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A CLINICAL STUDY OF PLACENTA PREVIA –MATERNAL AND PERINATAL OUTCOME

KEYWORDS

Placenta previa; maternal morbidity; Neonatal mortality.

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ABSTRACT

Aim: analysis of maternal and fetal outcome in pregnancy complicated with placenta previa and to evaluate the potential risk factors

Methods: 50 pregnancies with placenta previa during a 2 years study period (2014-2016) were analyzed. The total number of deliveries during the study period was 4759. The data on the potential risk factors compiled; the information on the maternal and neonatal outcome was subjected to appropriate statistical analysis and following deductions provided

Result: The incidence of placenta previa was 1.8%. Factors significantly

associated with development of placenta previa were advanced maternal age, number of previous cesarean section, number of previous abortions and multiparity The complications seen most commonly in the neonatal outcome was prematurity at birth (42.85%) followed by RDS (28.5%) and aspiration (14.2%). 48% of the babies required resuscitation, out of which 24% required further NICU admission. The neonatal mortality calculated was 280/ 1000 live births.

Conclusion: Inspite of 24 hours emergency services being available, and ear1y diagnosis being at hand, lots more is required to bring down the maternal morbidity and neonatal mortality and morbidity to international standard for us to do justice to the patients.

Aim of the study

1. To study the risk factors for placenta previa.
2. To study the signs of placenta previa.
3. To study the mode of deliveries
4. To study the maternal and fetal outcome.
5. To study the incidence of placenta previa.

METHODOLOGY

Material of the Study:

Analysis of maternal and neonatal outcome in cases of placenta previa occurring over a period of 2 years from June 2014 to July 2016. This study was carried out at the Basaveshwar Teaching & General Hospital and Sangameshwar Teaching and General Hospital, Gulbarga attached to M.R.Medical College, Gulbarga.

The present study group consisted 50 cases of pregnancies with placenta previa, selected randomly.

Inclusion Criteria:

Pregnant women with placenta previa confirmed by ultrasonography and with gestational age beyond 28 weeks were selected irrespective of their parity, type of placenta previa and with a live or dead fetus.

RESULTS

The total number of in the study period, July 2014 to 2016 are 4759, out of which 233 patients presented with antepartum hemorrhage. Percentage of women presenting with APH is 4.9%. 88 cases of placenta previa were managed, giving an incidence of 1.8%.

Table-1: Incidence of Placenta Previa

Total number of births	4759
Total number of cases of APH	233
Total number of cases of placenta previa	88
Incidence of APH	4.9%
Incidence of placenta previa	1.8%
Total number of perinatal deaths due to various causes	389
Total number of perinatal deaths due to placenta Previa	24
General perinatal mortality rate	18/1000 live births
Perinatal mortality rate in placenta previa	280/ 1000 live births
NICU admissions	12/50 (24%)
Maternal deaths due to placenta previa	Nil

The out of our study group of 50 cases of placenta previ 24 cases had minor degree of placenta previa and 26 cases had major degree of placenta previa. 41 cases were delivered by cesarean section, 38 as emergency, 3 as elective and 9 cases delivered vaginally.

In the present study, the following results have been discussed under the following headings:

1. The incidence of placenta previa.
2. Correlation of maternal age and placenta previa.
3. Correlation of parity and placenta previa.
4. Risk factors in placenta previa.
5. Antenatal complications associated with placenta previa&
6. Intra and post-operative complications noted in the cases studied.
7. Mode of delivery.
8. The perinatal morbidity in placenta previa.
9. The perinatal mortality rate.
10. Correlation between perinatal mortality and type of placenta previa.
11. Correlation between perinatal mortality and gestational age.
12. Correlation between perinatal mortality and birth weight of infants.

The results of analysis of the booking status of these 50 women enrolled in the study showed that 30 (60%) cases had been booked with regular ANC, while 20(40%) cases remained unbooked.

Table-2 ANC status

Study	ANC Status			
	Booked		Unbooked	
	No.	Percent	No.	Percent
Percent Study	30	60.00	20	40.00

Regarding the maternal age, the' maximum number of patients i.e., 35 (70%) women were between the age group of 20-29 years, followed in descending order by 8 (16%) women in 30-35 years age group. 6 (12%) women were more than 35 years and one woman (2%) was less than 19 years.

Table-3: Correlation of Parity and Placenta Previa

Parity	No. of cases (n =50)	Percentage

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Primi	10	20.00
Multi (2-3)	28	56.00
Grand multi (>4)	12	24.00

Mean Parity = 2.5

In the present study the incidence of placenta previa was highest (56%) in multigravidas (with two to three viable births). The incidence in grand multi's (>4 viable births) was 24% and in primi's it was 20%, clearly depicting that 80% of cases of placenta previa were seen in multi's and grand multiparous women.

Table – 4 Risk factors for placenta previa

Risk factor	No. of cases (n =50)	Percentage
Previous Caesarean Section	6	12.00
Previous Abortion	9	18.00
Spontaneous	5	10.00
With D&C	4	8.00
Twin gestation	1	2.00

Past history of the patients analyzed, which showed that 6 (12%) women had one or more previous LSCS. Nine women (18%) had undergone abortions previously, out of which 4 women (8%) had D&C done. The incidence of twin gestation in the present study was in 1-case (2%).

Table -5 Route of delivery: Abdominal

Route of delivery	No. of cases	Percentage
Pregnancy	38	76.00
Elective	3	6.00

Table -6 : Route of delivery: Vaginal

Route of delivery	No. of cases	Percentage
Augmented with oxytocin	3	6.00
Spontaneous	6	12.00

9 cases (18%) delivered vaginally. In the vaginal delivery group, 3 cases (6%) were augmented with oxytocin and had no perinatal mortality, while 6 had spontaneous delivery, with perinatal mortality of 33%.

Mean duration of prolongation of hospital stay with expectant management was 6 days.

Table-7 Maternal Hemoglobin at Admission

	<5gm	5—7gm	7—9gm	9-10gm	>10gm
No. of Cases	8	8	17	4	13
Percent	16.00	16.00	34.00	8.00	26.00

Mean hemoglobin percent = 7.8 gm

Statistically 16 cases (32%) of women presented with severe anemia (Hb% < 7g%) and 8 cases (16%) had hemoglobin <5 gms and the mean hemoglobin was 7.8 gms. Lowest hemoglobin recorded was 3.5 gms. Eight (8) cases presented with shock i.e., 16% of women needed acute emergency care.

Table -8 : Correlation of hemodynamic status at admission and perinatal outcome

	Minor type of placenta previa		Major type of placenta previa	
	No.	Perinatal mortality	No.	Perinatal mortality
Patients in shock	-	-	8	5
Patients not in shock	23	4	19	5

x^2=5.62 p<0.05 Significant

All the cases in shock were of major degree of placenta previa and perinatal mortality was 62%. Hence, there is a significant higher perinatal mortality seen in patients presenting with shock when compared to patients presenting with stable vital parameters.

Table -9 Blood Transfusion

	No. of pints of blood transfusions			
	1	**2**	**3**	**4**
No. of Patients	7	15	6	1

Mean =2.03 units

29 cases (58%) of the women admitted required blood transfusion in quantities as per their general condition. A total of 59 units of blood were transfused, hence mean units transfused per percent is 2.03.

Table-10: Blood transfusion in antepartum, intrapartum and postpartum

Period	No. of units blood	Percent	No. of patients	Percent
Antepartum	06	10.00	03	06.00
Intrapartum	04	6.70	02	04.00
Postpartum	49	83.00	24	48.00
Total	59	100.00	29	100.00

Out of the 29 (58%) cases requiring blood transfusions, 3 (6%) cases received blood antenatally, 2 (4%) cases received blood intrapartum and 24 (48%) women received blood in postpartum. 8 (16%) women required blood transfusion but, were unable to arrange and were hemodynamicaly stable in the puerperium. They were given parentral iron therapy with iron sucrose in calculated doses.

Table-11: Correlation of maternal Hb with perinatal outcome

	Hb in grams				
	<5	5-7	7-9	9-10	>10
No. of patients	8	8	17	4	13
Perinatal mortality	5	4	3	1	1
Percent	62	50	17	25	7.6

x^2 4.81 p,0.05 significant

The above results prove that, there is a high perinatal mortality in women with severe anemia (<7 gms), and this association with the x2 test is significant statistically.

Table -12 : Mode of delivery and perinatal mortality

	Vaginal (all cases of minor placenta previa) (n=9)		LSCS (major-26 and minor-15 PP) (n=41)	
	Spontaneous	Augmented with pitocin	Emergency	Elective
No. of patients	6(12%)	3(6%)	38(76%)	3(6%)
Perinatal mortality	2(13%)	0	12(87%)	0

We allowed only those cases of minor placenta previa admitted in labor and who were not bleeding actively to deliver vaginally. Five cases were managed expectantly, out of which 3 cases were taken for elective LSCS. Two cases went for emergency LSCS, while remaining 38 (76%) cases had major placenta previa with severe to moderate PV bleeding. and were taken for emergency LSCS irrespective of the gestational age; for maternal safety. There is no significant difference in the perinatal outcome with the mode of delivery; whether vaginal or LSCS. This can be explained, as only patients in second stage of labor or with minor placenta previa and not actively bleeding were allowed vaginal delivery where as, all critical patients and those women with major placenta previa were taken for emergency LSCS immediately. Hence, the outcome is biased and cannot be authenticated with our belief that emergency LSCS is the treatment of choice in major placenta previa in patients with critical hemodynamic state.

Neonatal Outcome: At the time of delivery 39 (78%) cases gave birth to live neonates, 11(22%) cases had still born babies and 3 (6%)

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neonates died in the early neonatal period.

Table -13: Condition of fetus at birth

Outcome	Maturity & Mode of Delivery				Total	Percent
	Term (n=5)		Preterm (n=5)			
	LSCS	Vaginal	LSCS	Vaginal		
Alive	3	0	29	7	39	78
IUD	1	1	8	1	11	22

Among the 11 IUD, 9 (81%) cases were preterm newborns clearly depicting that prematurity is one of the most important factor responsible for neonatal death with placenta previa.

Table -14: Perinatal morbidity

Morbidity	Term	Preterm	Total	Percent
Resuscitation	1	23	24	48.00
NICU admission	--	12	12	24.00

In the present study, 24 (48%) babies receive resuscitation out of which 23 (46%) babies were premature and 1 (2%) baby was a term neonate. NICU admission in 12 (24%) babies, all of which were premature.

Table-15: Apgar score according to gestational age and management protocol

Apgar score	Gestational age (Weeks)					
	28-33		34-36		37 & above	
	Active	Expectant	Active	Expectant	Active	Expectant
At 1 min	4.4±1.8	5.5±1.5	5.26±1.6	6.5 ±0.5	5.0±2.0	7.00
At 5 min	7.67±1.4	7.0±1.0	8.13±0.9	9.0±0.00	7.0±1.0	9.00
't' at 1 min	1.1	p>0.05 NS	2.4	P<0.05. S	--	--
't' at 5 min	0.09	p>0.05 NS	4.1	P<0.05 S	- -	--

The above table indicates that the perinatal care is lacking in cases of preterm babies and hence, there is no significant difference in the Apgar scores between the actively and expectantly managed babies in the age group of 28-33 weeks. At the same time, the outcome is better with expectantly managed babies in the age group of 34-36 weeks of gestation.

Table -16 : Neonatal outcome in the live born fetuses

Neonatal outcome	Term	Preterm	Total	Percent
No. of neonates requiring no resuscitation	3	23	26	52.00
NICU admissions	--	12	12	24.00
Expired within 48 hours	--	3	3	6.00
Recovered	--	9	9	18.00

26 (52%) cases of neonates required no resuscitation. Out of the 12 (24%) premature babies shifted to NICU, 3 (6%) babies died within 48 hours and 9 (18%) babies recovered and shifted to mother's side. The perinatal mortality in the present study is 28%.

Discussion

1. In the present study, 50 cases of placenta previa were studied regarding the type of clinical presentation, the clinical course, the perinatal and maternal outcome. The information obtained was analyzed statistically.

2. In this study, it was observed that the incidence of APH was 4.9% out of the total number of deliveries and placenta previa contributed to 37% of cases of APH.

3. In the present study the cases of placenta previa were highest in the maternal age group of 20-29 years i.e., 70%. It was 16% in the age group 30-35 years, 12% in the age group >35 years and 2% in the age group of <19 years. The mean age ± SD in the present study was 25.96 ± 4.7 years.

4. In the present study, incidence of placenta previa was highest (5 6%) in the multiparous (2-3 viable births) group. It was 24% in the grand multi group (>4 viable births) and 10% in the primi group.

5. In the present study, the risk factors studied were cesarean section, abortion and twin gestation. The incidence of prior cesarean section was 12%, prior abortion was 18% and twin gestation in present pregnancy was 2%.

6. Of the complications studied, in the present study severe anemia (<7gm%) contributed to 32%, malpresentation contributed to 14% and PIH was found in only 2% of cases.

7. In the present study 58% of cases required blood transfusion and shock! hypotension was noticed in 12% of cases, PPH was noticed in 10% of cases. In one case B-lynch was utilized to control intraoperative atonic PPH and in 2 cases Cho's multiple hemostatic sutures used for the bleeding from the placental site. Post-operative febrile morbidity was seen in 16% of cases and sepsis complicated 6% of cases.

8. In the present study, perinatal morbidity was studied as the percentage of babies requiring resuscitation and NICU admission. It was 48% and 24% respectively.

9. In the present study, the percentage of perinatal deaths was 28%. Prematurity was the major contributor to perinatal deaths i.e., 42.85% followed by RDS 28.5%, and aspiration contributed to 14.2% each.

10. The perinatal mortality was the same in both the clinical types of placenta previa i.e., chi square value was 1.26, which is not significant.

11. The perinatal mortality was more in the 28-33 weeks gestation group i.e., 51.6% whereas in the 34-3 6 weeks and 37+ weeks gestation group, it was 34.28% and 14.28%. The chi square value was 12.1, which is highly significant.

12. Infants with birth weights above 2500 grams had a good survival rate and infants with birth weight <1000 grams had a very poor survival rate

Conclusion

In the present study, the incidence of antepartum hemorrhage was 4.9% and placenta previa contributed to 37% of cases. The general perinatal mortality was 81 per 1000 live births and that due to placenta previa was 280 per 1000 live births i.e., approximately 4 time higher than the general perinatal mortality rate. The maternal mortality rate due to placenta previa in this study was nil but maternal morbidity was high i.e., more than 60% of cases had antenatal, intranatal and! or postnatal complications and anemia worsened the clinical state of the Patients.

As the maternal and perinatal morbidity and mortality due to placenta previa is preventable, efforts should be made to bring down these rates. This can be achieved by better spacing in between pregnancies, limitation of family size, antenatal registration of all pregnant women, routine use of USG in pregnancy and early referral of high risk pregnant women to tertiary care centres. Awareness should be brought about in the urban sluths and rural public to avail the facilities provided by the government.

These measures will definitely help in a better outcome for both mother and fetus in all high-risk pregnancies.

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