

Importance of placental localisation in early pregnancy

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Abstract

Objectives: To determine the incidence and rate of persistence of placenta praevia diagnosed as low lying placenta in d" 20 weeks' gestation using sonography (USG) and to establish its' co-relation with pregnancy outcome.

Methods: Randomized 230 pregnant women studied by USG at d" 20weeks gestation. Among them 42 were recruited for study as they were having low lying placenta. These cases were rescanned at e" 28 weeks.

Results: In 230 cases, the incidence of low lying placenta at d" 20weeks was 18.26% (42/230); 90.5% had lateral, 2.4% had marginal and 7.1% had total placenta praevia. A total of 26 (61.9%) cases, had threatened abortion and two patients aborted. On longitudinal follow-up, 80% of remaining 40 cases had normally situated placenta at rescan. However those with total placenta praevia at d" 20weeks persisted as such with 100% persistence while only 10.5% with lateral low lying placenta persisted. APH was presentation in 3(7.1%), all of them undergoing cesarean sections for placenta praevia.

Conclusion: Ultrasonography at <20 weeks gestation showing low lying placenta has been useful in predicting placenta praevia at third trimester. Total placenta at this gestation has invariably persisted as placenta praevia at third trimester.

Key words: Placenta, Low lying Placenta, Placenta Praevia, APH

Introduction

Placenta praevia occurs in approximately 1 in 200 to 1 in 390 pregnancies and varies in degree as complete (20%-43%), partial (27%-31%) or marginal (46%). The characteristic event in placenta praevia is painless bleeding without warning. Last decade has seen significant changes in the timing of diagnosis of placenta praevia .Owing to common practice of early USG scan for detection of fetal abnormalities and other pregnancy complications, most cases can now be detected antenatally prior to onset of significant bleeding¹. However most cases of placenta praevia detected in the 2nd trimester generally resolve at delivery.^{2,3}

The purpose of this study is

1. To emphasize on importance of placental localization in early pregnancy.
2. To assess the role of serial TAS in predicting

placental migration

3. To follow the antenatal events in women with low lying placenta at d" 20 weeks gestation till delivery.

Methods. Design and Setting: It was a randomized prospective study of pregnant women who were attending the antenatal clinic at Kamla Raja Hospital, G.R. Medical College Gwalior, M.P, India during April 2004- Sep 2005. The criteria for recruitment into the study were pregnant woman carrying singleton pregnancy who had an ultrasound scan d" 20weeks gestation and placenta was found to be low-lying.

Methods: Women were scanned with a full bladder using a 3.5 MHz curvilinear transducer after research ethics board approval. For this study, normal placenta was that which lay implanted 2.1 cm or more from the internal os. Low lying placenta was defined as placenta implanted within 2 cms from the internal os which further were classified as :-

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- a) Lateral : the lower margin of the placenta was lying below the fundus of the bladder but not reaching the internal os
- b) Marginal: the lower margin of the placenta reaches the internal os but does not overlap it.
- c) Partial: the placental edge partially covers the internal os.
- d) Total: the placenta totally covers the internal os.

Women having low lying placenta at d"20 week's gestation were rescanned at e" 28 weeks and were monitored for vaginal bleeding. Before 28 completed weeks' gestation, vaginal bleeding was considered to be threatened abortion while after that as Ante partum hemorrhage (APH). Pregnancy outcome was also noted.

Results

Out of 230 cases referred from OPD for routine USG, 42 patients had low lying placenta giving the incidence of low lying placenta at d"20 week's gestation as 18.2% which was included in the study group. Out of these 42 cases of low lying placentas, 90.5% were lateral, 2.4% marginal and 7.1% were total placenta. Partial placenta was nil.

Majority of them 26(61.9 %) presented as threatened abortion while 5 (11.9%) as APH. All the 3 cases of total placenta previa did have features of threatened abortion as well as APH (Table 1).

Low lying placenta was maximum in primigravida. But relative proportion of those who had threatened abortion and APH, increased with age as well as parity (Table 2 and 3).

In lateral low lying placenta, 2 cases aborted, 32 (84.2 %) migrated to upper segment and 4 persisted as such. A case of marginal placenta persisted as such and went to deliver vaginally a preterm baby. All the 3 cases of total low lying placenta persisted as such, delivered at term by caesarean section for placenta praevia.

Apart from this, caesarean sections were also performed in four cases for indications other than APH or placenta previa (in the low lying lateral placentation group) for CPD in one and previous cesarean section in two. Spontaneous normal deliveries occurred in 82.5%.

It is important to note that the total placenta do persist as placenta previa invariably at third trimester where as only 11% (4/36) of the lateral placentation do persist at third trimester.

Table 1. Types of low lying placenta at < 20 weeks

Low-lying placenta	No. of Patients	Threatened Abortion	APH
Lateral	38 (90.5%)	22	1
Marginal	01 (2.4%)	1	1
Total	03 (7.1%)	3	3
	42	26	5

Table 2. Age distribution and antenatal complications.

Age in years	No.	Threatened abortionN (%)	APH N (%)
16-20	10(23.8)	7(70)	1(10)
21-30	30(71.4)	18(60)	1(0.3)
31-40	02(4.76)	1(50)	1(50)
Total	42	26	3

Table 3. Parity and antenatal complications.

Parity	N (%)	Th. Abortion N (%)	APH N (%)
P027(64.28)	17(40.47)	1(2.38)	
P14(9.5)	1(25)	0	
P26(14.2)	5(83.)	1(16.6)	
P33(7.14)	2(66.)	1(33.4)	
P42(4.76)	1(50)	0	
Total	42	26	3

Table 4. Low lying placenta at < 20 followed at > 28weeks and mode of delivery.

Type of low lying placenta	<20 Wks No. (%)	Follow up		Abortion/delivery Outcome			Mode of delivery	
		Migrate to upper segment	Persisted N (%)	Abortion N (%)	Pre-term N (%)	Full term N (%)	Vaginal N (%)	C.S.N (%)
Lateral	38 (90.4)	32 (84.2)	4 (10.52)	2 (5.2)	9 (23.6)	27 (71.05)	32 (58.8)	4 (11.11)
Marginal	1 (2.3)	—	1	—	1	—	1	—
Total placenta	3 (7.1)	—	3 (100)	—	—	3	—	3

Discussion

Placenta praevia are now diagnosed before they become symptomatic with the practice of routine USG in the 2nd trimester.^{4,5,6} The incidence of sonographically diagnosed low-lying placenta in the second trimester, ranges from 6-46%. [Ghourab, 2000 reported 6-46 %, Mustafa et al in 2002 reported 3.9 % and Chama et al 2004 reported 14.6 % of placenta to be low lying in 2nd trimester]. This rate, however, decreases to as low as 0.5% at delivery.

In our study, 18.26% of pregnant women at d" 20weeks gestation showed a low-lying placenta which decreased to 3.4% at delivery. The advantage of determining placental position at this stage of pregnancy is low false positive rate compared to at earlier stages of pregnancy.⁹

The mechanism by which the placenta migrates away from the cervix and lower uterine segment with advancing gestational age is not fully understood. King³ proposed the concept of dynamic placentation. However no histopathological evidence of such migration has ever been confirmed.

Although it is widely accepted now that placenta does not actually moves from its attachment, the term PLACENTAL MIGRATION is still used .This placental migration is due to the fact that the lower segment

grows faster than the placenta and the net result of this differential growth is that the lower placental edge apparently appears to move away from the internal cervical os.³ Dr Haris Fineberg¹⁰ elegantly explained this phenomenon as TROPHOTROPISM, the tendency to grow towards better nutrition and away from poorer nutrition states.

In cases of low lying placenta at <20 weeks, placental migration occurs in > 85% cases when followed at term.^{6,8,11} Our study shows that 80% of low lying placenta at <20 weeks migrated to upper segment at term. (Table 4).

Studies have shown that about 90% cases low lying placentae in the second trimester remained asymptomatic and subsequently became normally situated.^{2,6,7,12} Chama et al 2004 reported that > 44% experienced threatened abortion while 15.7% subsequently had APH. In our study 61.9% (26/42) patients had threatened abortion while 12.5% (5/40) had APH (2 patients aborted). The occurrence of threatened abortion & APH increased with parity and age.

Placental migration was not observed in a single case of marginal low lying placenta and in all the three cases of total low lying placenta and non migration in total low lying placenta has been observed by other authors as well.^{6,10,13,14}

Caesarean delivery in our study was 17.5 % (7/40) but only 7.5% (3/40) were due to APH. In the remaining 4 cases caesarean was done for indication other than APH. Other studies have similar findings too (S.Ghourab et al 19.1%; Oppenheimer et al 19.4% ; Predanic et al approx. 22%).

In conclusion 2nd trimester localization of placenta by USG is always helpful to identify low-lying placentas as some of them do not give warning bleeding yet have chances to persist in 3rd trimester.

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