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Research Article

Maternal and perinatal outcome in placenta previa - one year study in tertiary care center in Tamil Nadu, India

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ABSTRACT

Background: Obstetric hemorrhage is one of the most dangerous and devastating group of disorders in Obstetrics of which placenta previa contributes 1/5th of the cases. The aim of this study was to analyze the obstetrical factors and the maternal and perinatal outcome of these cases.

Methods: This was a retrospective study conducted in the Department of Obstetrics and Gynecology of Thanjavur Medical College Hospital, Thanjavur from August 2014 - July 2015. Chart records of all women who had undergone cesarean section for placenta previa were reviewed. Relevant clinical findings were noted.

Results: In the present study, 134 cases of placenta previa were studied regarding type of clinical presentation, clinical course, maternal and perinatal outcome. Information obtained was arranged statistically. A placenta previa case was highest in the age group 20-29 years (79.85%) and in multiparous group (63.43%). Most common risk factor was previous cesarean section (39.5%) followed by abortion in 24.6%. Major degree of placenta previa constitutes 69.4% i.e., majority of cases and minor degree constitutes 30.59% of cases. In the present study massive blood transfusion was required in 0.04% of all cases, adherent placenta previa in 1.9%, 12.68% required hysterectomy. Perinatal morbidity was 25.92% and perinatal mortality incidence was 16.41%. Prematurity contributed the most 63.6% followed by RDS about 4.58%. Newborn with weight above 2 kg has very good survival rates, whereas newborn with weight <1 kg has poor survival rates.

Conclusions: Placenta previa poses danger to both the mother and the baby with high maternal morbidity and adverse perinatal outcome.

Keywords: Maternal and perinatal outcome, Placenta previa, Risk factors

INTRODUCTION

Obstetric hemorrhage is one of the most common causes of maternal morbidity and mortality worldwide. Abnormal placentation is currently the most common indication for peripartum hysterectomy. Placenta previa accounts for one third of all cases of APH.¹ Placenta previa is a major risk factor for obstetric haemorrhage especially in women with a previous uterine scar.² Placenta previa defined as implantation of placenta in lower uterine segment, overlying or approaching internal cervical os.³ It is further classified according to William's as:⁴

- A. Total placental previa: Internal cervical os is covered completely by the placenta.
- B. Partial placenta previa: Internal os is partially covered by the placenta.
- C. Marginal placenta previa: Edge of the placenta is at the margin of the internal os.
- D. Low lying placenta: Placenta is implanted in the lower uterine segment such that the placental edge does not reach the internal os but in close proximity to it.

It occurs in 2.8/1000 and 3.9/1000 in singleton and twin pregnancies respectively.⁵ Risk factors include high parity, advancing maternal age, previous cesaerean

section and uterine surgery.⁶ The main diagnostic modality is by transvaginal ultrasound. Every women with suspected diagnosis of placenta previa at anomaly scan needs further follow up imaging.²² Early prenatal diagnosis allows for timely management thus reducing the perinatal and maternal morbidity and mortality by keeping an eye on need of blood transfusion, and arranging for a team of experienced surgeon, anaesthesiologist and paediatrician. The risk of placenta previa in post cesarean pregnancy has been reported to be higher than after vaginal delivery.⁷ As there is an increase in primary cesarean rate, and increased incidence of placenta previa the purpose of this study is to assess the value of demographic profile and early identification of placenta previa in the maternal and perinatal outcome.

METHODS

This was a retrospective study conducted in the Department of Obstetrics and Gynecology of Thanjavur Medical College Hospital, Thanjavur from August 2014 - July 2015. Chart records of all women who had undergone cesarean section for placenta previa were reviewed. Relevant clinical findings were noted.

RESULTS

Table 1: Demographic profile.

Parameters		No. of women	Percentage
Booking status	Booked	21	15.7%
	Unbooked	113	84.3%
Age	20-29	107	79.9%
	30-35	24	17.9%
	>35	3	2.2%
Parity	Primi	33	24.6%
	Multi	101	75.4%

There was total of 14,712 deliveries during that period of August 2014 to July 2015. 134 cases of placenta previa were registered amounting to the incidence of 0.9%. maximum number are unbooked cases with early referral of 2.9% and delayed referral of 81.3%. Placenta previa cases was highest in the age group 20-29 years i.e. 79.85%, 17.91 % in the age group 30-35 years and 2.23% in the age group >35 years and in the multiparous group 63.43%. Risk factors studied were previous cesarean section, abortion, twin gestation and myomectomy. Most common risk factor was previous cesarean section i.e. 39.5% followed in order by abortion 24.6%, twin gestation 0.7%. Of the complications studied, severe anaemia contributes to 15.6%, malpresentations to 6.7%, (breech 2.98%, transverse lie 3.71%).

I Trimester bleeding contribute to 29.8 %, II Trimester bleeding to 32.08 %. PIH noted in 2.98%. Incidence of GDM was 1.49% and IUGR and oligoamnios was 4.47%. Major degree of placenta previa constitutes 69.4% i.e.,

majority of cases and minor degree constitutes 30.59% of cases. In the present study massive blood transfusion was required in 0.04% of all cases, shock/hypotension observed in 3.7% of all cases, PPH noticed in 27.6% of cases, adherent placenta previa in 1.9%, 12.68% required hysterectomy, 2.23% developed AKI and 4.47 % required ventilatory support.

Table 2: Obstetric evaluation.

Parameters		No. of women	Percentage
Pain abdomen	Present	2	1.5%
	Absent	132	98.5%
Presentation	Vertex	126	94%
	Breech	4	3%
	Transverse lie	4	3%
Previous obstetric performance	LSCS	53	40%
	Abortion	33	25%

Table 3: Types of placenta previa.

Type of placenta	No. of women	Percentage
I	21	16%
Ii	50	37%
Iii	39	29%
Iv	24	18%

Table 4: Antenatal, intraoperative and post-operative complications.

Antenatal	No. of women	Percentage
Severe anemia	21	15.6%
Coexisting PIH	4	3%
IUD	4	3%
GDM	2	1.5%
IUGR/OLIGO	6	4.5%
Intraoperative and post-operative		
Shock/hypotension	5	3.7%
Sepsis	1	0.007%
Febrile morbidity	0	0
PPH	37	27.6%
Adherent placenta	2	1.9%
AKI	3	2.2%

Perinatal morbidity studied as percentage of babies requiring resuscitation and NICU admission was 25.92%. Perinatal mortality incidence was 16.41 %. Prematurity contributed the most 63.6% followed by RDS about 4.58 %. Perinatal deaths in types of placenta previa. Minor -17.07%, Major-20.43%. Perinatal deaths were observed only in cases of abdominal delivery about 19.54%. Perinatal mortality was more in the age group 28-33 weeks of gestation is 88.8%, whereas in 34-36

weeks of gestation it was 17.7% and it is almost nil in >37 weeks of gestation. Newborn with weight above 2 kg has very good survival rates, whereas newborn with weight <1 kg has poor survival rates.

Table 5: Neonatal outcome.

Parameters	No. of women	Percentage
NICU admission	32	23.7%
Neonatal mortality causes - asphyxia	2	1.5%
Prematurity	14	63.6%
IVH	0	0
RDS	6	5%

DISCUSSION

There were 134 cases presented with placenta previa and incidence amounting to 0.9%. Mean age of presentation is 29 years. APH complicates 2-5% of pregnancies of which approximately one third are due to placenta previa.⁷ Various studies have shown the incidence of placenta previa ranging from 0.33 to 0.38% of deliveries.^{8,9}

Increasing age and number of pregnancies have been shown to be an important risk factor for placenta previa. This study had one third of the patient above 30 years age group and almost two third (75%) of the women were multipara. According to Cleary et al, a prospective database from multicenter investigations of 36,056 women with singletons showed increasing age was significantly associated with placenta previa comparing women less than 35 years to 35-29 years and 40 years and older (OR 1.8 and 2.8 respectively). Multiple studies have shown increasing parity to be an important risk factor for placenta previa.¹⁰⁻¹²

Table 6: Comparison of various studies of placenta previa - distribution.

Authors	Year	Placenta previa - distribution
Bhatt	1971	36.8%
Daftary et al	1981	40%
Arora et al ¹⁸	2001	46.4%
Chauhan and Krishna	2001	33.3%

Regarding previous obstetric history, 40% had previous LSCS while 20% had history of abortion. In a retrospective cohort study of 399,674 women, the rate for placenta previa at second birth for women with first vaginal birth was 4.4 per 1000 births, compared to 8.7 per 1000 birth for women with cesarean section at first birth. After adjustment cesarean section at first birth remained associated with increased risk of placenta previa (OR 1.6 95% CI 1.44-1.76). Previous history of abortions (both spontaneous and induced) have been significantly

associated with up to three times risk of placenta previa.^{8,14-16}

Regarding mode of delivery, cesarean section has been the recommended mode of delivery for major placenta previa. Vergani and colleagues reported that more than two thirds of women with placental edge and os distance >1 cm and 1-2 cm within 4 weeks of delivery according to Bronsteen had successful vaginal delivery.^{19,20} In our case, only one had normal successful vaginal delivery.

Women who had previous cesarean section with either placenta previa or anterior placenta underlying scar are at increased risk of placenta accreta.²¹ Colour flow Doppler is useful diagnostic modality. MRI is recommended, if ultrasound is inconclusive.

In population based retrospective cohort study in Nova Scotia, Canada from 1988-1995, 308 cases of placenta previa were identified. Maternal complications included postpartum bleeding (RR-1.86), hysterectomy (RR 33.26), blood transfusion (RR-10.05), and septicemia (RR-5.55). Risk factor for hysterectomy in women with placenta previa included presence of placenta accrete and previous cesarean.⁹ This is similar to the case of cesarean hysterectomy this study who had history of previous cesarean section and there was morbid placental adhesion. Sheiner et al found pregnancies complicated by placenta previa had significantly higher rate of postpartum hemorrhage (OR: 3.8, 95%CI: 1.2-10.5), malpresentations (OR: 7.6, 95% CI: 5.7-10.1), abruption placenta (OR: 13.1, 95% CI: 8.2-20.7).

A population based retrospective cohort study among singleton 544,734 mother-infant pair showed that the association between low birth weight and placenta previa is chiefly due to preterm delivery and to lesser extent to fetal growth restriction.¹⁴ Sheiner showed that congenital malformations and perinatal mortality was 2.6 times more common among cases with placenta previa as compare to those without it. In this study 64% of babies had low birth weight and 10% of the babies had neonatal death. Increased perinatal mortality as well as neonatal death has been noted in other studies.¹⁷

CONCLUSION

Placenta previa accounts for approximately 0.9 % of all deliveries. Majority of the patients were from rural areas where they were unaware about the importance of antenatal visits, with poor educational standards and were of low socioeconomic status. Increasing use of primary cesarean section results in increasing incidence of placenta previa as well as accreta. As the maternal and perinatal morbidity and mortality due to placenta previa is preventable, efforts should be made to bring down these rates which can be achieved by spacing pregnancies, limitation of family size, antenatal registration of all pregnant patients, use of routine USG in pregnancy and early referral of high risk pregnant

women to tertiary care centers. Awareness should be brought about in the rural public to avail the facilities provided by the Government. This will definitely help in better outcome of both mother and fetus in all high risk pregnancies.

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