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Dr. Chaithra M
Department of OBG, Vanivilas hospital, Bangalore medical college & Research Institute, Karnataka, India

Dr. Anitha GS
Department of OBG, Vanivilas hospital, Bangalore medical college & Research Institute, Karnataka, India

Dr. Sukanya S
Department of OBG, Vanivilas hospital, Bangalore medical college & Research Institute, Karnataka, India

Dr. Savitha C
Department of OBG, Vanivilas hospital, Bangalore medical college & Research Institute, Karnataka, India

Corresponding Author:
Dr. Chaithra M
Department of OBG, Vanivilas hospital, Bangalore medical college & Research Institute, Karnataka, India

Placenta praevia: A prospective study in a tertiary referral government hospital

Dr. Chaithra M, Dr. Anitha GS, Dr. Sukanya S and Dr. Savitha C

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Abstract
Introduction: In placenta previa, placenta is situated partly or wholly in lower segment. Bleeding occurs from the placental site when the lower segment stretches, which can be fatal to both the mother and the foetus.
Aims and Objectives: To study the relation between type of placenta previa and mode of delivery and to study the neonatal and maternal out come in cases of placenta previa.
Methodology: Prospective Observational study was done in the department of obstetrics and gynaecology, Vanivilas hospital, Bangalore from September 2018 to August 2019. Results were analysed and concluded.
Results: This study consists of 114 cases complicated with placenta praevia.19 cases (16.67%) had previous history of abortion, 13 cases (11.40%) had previous history of caesarean section and 2 cases (1.75%) had previous history of placenta previa. There were 51cases (44.74%) of minor degree of placenta previa and 63 cases (45.16%) of major degree of placenta previa.
Conclusion: Good ANC at the level of primary health centre, availability of a specialized professional at the level of PHC, for early recognition and diagnosis of placenta previa, correction of anemia during antenatal period, good counselling and reference to a tertiary hospital at an early stage will probably help in decreasing the maternal morbidity and perinatal mortality.

Keywords: placenta previa, vaginal delivery, caesarean section, peripartum hysterectomy

Introduction
The frequency of placenta previa is 3-5 per 1000 pregnancies thought out the world and is still increasing for the reason that of growing caesarean section rates [1]. The highest prevalence internationally is in Asian women, in whom the overall prevalence is 12.2 per 1000 pregnancies [2]. Defective vascularization of the endometrium due to scarring or atrophy caused by previous operations or infections may result in reduced differential growth of the lower uterine segment and less of an upward shift in placental location [3]. The frequency among all pregnancies is approximately 0.3-0.5%, with predominant risk factors being advanced maternal age, gestation with male foetus, smoking, multiparity, history of previous C-sections and/or habitual abortion, conditions that may lead to damage of the endometrial tissue [4]. The threat enhances with the increasing number of caesarean sections performed. The frequency is 2% after one previous caesarean section, 4.1% after two and it is 22% after three [5]. Placenta previa is associated with high parity, increasing maternal age, uterine abnormalities, smoking, previous placenta previa (Recurrence rate 4-8%), caesarean section, termination of pregnancy and intrauterine surgery [6].

Material and Method
A prospective observational study conducted at Vanivilas hospital between September 2018 to August 2019 for 12 months. All women with gestational age beyond 28 weeks and who were diagnosed with placenta previa at or after admission and during caesarean delivery were included in the study.

Inclusion criteria
1. All women whose gestational age was beyond 28 weeks and who were diagnosed with placenta previa at or after admission and during caesarean delivery are included in the study.

Exclusion criteria

1. Gestational age <28 weeks
2. Other causes of antepartum haemorrhage

The sample size was derived by including all the cases of placenta previa during the study period.

The following methods of statistical analysis have been used in this study.

SPSS version 16 were used for data entry and analysis.

1. Student's t test.
2. Proportions were compared using Chi-square test of significance.

In all the above tests, the ''p'' value of less than 0.001 was accepted as indicating statistical significance.

Results

During the study period, there was 16,145 deliveries, 114 cases (0.71%) was complicated with placenta previa.

Table 1: Table showing placenta previa in relation to age

Age in years	No. of cases	Percentage
<20 years	16	14.03%
21-25 years	48	42.11%
26-30 years	39	34.21%
>31 years	11	9.65%
Total	114	100%

According to table 1, maximum cases of placenta praevia (48) 42.11% occurred between 21-25 years, followed by (39cases) 34.21% in 26-30 years.

Table 2: Table showing placenta previa in relation to parity.

Parity	No. of cases	Percentage
Primigravida	26	22.81%
2-3	58	50.88%
>4	30	26.31%
Total	114	100%

According to table 2, maximum number of cases 58 (50.88%) were multigravida, 30 (26.31%) were grand multigravida and 26 (22.81%) of them were primigravidae. This shows that placenta previa is more common in multigravida than in primigravida.

Table 3: Table showing previous obstetric history in placenta previa

Previous obstetric history	No. of cases	Percentage
Abortion	19	16.67%
Previous C/S	13	11.40%
Previous placenta previa	2	1.75%
Primigravida	26	22.81%
No abnormality	54	47.37%
Total	114	100%

According to table 3, 19 cases (16.67%) had previous history of abortion, 13 cases (11.40%) had previous history of caesarean section and 2 cases (1.75%) had previous history of placenta previa. This shows abortion, caesarean section and previous placenta previa are the risk factors for placenta previa. And the recurrence rate of placenta previa was 1.75% in our study.

Table 4: Table showing Gestational age at the time of delivery.

Gestational age	No. of cases	Percentage
28-32 weeks	46	40.35 %
33-36weeks	31	27.19%
>36weeks	37	32.46%
Total	114	100%

According to table 4, 46 cases (40.35%) delivered between 28-32 weeks and 31 cases (27.19%) delivered between 33-36weeks. Only 37cases (32.46%) reached 36 completed weeks. This shows majority of the patient with placenta previa had preterm deliveries.

Table 5: Table showing relation between type of placenta previa and mode of delivery.

Type of placenta previa	No. of cases	Percentage	C/S	Vaginal delivery
I	26	22.81%	14	12
IIA	25	21.93%	23	2
IIP	18	15.79%	17	1
III	27	23.68%	27	-
IV (Central)	18	15.79%	18	-
Total	114		99(86.84%)	15(13.16%)

According to table 6, Minor degree of placenta previa- 51 cases (44.74%) type I and type II anterior. Major degree of placenta previa-63 cases (45.16%) type II posterior, type II and type IV. Out of 51 cases of minor degree placenta previa, 37 cases underwent C/S and 14 cases delivered vaginally. Out of 63 cases of major placenta previa, 62 cases underwent C/S and only 1case delivered vaginally and that was the case of type IIP placenta previa. This shows that almost all cases with major degree placenta previa underwent c-section and most of the cases with type IIA underwent c-section.

Table 6: Table showing maternal complication in placenta previa.

Complication	No. Of cases	Percentage
PPH	12	10.53%
Peripartum hysterectomy	6	5.26%
Hemorrhagic shock	6	5.26%
Blood and blood product transfusion	52	45.61%
Puerperal sepsis	1	0.87%
Wound gaping	3	2.63%
Renal failure	2	1.75%
Bladder injury	1	0.87%
ICU admission	10	9%
Maternal death	2	1.75%

According to table 6, 12 patients with placenta previa had PPH, out of which 9 managed by conservative surgical measures like cervico isthmic apposition stitch, B-lynch stitch and uterine artery ligation. 3 cases underwent emergency peripartum hysterectomy when conservative measures failed to control bleeding. There were 2 case of adherent placenta and 1 case of placenta percreta and all 3 underwent peripartum hysterectomy. Case of placenta percreta had bladder injury which was repaired. 52 patient received blood transfusion; among them 16 patients had received one-unit transfusion whereas 36 patient required transfusion of more than one unit.

2 maternal death-PPH with hypovolumic shock (Antecedental cause- placenta previa with APH).

Table 7: Table showing neonatal outcome in placenta previa.

Factors	No. Of cases	Percentage
Low birthweight <2.5 kg	48	42.11%
Preterm birth <37 weeks	77	67.54%
Still birth	12	10.53%
Early neonatal death	20	17.54%
Congenital anomaly	1	0.88%

According to table 7, 42.11% were low birthweight, 67.54% were preterm birth, 10.53% were still birth, 1 had congenital anomaly (Gastrochisis). This shows that most of the patient with placenta previa had preterm birth with majority of them having low birth weight.

Discussion

In our study, 114 cases (0.71%) was complicated with placenta praevia which was similar to Bahar *et al.*, [7]. Meena *et al.*, [8] and Purvi *et al.* [9] where the incidence of placenta previa was 0.73%, 0.76% and 0.82% respectively. In our study, 12 patients with placenta previa had PPH, out of which 9 were managed by conservative surgical measures like cervico isthmic apposition stitch, B-lynch stitch and uterine artery ligation. 3 cases underwent emergency peripartum hysterectomy when conservative measures failed to control bleeding when compared to Manohar Rangaswamy *et al*. study in which Out of 62 cases 10 (16.1%) cases had Atonic PPH, 4 (6.4%) cases were minor degree PPH and 6 (9.6%) cases were of major degree of PPH, of which 4 cases went for haemorrhagic shock. Of these 4 cases, 2 cases were controlled by medical and surgical (bilateral uterine ligation) and 2 cases landed up in hysterectomy due to Intractable PPH [10].

In our study, 42.11% cases were of low birth weight <2.5 kg when compared to Manohar Rangaswamy *et al*. study [10]. In which out of 62 cases, 32 (51.6%) cases were of birth weight <2.5 kg and 30 (48.3%) cases >2.5 kg.

Conclusion

Good ANC at the level of primary health centre, availability of a specialized professional at the level of PHC, for early recognition and diagnosis of placenta previa, correction of anemia during antenatal period, good counselling and reference to a tertiary hospital at an early stage will probably help in decreasing the maternal morbidity and perinatal mortality.

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