal USG. TVS was performed using 5 MHz probe (Aloka SSD 1100 Tokyo, Japan) after ensuring empty bladder.

The line of cervical canal was visualized and the distance between the centre of the internal os and the leading edge of placenta was measured. An average of 3 measurements was taken to calculate the distance in centimeters. Antenatal women with low lying placenta, i.e. the distance between the leading edge of placenta and the internal os of less than 3 cm at 18-20 weeks were included in the study³. TVS was repeated every 4 weeks until either the lower edge of the placenta migrated beyond 3 cm or the patient had delivered, whichever ever is earlier. The attending obstetrician was informed of the USG findings but the management decision was based on the usual clinical parameters.

Table 1. Prevalence of low lying placenta at mid trimester and rate of placental migration.

No. of mid trimester low lying placenta	No. of Placenta at term / delivery	Rate of placenta migration
41 (8.08%)	12 (2.36%)	70.73 %

Table 2. Relation between previous pregnancy events / outcome and placental migration.

Previous pregnancy events outcome	No. of midtrimester low lying	No. of placenta migrated	Percentage of migration
Vaginal delivery	28	22	78.57
Cesarean section	05	02	40
D & C / MRP	08	05	62.5

Table 3. Placenta migration in relation to initial distance from internal os.

Initial distance from internal of	No. of midtrimester low lying placenta	No. of placenta migrated	Percentage of migration
<1.5 cm	08	00	0
1.5 - < 2 cm	09	07	77.77
2-3 cm	24	22	91.66

Table 4. Placenta migration in relation to the position of placenta.

Position of placenta	No. of mid trimester low lying placenta	No. of Placenta migrated	Percentage of migration
Anterior	31	20	64.51

Results

A total of 507 antenatal women underwent transvaginal USG around 18-20 weeks of gestation to identify low lying placenta. Out of these, 41 women had low lying placenta. The prevalence of low lying placenta in early mid trimester was 8.08% and 83.3% presented with bleeding per vaginum. Follow-up USG of these 41 cases of low lying placenta showed that in 29 cases the placenta had migrated beyond 3 cm from the internal os in the late third trimester/term. This resulted in the prevalence of placenta previa to be 2.36% around term. Cases of persistent low lying placenta were associated with multiple antepartum and postpartum complications like abortion in 58.33% preterm delivery 41.66% and retained placenta in 8.33%.

Age and parity of the women did not influence either the incidence or the migration of low lying placenta in the present study.

The rate of placental migration was highest that is 91.66% (22/24) where the initial distance between the lower edge of the placenta and the internal os was more than 2 cm. Only 76.9% (7/9) migration was observed where the distance was in the range of 1.5-2 cm. None of the low lying placenta showed migration where the initial distance was less than 1.5 cm.

Anteriorly situated low lying placenta showed lesser

migration (64.51%) (20/31) when compared to posteriorly situated placenta (90%) (9/10).

The rate of placental migration was 78.57% in women with previous vaginal deliveries when compared with women having previous cesarean section (40%) and women with prior history of D & C / MRP (62.5%).

Discussion

The diagnosis of low lying placenta in the mid trimester obstetric ultrasound has considerably increased in the present scenario due to various factors. The present study noted the prevalence of low lying placenta in early mid trimester to be 8.08% which is higher compared to Taipale who reported the prevalence as 4.5%⁴. The factors responsible for this increased prevalence could be due to the increased number of antenatal women undergoing routine USG in the early mid trimester, use of transvaginal USG, which is a gold standard in the diagnosis and assessment of migration of low lying placenta and increased prevalence of prior cesarean section births.

Though advancing maternal age and multiparity are risk factors for low lying placenta in the mid trimester they do not appear to be the risk factors for persistence of the placental previa at term. Thus age and parity do not adversely affect the migration of low lying placenta.

Women with prior cesarean section are more likely to have increased incidence as well as persistence of low lying placenta. It has been suggested that damage to the endometrium during cesarean section predisposes to low implantation of the placenta and also impairs the ability of placenta to migrate⁵. Women with at least one prior cesarean section were 2-6 times at greater risk for development of placenta previa in the subsequent pregnancy and in women with prior MTP the risk was 1.7 times higher⁵.

Placental migration observed depends mainly on the initial distance between the lower leading edge of the placenta and the internal os. The migration rate was maximum when the distance was more than 2 cm³. In the present study, placental migration was observed more in posteriorly situated placenta when compared to anteriorly situated placenta, contrary to other reports⁶.

This may be because of increased incidence of pregnancies with prior caesarean sections in the present study.

Summary

Out of the 507 women, 41 (8.08%) had low lying placenta at the second trimester USG examination. Out of the 41 women, 29 (70.73%) had placental migration at term. The placental migration was more in women with previous vaginal delivery (78.57%) compared to that in women with previous cesarean section (40%) and women with prior history D & C / MRP (62.5%). Posterior placenta migrates more compared to anterior placenta.

Conclusion

Low lying placenta is a matter of concern to the obstetrician. 70% of the mid trimester low lying placenta migrate to the upper segment by term. However 92% of the low lying placenta within 1.5 cm from the os continue to persist as placenta previa at term. Factors like previous LSCS and D&C may hinder placental migration.

References

1. Leerentveld RA, Gilberts EC, Arnold MJ et al. Accuracy and safety of transvaginal sonographic placental localization. *Obstet Gynecol* 1990;76:759-62.
2. Ancona S, Chatterjee M, Rhee I, et al. The midtrimester placenta previa: a prospective follow-up. *Eur J Radiol* 1990;10:215-6.
3. Oppenheimer L, Holmes P, Simpson N et al. Diagnosis of low lying placenta: can migration in the third trimester predict outcome? *Ultrasound Obstet Gynecol* 2001;18:100-2.
4. Taipale P, Hiilesmaa V, Ylöstalo P. Diagnosis of placenta previa by transvaginal sonographic screening at 12-16 weeks in a nonselected population. *Obstet Gynecol* 1997;89:364-7.
5. Ananth CV, Smulian JC, Vintzileos AM, The association of placenta previa with history of caesarean delivery and abortion: a meta analysis. *Am J Obstet Gynecol* 1997;177:1071-8.
6. Ghourab S, Al-Jabari A. Placental migration and mode of delivery in placenta previa: transvaginal sonographic assessment during the third trimester. *Ann Saudi Med* 2000;20:382-5.