International Journal of Clinical Obstetrics and Gynaecology

ISSN (P): 2522-6614
ISSN (E): 2522-6622

www.gynaecologyjournal.com
2022; 6(5): 20-23
Received: 12-06-2022
Accepted: 16-07-2022

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A study on fetomaternal outcome in cases of placenta previa in a tertiary health care hospital

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DOI: https://doi.org/10.33545/gynae.2022.v6.i5a.1205

Abstract
Introduction: Incidence of placenta previa is 3-5 per 1000 pregnancies. Placenta previa includes: (i) Placenta previa i.e. when placenta lies directly over the internal os. (ii) Low lying placenta i.e. when the lower edge of placenta is within 20mm distance from internal os.
Objectives: The objective of the study was to determine the incidence, obstetric risk factors, obstetric management, maternal complications including mortality and fetal outcome in patients presenting with placenta previa.
Methodology: A retrospective study was conducted over a period of 1 year in the department of Obstetrics and Gynaecology, tertiary health care Government Maternity hospital, Andhra Pradesh. A total of 53 women with placenta previa were enrolled in this study and necessary information was noted and analysed.
Results: About 0.9% of the deliveries were complicated with placenta previa among which 12.3% of women with >30years, 76.7% of women were multigravida, 32.9% of women with prior c-sections, 27.4% of women had prior abortions, 52% of women had major degree of placenta previa, 100% of women delivered by caesarean delivery, 34.2% of women had PPH with 4% mortality and 31.5% perinatal mortality.
Conclusion: Placenta previa is one of the life threatening complication of pregnancy and its incidence is rising probably parallel to the rise in abortions and c-sections, about 60% of cases with placenta previa had prior surgical procedures. Meticulous management of placenta previa is important in order to reduce maternal and fetal complications.

Keywords: Placenta previa, placenta accreta spectrum, caesarean hysterectomy

Introduction

Incidence of placenta previa is 3-5per 1000 pregnancies. Placenta previa includes: (i) Low lying placenta i.e. when the lower edge of placenta is within 20mm distance from internal os. (ii) Placenta previa i.e. when placenta lies directly over the internal os [1]. Maternal and fetal morbidity and mortality from Placenta previa are considerable, and associated with high demands on health care resources. The rising incidence of cesarean section combined with increasing maternal age, the number of cases of placenta previa and its complications, including placenta accreta spectrum (PAS), will continue to increase. Majority of the painless vaginal bleeding in the 2nd half of the pregnancy are associated with placenta previa, more common with neglected pregnancies, increased parity and advancing age [2]. Incidence is much higher in mid pregnancy possibly due to placental migration resulting in resolution of placenta previa in late pregnancy [3]. Availability of blood for transfusion have dramatically decreased maternal mortality, morbidity and with better NICU facilities available, perinatal morbidity and mortality has certainly been curtailed to a large extent [4].

Aims and Objectives: To analyse incidence, maternal and neonatal outcome in pregnancies complicated with placenta previa and to evaluate the potential risk factors.

Materials and Methods: A retrospective study was conducted at Government Maternity Hospital in the department of Obstetrics and Gynaecology, where in analysis of maternal and neonatal outcome in cases of placenta previa over a period of 1 year from January 2020 to December 2021 was done. A necessary information regarding history, clinical examination, investigations, maternal and fetal outcome were noted from existing medical records and were analysed. Maternal morbidity, including post-partum hemorrhage, caesarean hysterectomy,

admission to ICU and mortality were also recorded. Neonatal evaluation included neonatal birth weight, Apgar score, admission to the NICU and perinatal mortality. Total of 53 cases were enrolled in the present study.

Inclusion Criteria: Singleton pregnant women with placenta previa confirmed by ultrasonography and with gestational age beyond 28 weeks were selected irrespective of their parity and with a live or dead fetus.

Exclusion Criteria: Women with multiple gestation pregnancies are excluded.

Study Results

Table 1: According to the age of the patient

Age of the patient (years)	Total no. of cases 53	Percentage (100%)
<20	1	1.4%
20-24	27	50.9%
25-29	19	35.4%
>/=30	6	12.3%

Out of 53, 27 were between the age 20-24years which was 50.9%, and 6 were aged >/=30 years which was 12.3%.

Table 2: According to parity

According to parity	Total no of cases 53	Percentage %
Primigravida	12	23.3%
multigravida	41	76.7%

Out of 53 cases 41 were multigravida which accounts for 76.7%, primigravida were 12 which accounted for 23.3%.

Table 3: According to presenting complaints

Asymptomatic	31	57.5%
Active bout of bleeding	19	35.6%
Labour pains	2	4.1%
Draining per vaginum	1	2.7%

Out of 53 patients 31 were asymptomatic at the time of admission which accounted for 57.5%, 19 had active bout of bleeding which accounted for 35.6%.

Table 4: According types of placenta previa

Types of placenta previa	Total no of patients 53	Percentage %
Low lying placenta	25	46.6%
Placenta previa	28	53.4%

Out of 53 cases 28 had placenta previa type which accounted for 53.4%, 25 cases had low lying type which accounted for 46.6%.

Table 5: Placenta accreta spectrum

Placenta accreta spectrum (3 out of 53 cases)	Total no of cases 53	Percentage 5.5%
Placenta accreta	1	1.5%
Placenta increta	1	1.6%
Placenta percreta	1	2.4%

Among 53 cases 3 cases had placenta accreta spectrum which accounted for 5.5% of which 1 was placenta accreta, 1 was placenta increta, and 1 was placenta percreta types of placenta accreta spectrum.

Table 6: Previous history

	Total no of cases 53	Percentage %
Prior abortions	14	27.4%
Prior c-sections	18	32.9%
Prior NVD's	9	16.4%

Among 41 multigravida cases 18 patients had prior c-section history which accounted for 32.9%, 14 with prior abortion history which accounted for 27.4%.

Table 7: Mode of Delivery

Emergency/ Elective	Total no of cases	Percentage%
Emergency	47	89%
Elective	6	11%

All 53 cases were delivered by caesarean section of which 47 underwent emergency caesarean section which accounted for 89% and 6 cases underwent elective caesarean which accounted for

Table 8: Maternal complications

Post partum hemorrhage	18	34.2%
Blood transfusion	7	12.3%
No. of ICU admissions	8	13.7%
No. of patients with AKI	1	2.7%
Maternal mortality	2	4.1%

Out of 53 cases 18 patients developed post-partum haemorrhage which accounted for 34.2% , 7 cases received >5 units of blood transfusion which accounted for 12.3%, 8 patients got admitted to ICU which accounted for 13.7%, 1 patient had AKI which was 2.7% and 2 cases had mortality which accounted for 4.1%. Total of 18 cases developed post-partum hemorrhage. All 18 cases were initiated with medical management which was effective only in 5 cases.

Table 9: Various methods for controlling PPH

Mechanical methods	Total of 13 patients	Percentage
B-lynch	3	30%
Uterine artery ligation	5	34%
Internal iliac artery ligation	1	8%
Ceasarean hysterectomy	3	22%
Peripartum hysterectomy	1	6%

Out of 18 cases who had PPH medical management was effective in 5 patients which accounted for 28%, in 3 cases B-lynch sutures were applied which accounted for 30%, 5 had uterine artery ligation which accounted for 34%, 1 had internal iliac artery ligation which accounted for 8%, 3 cases had caesarean hysterectomy which accounted for 22% and 1 had peripartum hysterectomy which accounted for 6%.

Fetal Outcome

Table 10: According to gestational age

Gestational age	Total of 53 cases	Percentage %
Preterm 28-36 6/7weeks	29	54.8%
Term >/= 37 weeks	24	45.2%

Out of 53 babies 29 babies were preterm which accounted for 54.8%, and 24 babies were term which accounted for 45.2%.

Table 11: According to the birth weight of live babies

Birth weight in kgs	Total of 46 live babies	Percentage %
<1.5 kg	6	14.3%
1.5-2.4 kg	21	44.4%
>/=2.5 kg	19	41.3%

Among 46 live babies 6 had very low birth weight of <1.5kgs which accounted for 14.3%, 21 babies were born with weight between 1.5- 2.4 kgs which accounted for 44.4%, and 19 babies had birth weight of >/= 2.5 kgs which accounted for 41.3%.

Table 12: Fetal outcome

Fetal outcome	No. of cases	Percentage
No. of preterm babies	29	54.8%
No. of live babies	46	86.3%
No. of breech deliveries	7	13.7%
No. of babies born with APGAR <7 at 5 min	11	20.6%
No. of IUFD	7	13.7%
No. of babies sent to NICU	21	39.5%
No. of early neonatal deaths	11	20.6%
Perinatal mortality	16	31.5%
No. of babies well at the time of discharge	34	63.5%

Out of 53 babies 7 had breech presentation which accounted for 13.7%, 11 babies born with APGAR <7 at 5 min which accounted for 20.6%, total of 7 IUFD's were observed which accounted for 13.7%, 21 babies were sent to NICU which accounted for 39.5%and 31.5% of perinatal mortality was observed and 34 babies were healthily discharged accounting to 63.3%.

Summary of the Result

Incidence of placenta previa in Government Maternity Hospital, Tirupati, Andhra Pradesh over a period of 1 year is 0.9% as total no. of deliveries in that year was 5568 of which placenta previa were 53.

Incidence was found to be maximum i.e. 47. 9% in the age group of 20-24 years.

Placenta previa incidence was highest among multigravida accounting for 76.7% of which previous abortions were 27.4% and previous c-sections were 32.9%.

Incidence of placenta previa is more when compared to low lying placenta (53.4% & 46.6%).

Among 53 cases of placenta previa 3 cases of placenta accreta spectrum were identified which accounted for 5.5%.

Mode of delivery was by cesarean section in all the 53 cases. Hence 100% delivered by c-section.

Among Maternal complications PPH accounts for 34.2% among which total of 4 cases underwent hysterectomy.

Total 8 cases were admitted to NICU which accounted for 13.7%.

Out of 53 cases preterm deliveries were 29 accounted for 54.8%.

Total of 7 cases were having malpresentation i.e. breech.

Total of 7 IUFD were recorded. Among 63 live babies 58.7% had low birth weight (< 2.5 kgs) total of 11 babies were born with APGAR < 7 at 5 min.

Total of 21 babies sent to NICU of which 11 babies had early neonatal deaths. Total of 31.5% had perinatal mortality. No. of babies well at the time of discharge were 34 which accounted for 63.5%.

Discussion

Placenta previa is one of the dreadfull complications in obstetrics due to its associated adverse maternal and perinatal outcome [5]. In this study nearly one eighth of women were above 30 years of age and more than three fourth of women (76%) were multiparas [6]. In this study prior caesarean section was found to be associated with increased risk of placenta previa [7]. Along with it even prior abortions (spontaneous and induced) were also having increased risk to 3 times. All cases with placenta accreta spectrum had history of 2 previous caesarean sections, hence no. of prior c-sections is directly proportional to increased incidence of placenta accreta spectrum. Significant incidence of placenta previa was also seen in primigravida [7]. The association between low birth weight and placenta previa is chiefly due to preterm delivery and to lesser extent to fetal growth restriction [8].

Table 13: Comparison between Related Studies

Parameters	Present study (n=53) (1yr period)	Rangaswamy M, Govindaraju K.10 (n=62) (2 yrs period)	Ashete Adere *et al*. [9] (n=303) (3 yrs period)
Incidence	0.9%	0.5%	0.7%
Multiparity	76.7%	75.8%	52.1%
Age 21-25yrs	47.9%	59%	33.3%
Previous abortion	20%	-	31%
Previous c-section	32.9%	-	26.1%
Breech	13.7%	24%	-
Mode of delivery	100%	95.1%	94.1%
Placenta accrete spectrum	5.5%	-	6.6%
Postpartum Haemorrhage	35.7%	16%	22.4%
Hysterectomy	10.9%	4%	4%
Pre-term	54.8%	46.8%	49.8%
Low Birth weight	58.7%	51.6%	-
Early Neonatal deaths	20.6%	8%	-

Conclusion

Advancing maternal age, multiparity, prior cesarean section, and prior abortions are independent risk factors for placenta previa.

Indications of caesarean section should be rationalised and educating the people regarding usage of contraceptives in order to avoid the unwanted pregnancies there by reducing the incidence of placenta previa to some extent.

The detection of placenta previa should encourage a careful evaluation with timely referral to higher centre and meticulous delivery in order to reduce the associated maternal and perinatal complications.

Conflicts of interest

There are no conflicts of interest.

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