

A clinical study of placenta previa in semi urban population

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Abstract

Background/ Objectives: To study predisposing factors, management options, maternal & fetal outcome of placenta previa.

Methods: The present study was carried out on 30 diagnosed cases of placenta previa admitted in Padmashree. Dr. D. Y. Patil Hospital and Research centre, Pimpri, Pune from 2008 to 2011.

Results: In our study it was found that advancing age, parity, previous cesarean section, abortion were associated with placenta previa. Maternal morbidity and surgical interventions were significantly associated with amount of blood loss and type of placenta previa ($P < 0.0001$). In our study perinatal mortality and morbidity was mainly due to prematurity. Expectant management was significantly associated with better maternal and fetal outcome indicated by APGAR score (< 0.0001).

Conclusion: Expectant management, good neonatal care and timely surgical intervention improve maternal and perinatal outcome in placenta previa.

Keywords: FTND (Full term normal delivery), LSCS (Lower segment caesarean section), SD (Standard Deviation), Wks. (weeks), PTD (Preterm delivery), PPH (Post-partum hemorrhage).

Introduction

Maternal and fetal mortality and morbidity from placenta previa are considerable and are associated with high demands on health resources. With the rising incidence of cesarean sections combined with increasing maternal age, the numbers of cases of placenta previa and its complications will continue to increase.

Aims and Objectives

1. To search out the risk factors predisposing placenta previa.
2. To study the influence of placenta previa on pregnancy and labor.
3. To study the effectiveness of expectant and definitive therapy.
4. To study the maternal and fetal outcome.

Methods

The present study was carried out on 30 diagnosed cases of placenta previa admitted in Padmashree. Dr. D. Y. Patil Hospital and Research centre, Pimpri, Pune from 2008 to 2011.

Criteria for diagnosis:

Clinical criteria for placenta previa: Clinical picture of antepartum hemorrhage.

Radiological criteria (by ultrasonography with color doppler): Placenta in lower uterine segment.

Results

Our Study was carried out to study the clinical aspects associated with placenta previa influence of placenta previa on pregnancy and labor, its risk factors, management protocol, outcome of pregnancy both maternal and fetal were studied in 30 pregnant women admitted to the antenatal ward coming to the

department of Obstetrics and Gynaecology diagnosed as placenta previa.

The risk factors distribution among 30 cases in study group depicted 12 (40%) of cases had previous uterine scar followed by Abortion in 9 (30%) cases. Infertility and Recurrence was observed in 3 and 1 case respectively. Parity was observed as risk factor among 20 (66.67%) cases (Table 1).

Table 1: Risk factors present in study group

Risk factor*	No of cases	Percentage % (n=30)
Previous Uterine scar	12	40
Abortion	9	30
Infertility	3	10
Recurrence	1	3.33
Multipara	20	66.67

*Note: More than one risk factor was present in one case so total is not 30

The association between type of placenta and mode of delivery among 30 cases tested by applying Pearson's Chi-square test. The chi-square value was 15, which was statistically highly significant ($p < 0.0001$) (Table 2).

Table 2: Association between type of placenta previa and mode of delivery in study group

Type of placenta previa	Mode of delivery		Total
	FTND	LSCS	
Minor	6	4	10
Major	0	20	20
Total	6	24	30

$\chi^2 = 15, P < 0.0001$

The relationship between maternal morbidity and blood loss was analyzed quantitatively. The F value was 15.17, which was statistically very highly significant ($P < 0.0001$) (Table 3).

Table 3: Comparison of maternal morbidity and blood loss in study group

Maternal morbidity	n	Blood loss (ml)	F Value	P Value
		Mean \pm SD		
No	6	358.33 \pm 120.07	15.17	<0.0001
Anemia	20	910 \pm 323.06		
Shock	4	1300 \pm 81.65		

The relationship between expectant management and time of delivery (weeks) was analyzed quantitatively. The t value was 2.69, which was statistically significant. ($P < 0.01$) (Table 4).

Table 4: Comparison of expectant management and time of delivery in study group

Expectant management	n	Time of delivery (Wks)	t Value	P Value
		Mean \pm SD		
Given	25	35.96 \pm 3.06	2.69	<0.01
Not given	5	31.6 \pm 3.36		

The relationship between APGAR score and time of delivery (weeks) was analyzed quantitatively. The t value was 5.91, which was statistically very highly significant ($P < 0.0001$) (Table 5).

Table 5: Comparison of APGAR score and time of delivery in study group

APGAR score	n	Time of delivery (Wks)	t Value	P Value
		Mean \pm SD		
< 7	8	31.25 \pm 2.05	5.91	<0.0001
> 7	22	36.68 \pm 2.64		

Discussion

Our study is comparable to study conducted by Soharabi Davood et al (2008)⁽¹⁾ studied selected pregnancy variables in women with placenta previa. Birth records of 93 cases with placenta previa and 940 randomly selected controls were reviewed retrospectively. Multiparity was common in patients with placenta previa (78.5%, $p < 0.001$), Previous abortion (OR = 0.7; 95% CI = 0.57-0.83), previous placenta previa (OR = 5.17; 95% CI = 5.61-7.62), previous caesarean section (OR = 11.5; 95% CI = 3.91-33.41) were risk factors for placenta previa. Ayesha Shaikat et al.⁽²⁾ find out the frequency of placenta previa with prior C-section and those without placenta previa. Women with previous c-section were selected, out of which 33 were found to have placenta previa (21.5%). There was an increase in frequency of placenta previa with increasing number of c-section (50% with previous IV, n=8) almost equal frequency of

major degree of placenta previa 51.5% (n=17) and minor degree of placenta previa (48.4%, n=16) was found. Placental adherence was significant (48.5, n=16 with 27.2% accreta n=9) with placenta previa compared to (0.017%, n=2) without placenta previa. Most of the women with placenta previa were multigravidas with parity > 5 (60.6%, n=20) than those without previa (33.4% n=18). Women with placenta previa also had history of D&C (48.4%, n=16), abortions (48.4%, n=16), previous placenta previa (3%, n=1). Cande V. Ananth et al (1997)⁽³⁾ studied the association of placenta previa with history of cesarean delivery and abortion. The tabulation of 36 studies identified a total of 3.7 million pregnant women, of whom 13,992 patients were diagnosed with placenta previa. The reported incidence of placenta previa ranged between 0.28% and 2.0%, or approximately 1 in 200 deliveries. Women with at least one prior cesarean delivery were 2.6 (95% confidence interval 2.3 to 3.0) times at greater risk for development of placenta previa in a subsequent pregnancy. The results varied by study design, with case-control studies showing a stronger relative risk (relative risk 3.8, 95% confidence interval 2.3 to 6.4) than cohort studies did (relative risk 2.4, 95% confidence interval 2.1 to 2.8). Four studies, encompassing 170,640 pregnant women, provided data on the number of previous cesarean deliveries. These studies showed a dose-response pattern for the risk of previa on the basis of the number of prior cesarean deliveries. Relative risks were 4.5 (95% confidence interval 3.6 to 5.5) for one, 7.4 (95% confidence interval 7.1 to 7.7) for two, 6.5 (95% confidence interval 3.6 to 11.6) for three, and 44.9 (95% confidence interval 13.5 to 149.5) for four or more prior cesarean deliveries. Women with a history of spontaneous or induced abortion had a relative risk of placenta previa of 1.6 (95% confidence interval 1.0 to 2.6) and 1.7 (95% confidence interval 1.0 to 2.9), respectively. Paul Kiondo et al (2008)⁽⁴⁾ determined risk factors for placenta previa presenting severe vaginal bleeding in Mulago hospital Kampala. Risk factors identified were previous history of evacuation of uterus (OR=3.6, 95% CI- 1.1-12.5), delivery by caesarean section in previous pregnancy (OR=19.9, 95% CI- 6.4-61.7) recurrent vaginal bleeding (OR=7.3, 95% CI- 2.4-63.7). Previously, a few small studies have examined the association between assisted fertilization and the risk of placenta previa (Howe et al., 1990; Tan et al., 1992; Tanbo et al., 1995; Verlaenen et al., 1995; Reubinoff et al., 1997; Koudstaal et al., 2000; Shevell et al., 2005). Most studies found that placenta previa is more common after assisted reproduction. Six of these studies were included in a meta-analysis of complications after assisted fertilization (Jackson et al., 2004). The joint results indicated three-fold higher risk of placenta previa in pregnancies after assisted fertilization compared with naturally conceived pregnancies.⁽⁵⁾ Vergani P et al. (2009)⁽⁶⁾ conducted a

retrospective study, the authors describe a policy of expectant management in the largest series to date of 53 women with a cephalic presentation and a placental edge-to-os distance on TVS between 1-20 mm. Cases were divided into 2 groups: 1-10 mm from the os (n = 24 cases) and 11-20 mm (n = 29 cases). They found a cesarean section delivery rate of 75% and 31%, respectively, and an incidence of antepartum hemorrhage of 29% vs. 3%, respectively. The scans were all performed within 28 days of delivery at a mean gestational age of 36.4 weeks, and delivery occurred on average 10 days later. None of the 11-20 mm group required cesarean section delivery for antepartum hemorrhage, and none required cesarean section delivery in labor. They conclude that women with a placenta that is situated 11-20 mm away can be offered a trial of labor. Our study is comparable to study conducted by Marya G. Zlatnik et al (2005)⁽⁷⁾ studied maternal & neonatal morbidities associated with placenta previa & to quantify the risk of preterm delivery at each week until 37 weeks. Among the 38,533 women, 230 women had previa (0.6%). Patients with previa were more likely to be experience PPH (59.7% vs. 36.1%), & to receive a blood transfusion (11.8% vs. 2.7%). All comparisons were statistically significant with $p < 0.001$. Our study is comparable to study conducted by Silver-R et al(1984)⁽⁸⁾ reported the outcomes of 95 expectantly managed cases of placenta previa; all were diagnosed after 21 weeks' gestation. Patients at risk for preterm delivery because of hemorrhage or preterm labor received aggressive care, including multiple transfusions, volume expansion and tocolytic therapy, and amniotic fluid surfactant determinations, to achieve the goal of delivery at 37 weeks' gestation with mature fetal lung function. Eighty-six percent of 19 infants born weighing less than 2500 gm. were managed expectantly. Hemorrhage was the determinant in delivery timing in 50 cases. All four deaths were neonatal with birth weights less than 2200 gm. The perinatal mortality rate was (4.2%). The Cochrane systematic review (last updated November 2002)⁽⁹⁾ includes no new trials since the previous edition of this guideline. The three RCTs of interventions for placenta previa included involve a total of 114 women: one trial compared hospital versus home care⁽¹¹⁾ and two investigated the use of cervical cerclage.^(12,13) The trial by Wing et al.⁽¹¹⁾ compared 26 women allowed home with 27 women kept in hospital and the only significant difference was a reduction in hospital stay. With such a small study, underpowered to answer any questions on safety, the current standard of conservative inpatient management of women with major placenta previa in the late third trimester remains the cautious option. International opinion is more liberal, with the Royal Australian and New Zealand College of Obstetricians and Gynecologists recommending that all women at risk of major antepartum hemorrhage should be encouraged to

remain close to the hospital of confinement for the duration of the third trimester of pregnancy.⁽¹⁰⁾ Marya G. Zlatnik et al (2005)⁽⁷⁾ studied maternal & neonatal morbidities associated with placenta previa & to quantify the risk of preterm delivery at each week until 37 weeks. Among the 38,533 women, 230 women had previa (0.6%). Previa was significantly associated with PTD prior to 28 weeks (3.5% vs. 1.3%) & PTD prior to 32 weeks (11.7% vs. 2.5%). Previa was associated with low 5-minute Apgar scores (<7: 7.8% vs. 3.8%). All comparisons were statistically significant with $p < 0.001$ & remained so in multivariate analysis.⁽¹²⁾ It was found that advancing age, parity, previous cesarean section, abortion were associated with placenta previa. In the major types of placenta previa, the mode of delivery was lower segment caesarean section. Maternal morbidity was significantly associated with amount of blood loss. In our study perinatal mortality and morbidity was mainly due to prematurity. Expectant management was significantly associated with better fetal outcome indicated by APGAR score. High degree of clinical suspicion and accurate localization of placenta by ultrasonography and color Doppler served gold standard in placenta previa. Expectant management, good neonatal care and timely surgical intervention improve maternal and perinatal outcome in placenta previa.

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