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A Study on Fetomaternal Outcome in Cases of Placenta Previa in a Tertiary Health Care Hospital (King George Hospital, Andhra Medical College, Visakhapatnam, Andhra Pradesh)

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Abstract: Background: 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. **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 centre at King George Hospital, Visakhapatnam, Andhra Pradesh. A total of 73 women with placenta previa were enrolled in this study with inclusion and exclusion criteria. A necessary information regarding history, clinical examination, investigations, maternal and fetal outcome were noted from existing medical records and were 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, 57.8% of women had preterm deliveries,100% of women delivered by caesarean delivery, 34.2% of women had PPH, 9.5% of cases had caesarean hysterectomy, 5.5% of cases had placenta accreta spectrum, 19% of cases had ICU admissions with 4% mortality and 34% of babies had ICU admissions. 31.5% had 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 the untoward 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 trophotropism 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]; still, lot needs to be done in the lower socioeconomic group in urban slums and the rural India.

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 KGH 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 2019 to December 2019 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 IRCU and mortality were also recorded. Neonatal evaluation included neonatal birth weight, Apgar score, admission to the SNCU and perinatal mortality. Total of 73 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 to avoid overrepresentation of studying high risk women.

Study Results

Table 1. According to the age of the patient

Age of the patient (years)	Total of 73 patients	Percentage (100%)
< 20	01	1.4%
20-24	35	47.9%
25-29	28	38.4%
>/ =30	09	12.3%

Out of 73, 35 were between the age 20-24years which was 47.9%, and 9 were aged >/=30 years which was 12.3%.

Table 2. According to parity

According to parity	Total of 73 patients	% Age
Primigravida	17	23.3%
Multigravida	56	76.7%

Out of 73 cases 56 were multigravida which accounts for 76.7%, primigravida were 17 which accounted for 23.3%.

Table 3. According to presenting complaints

Asymptomatic	42	57.5%
Active bout of bleeding	26	35.6%
Labour pains	03	4.1%
Draining per vaginum	02	2.7%

Out of 73 patients 42 were asymptomatic at the time of admission which accounted for 57.5%, 26 had active bout of bleeding which accounted for 35.6%.

Table 4. According to types of placenta previa

Types of placenta previa	**Total of 73 patients**	**% Age**
Low lying placenta	34	46.6%
Placenta previa	39	53.4%

Out of 73 cases 39 had placenta previa type which accounted for 53.4%, 34 cases had low lying type which accounted for 46.6%.

Table 5. Placenta accreta spectrum

Placenta accreta spetrum (4 out of 73 cases)	**Total of 73 cases**	**% Age (5.5%)**
Placenta accreta	1	1.4%
Placenta increta	1	1.4%
Placenta percreta	2	2.7%

Among 73 cases 5 cases had placenta accreta spectrum which accounted for 5.5% of which 1 was placenta accreta, 1 was placenta increta, and 2 were placenta percreta types of placenta accreta spectrum.

Table 6. Previous history

	Total of 73	**% Age**
Prior abortions	20	27.4%
Prior c-sections	24	32.9%
Prior NVDs	12	16.4%

Among 56 multigravida cases 24 patients had prior c-section history which accounted for 32.9%, 20 with prior abortion history which accounted for 27.4%.

Table 7. Mode of Delivery

Emergency/Elective	**Number (total of 73 cases)**	**% Age**
Emergency	65	89%
Elective	08	11%

All 73 cases were delivered by caesarean section of which 65 underwent emergency caesarean section which accounted for 89% and 8 cases underwent elective caesarean which accounted for 11%.

Table 8. Maternal complications

Post-partum haemorrhage	25	34.2%
Blood transfusion >5units	09	12.3%
No of IRCU admissions	10	13.7%
No of patients with AKI	02	2.7%
Maternal mortality	03	4.1%

Out of 73 cases 25 patients developed post-partum haemorrhage which accounted for 34.2% , 9 cases received >5 units of blood transfusion which accounted for 12.3%, 10 patients got admitted to IRCU which accounted for 13.7%, 2 had AKI which was 2.7% and 3 cases had mortality which accounted for 4.1%.

Total of 25 cases developed post-partum hemorrhage. All 25 cases were initiated with medical management which was effective only in 7 cases.

Table 9. Various methods for controlling PPH

Mechanical methods	**Total of 25**	**% Age**
Balloon tamponade	04	16%
B- lynch	10	40%
Uterine artery ligation	12	48%
Internal iliac artery ligation	02	8%
Caesarean hysterectomy	07	28%
Peri partum hysterectomy	01	4%

Out of 25 cases who had PPH medical management was effective in 7 patients which accounted for 28%, 4 cases balloon tamponade was applied which accounted for 16%, 10 cases B-lynch sutures were applied which accounted for 40%, 12 had uterine artery ligation which accounted for 48%, 2 had internal iliac artery ligation which accounted for 8%, 7 cases had caesarean hysterectomy which accounted for 28% and 1 had peripartum hysterectomy which accounted for 4%.

Fetal Outcome

Table 10. According to gestational age

Gestational age	**Total of 73 cases**	**% Age**
Preterm 28-37 wks	40	54.8%
Term >/=37wks	33	45.2%

Out of 73 babies 40 babies were preterm which accounted for 54.8%, and 33 babies were term which accounted for 45.2%.

Table 11. According to the birth weight of live babies

Birth weight in kgs	**Total of 63 cases**	**% Age**
<1.5kg	09	14.3%
1.5-2.4kg	28	44.4%
>/= 2.5kg	26	41.3%

Among 63 live babies 9 had very low birth weight of <1.5kg which accounted for 14.3%, 28 babies were born with weight b/w 1.5-2.4kg which accounted for 44.4%, and 26 had birth weight of >/= 2.5kgs which was 41.3%.

Table 12. Fetal outcome

Fetal outcome	No. of cases	% Age
No. of preterm babies	40	54.8%
No. of live babies	63	86.3%
No. of breech deliveries	10	13.7%
No. of babies born with APGAR <7 at 5mins	13	20.6%
No. of IUFD	10	13.7%
No. of babies sent to SNCU	25	39.5%
No. of early neonatal deaths	13	20.6%
Perinatal mortality	23	31.5%
No. of babies well at the time of discharge	40	63.5%

Out of 73 babies 10 had breech presentation which accounted for 13.7%, 13 babies born with APGAR <7 at 5 mins which accounted for 20.6%, total of 10 IUFDs were observed which accounted for 13.7%, 25 babies were sent to SNCU which accounted for 39.5%, there was 31.5% of perinatal mortality ratio was observed, and 40 babies were discharged and sent home which accounted for 63.5.

Summary of the Result

- ✓ Incidence of placenta previa in King George Hospital, Visakhapatnam, Andhra Pradesh over a period of 1 year is 0.9% as total no. of deliveries in that year was 7568 of which placenta previa were 73.
- ✓ 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 73 cases of placenta previa 4 cases of placenta accreta spectrum were identified which accounted for 5.5%.
- ✓ Mode of delivery was by cesarean section in all the 73 cases. Hence 100% delivered by c-section.
- ✓ Among Maternal complications PPH accounts for 34.2% among which total of 8 cases underwent hysterectomy (one case had uterine rupture with placenta percreta).
- ✓ Total 14 cases were admitted to IRCU which accounted for 19.2% of which only 3 cases had mortality (4.1%) cause of death was AKI mostly.
- ✓ Out of 73 cases preterm deliveries were 40 accounted for 54.8%. Total of 10 cases were having malpresentation i.e. breech.
- ✓ Total of 10 IUFD were recorded. Among 63 live babies 58.7% had low birth weight (<2.5kgs). Total of 13 babies were born with APGAR<7 at 5mins.
- ✓ Total of 25 babies sent to SNCU of which13 babies had early neonatal deaths. Total of 31.5% had perinatal mortality. No. of babies well at the time of discharge were 40 which accounted for 63.5%.

Discussion

Placenta previa is one of the dreaded 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 the number 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=73) (1yr period)**	**Rangaswamy M, Govindaraju K.[10] (n=62) (2yrs 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%
Preterm	54.8%	46.8%	49.8%
Low birth weight babies	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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