ORIGINAL RESEARCH

Placenta previa and its maternal and perinatal outcomes: A cohort study

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ABSTRACT

Background: The most important link between the mother and the developing fetus is placenta. When the placenta is implanted either partially or completely over the lower uterine segment,it is called placenta Previa.

Aim: To analyse the Maternal and Perinatal outcome in cases of Placenta Previa with Previous Cesarean section.

Methodology: AllAntenatal women with gestationalage>34 weeksandwith previouscesareansections willbescreenedby USGand60Placentapreviapatientswillbeenrolledforcohortand60 non placenta previa patients willbe enrolledforcohortcontrol. The study was conducted in Government Kilpauk Medical College and Hospital between **July 2020 to September 2020.**

Results and Conclusions: According to our present study, patients with previous LSCS are more prone to develop placenta previa. The study group had more complications compared to the control group.Most of the cases of placenta previa are associated with previous caesarean section. Therefore, an effort to reduce primary caesarean section must be undertaken as a preventive measure in reducing prevalence of Placenta Previa. Month audit meeting, discussing regarding the indication and validation of primary sections must be done so as to reduce the rates of caesarean section.

Key words: Placenta previa,previousLSCS, maternal andperinatalmortality

INTRODUCTION

The most important link between the mother and the developing fetus is placenta. When the placenta is implanted either partially or completely over the lower uterine segment, it is called placenta Previa.Usually the placenta is situated in the upper uterine segment near the fundus on the posterior wall. But due to many factors placental position varies and may occupy the lower uterine segment. Placenta previa is classified into

- **TOTAL PLACENTA PREVIA:** The internal os is covered completely by placental tissue.
- **PARTIAL PLACENTA PREVIA:** The internal os is covered partially by placental tissue.
- **MARGINAL PLACENTA PREVIA:** The placental edge comes up to the internal os but does not cover it.
- **LOW LYING PLACENTA:** Placenta lies within 2 cm of the internal os but does it cover it.

AIM AND OBJECTIVE OF THE STUDY

AIM: To find out the Maternal and Perinatal outcome in cases of Placenta Previa with Previous Cesarean section.

OBJECTIVES

1) To describe the Maternal outcomes in Placenta Previa with Previous LSCS.
- Preterm/Term delivery.
- Postpartum hemorrhage.
- Peripartum hysterectomy.
- Elective ventilatory support.

2) To describe the Fetal outcomes in Placenta Previa with Previous LSCS.
- Preterm babies.
- Apgar score-low.
- Low birth weight.
- Neonatal complications.

MATERIALS AND METHOD

RESEARCH DESIGN: Retrospective and Prospective Cohort Study.

STUDY SETTING: The study was conducted in Government Kilpauk Medical College and Hospital between **July 2020 to September 2020.**

METHODOLOGY: AllAntenatal womenwith gestationalage>34 weeksandwithpreviouscesareansections willbescreenedby USGand60Placentapreviapatientswillbeenrolledforcohortand60 non-Placenta previa patients willbe enrolledforcohortcontrol.The following independent risk factors are analysed in both the groups

1) Age.
2) Gravida.
3) BMI.
4) Previous history of Placenta Previa.
5) Previous history of any other surgeries.
6) Family history for passive smoking.

RESULTS

Table1: Age Distribution

Group					
			Cohort PP	**Control**	**Total**
Age Group	<=30	Count	47	50	97
		% within GROUP	78.3%	83.3%	80.8%
	>30	Count	13	10	23
		% within GROUP	21.7%	16.7%	19.2%
	Total	Count	60	60	120
		% within GROUP	100.0%	100.0%	100.0%

Majority of the study subjects in control group were in the age group < 30 years (n = 50, 83.3%) and in the case group were in the age group of < 30 years (n = 47, 78.3%). Below the age group of 30 years, 97 patients were recruited of which 47 (78.3%) were in case group and 50 (83.3%) were in control group.Above the age group of 30 years, 23 patients were recruited of which 13 (21.7%) were in case group and 10 (16.7%) were in control.

Table2: Family History of Passive Smoking

Group					
			Cohort PP	**Control**	**Total**
Passive Smoking	NO	Count	32	48	80
		% within GROUP	53.3%	80.0%	66.7%
	YES	Count	28	12	40
		% within GROUP	46.7%	20.0%	33.3%
	Total	Count	60	60	120
		% within GROUP	100.0%	100.0%	100.0%

P value <0.004,OR: 3.5

The percentage of passive smoking in the study subjects is (n = 40, 33.3%), in the case group (n = 28, 46.7%) and in the control group (n = 12, 20%). Passive smoking increases the risk of placenta previa 3.5 times compared to non-passive smoking with a p <0.004.This concludes that passive smoking is one of the risk factors for placenta previa.

Table3: Previous History of Abortion

Group					
			Cohort PP	**Control**	**Total**
Previous History of Abortion	NO	Count	38	52	90
		% within GROUP	63.3%	86.7%	75.0%
	YES	Count	22	8	30
		% within GROUP	36.7%	13.3%	25.0%
	Total	Count	60	60	120
		% within GROUP	100.0%	100.0%	100.0%

Women with previous abortion had 3.7 times higher risk of developing placenta previa than those without abortion. It is strongly significant p <0.006.

Table4: Antepartum Hemorrahge

Group					
			Cohort PP	**Control**	**Total**
APH	NO	Count	31	60	91
		% within GROUP	51.7%	100.0%	75.8%
	YES	Count	29	0	29
		% within GROUP	48.3%	.0%	24.2%
	Total	Count	60	60	120
		% within GROUP	100.0%	100.0%	100.0%

Among the study group, 29 patients had Antepartum Hemorrhage and all the 29 patients belonged to the case group.

Table5: Postpartum Hemorrhage

Group					
			Cohort PP	**Control**	**Total**
PPH	NO	Count	33	56	89
		% within GROUP	55.0%	93.3%	74.2%
	YES	Count	27	4	31
		% within GROUP	45.0%	6.7%	25.8%
	Total	Count	60	60	120
		% within GROUP	100.0%	100.0%	100.0%

Postpartum Hemorrhage was seen among 31 patients of which 27 patients belonged to the case group (n = 27, 45%) and 4 in the control group (n = 4, 6.7%).

Table6: Blood Transfusion

Group					
			Cohort PP	**Control**	**Total**
Blood Transfusion	NO	Count	26	58	84
		% within GROUP	43.3%	96.7%	70.0%
	YES	Count	34	2	36
		% within GROUP	56.7%	3.3%	30.0%
	Total	Count	60	60	120
		% within GROUP	100.0%	100.0%	100.0%

Placenta previa is a major cause of hemorrhage, a total of 34 patients from the case group required blood transfusion (n = 34, 56.7%) and only 2 required blood transfusion in the control group (n = 2, 3.3%)

Table7: Internal ILIAC Artery Ligation

Group					
			Cohort PP	**Control**	**Total**
Internal Iliac Ligation	NO	Count	43	60	103
		% within GROUP	71.7%	100.0%	85.8%
	YES	Count	17	0	17
		% within GROUP	28.3%	.0%	14.2%
	Total	Count	60	60	120
		% within GROUP	100.0%	100.0%	100.0%

Internal iliac artery ligation was done for 17 patients, and all the 17 belonged to the placenta previa cohort group (n = 17, 28.3%).

Table8: Peripartum Hysterectomy

Group					
			Cohort PP	**Control**	**Total**
Hysterectomy	NO	Count	56	60	116
		% within GROUP	93.3%	100.0%	96.7%
	YES	Count	4	0	4

		% within GROUP	6.7%	.0%	3.3%
	Total	Count	60	60	120
		% within GROUP	100.0%	100.0%	100.0%

Peripartum Hysterectomy was done for 4 patients, and all the 4 belonged to the placenta previa cohort group (n = 4, 6.7%).

Table9: Post LSCS Elective Ventilation

Group					
			Cohort PP	**Control**	**Total**
Post LSCS Ventilation Support	NO	Count	59	60	119
		% within GROUP	98.3%	100.0%	99.2%
	YES	Count	1	0	1
		% within GROUP	1.7%	.0%	.8%
	Total	Count	60	60	120
		% within GROUP	100.0%	100.0%	100.0%

Post LSCS elective ventilation was given for only 1 patient, belonged to the placenta previa cohort group.

Table10: Puerperal Sepsis

Group					
			Cohort PP	**Control**	**Total**
Puerperal Sepsis	NO	Count	57	60	117
		% within GROUP	95.0%	100.0%	97.5%
	YES	Count	3	0	3
		% within GROUP	5.0%	.0%	2.5%
	Total	Count	60	60	120
		% within GROUP	100.0%	100.0%	100.0%

Puerperal sepsis was foundamong 3 patients, and all the 3 belonged to the placenta previa cohort group(n = 3, 5%).

Table11: Malpresentation

Group					
			Cohort PP	**Control**	**Total**
Malpresentation	Breech	Count	23	2	25
		% within GROUP	38.3%	3.3%	20.8%
	Head	Count	33	58	91
		% within GROUP	55.0%	96.7%	75.8%
	Transverse	Count	4	0	4
		% within GROUP	6.7%	.0%	3.3%
	Total	Count	60	60	120
		% within GROUP	100.0%	100.0%	100.0%

In our study, 55% of babies were delivered by cephalic presentation followed by 38.3% by breech presentation.

Table12: Preterm Babies

Group					
			Cohort PP	**Control**	**Total**
Preterm Babies	NO	Count	0	39	39
		% within GROUP	.0%	65.0%	32.5%
	YES	Count	60	21	81
		% within GROUP	100.0%	35.0%	67.5%
	Total	Count	60	60	120
		% within GROUP	100.0%	100.0%	100.0%

In our study, all the babies were delivered before 37 weeks and all the babies were preterm babies.

Table13: Neonatal Complications

Group					
			Cohort PP	**Control**	**Total**
Neonatal Complication	NO	Count	45	58	103
		% within GROUP	75.0%	96.7%	85.8%
	YES	Count	15	2	17
		% within GROUP	25.0%	3.3%	14.2%
	Total	Count	60	60	120
		% within GROUP	100.0%	100.0%	100.0%

In our study, 25% of the babies in the placenta previa group had neonatal complication.

Table 14: Congenital Malformation

Group					
			Cohort PP	**Control**	**Total**
Congenital Malformation	NO	Count	57	58	115
		% within GROUP	95.0%	96.7%	95.8%
	YES	Count	3	2	5
		% within GROUP	5.0%	3.3%	4.2%
	Total	Count	60	60	120
		% within GROUP	100.0%	100.0%	100.0%

In our study, 5% of babies had congenital malformation.

Conclusion

Placenta previa is an obstetric emergency and is one of the leading causes of maternal and perinatal morbidity and mortality. Most of the cases of placenta previa are associated with previous caesarean section. Therefore, an effort to reduce primary caesarean section must be undertaken as a preventive measure in reducing prevalence of Placenta Previa. Month audit meeting, discussing regarding the indication and validation of primary sections must be done so as to reduce the rates of caesarean section.

Dilatation and curettage is another major risk factor for developing placenta previa, so medical method of abortion should be practised in most of the cases.

With the advent of Ultrasound, early diagnosis of placenta previa can be made with a good accuracy. Optimal training to health care professionals in the Primary health care centres, in visualizing placental positions can drastically reduce the morbidity and mortality associated with placenta previa by facilitating timely referrals to tertiary care centres. Referrals audits meetings must be held in order to help streamline early referrals to higher centres.

Tertiary centres must be adequately equipped with blood and blood products to deliver expectant management in a timely manner. Obstetricians must receive sufficient training and proficiency in performing various life-saving procedures and must anticipate various complications associated with it.

All cases of placenta previa must be delivered in a tertiary hospital along with a good neonatal setup as it is associated with higher incidence of preterm and low birth weight infants.

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