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**Original Article**

# Maternal and Fetal Outcome of Placenta Previa in a Tertiary Care Hospital

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## ABSTRACT

**Introduction:** Placenta previa (PP) is an important cause of maternal and fetal morbidity and mortality worldwide. It is one of the major cause for antepartum heamorrhage which complicates 1-5% of the pregnancies. **Aim:** To determine the incidence and maternal and fetal outcomes among women with placenta previa (PP). **Methods:** This is retrospective, observational study carried out in Department of Obstetrics &Gynaecology of T.N.M.C & BYL Ch. Nair hospital, Mumbai over a period of 2years from January 1st2018 to December 31st 2019. **Results:** Total number of patients delivered during this period were 6290 and out of which 94 patients were diagnosed with placenta previa, so the incidence is 1.5%. Of women with placenta previa, 3.44%(n=4) had placenta accreta. Incidence of placenta previa was the highest in the maternal age group 20-30 years i.e. 72.9%, Perinatal morbidity was studied as the percentage of babies requiring resuscitation and NICU admission which was 37.35 %(n=36). Caesarean hysterectomy was performed in 10.4% (n=10) cases, there were 1.72 %(n=2) perinatal deaths.

**Key Words**: *Placenta Previa, Placenta accreta, Postpartum hemorrhage.*

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## INTRODUCTION:

Placenta previa (PP) is a condition in which placenta is implanted partially or completely in lower uterine segment. is one of the major cause for antepartum haemorrhage which complicates two to five percent of the pregnancies. Incidence of Placenta previa is approximately 4-5 per 1000 deliveries.

The independent risk factors for placenta previa are previous caesarian section, risk increases as the number of Caesarian sections increases. It is also common in multiparous women. Birth spacing more than 4 years also increases risk of placenta previa. Multiple pregnancy is associated with placenta previa. Its association with significantly high maternal morbidity and sometimes mortality is primarily due to haemorrhage, uterine perforation, infection and the associated surgical complications. The perinatal mortality rate in Placenta previa is 4-5 times higher than normal pregnancies.

In recent years, ultrasound scanning has led to more accurate localization of placenta. The classification of placenta previa is basedon ultrasound findings. It is classified as major when the placenta completely or partially covers the internal OS and when it just reaches the internal OS or remains within 2 cms away from internal OS, it is labelled as minor one. Chances of postpartum haemorrhage in cases of Placenta previa are high as lower uterinesegment fails to contract resulting in bleeding from sinuses of placental bed.Use of uterotonics, suturing of bleeding sinuses, stepwise devascularization, internal iliac artery ligation, balloon catheter and failing all hysterectomy are used to control bleeding. The purpose of our study is to know the incidence and feto maternal outcome of placenta previa at our tertiary level hospital.

**Aim:**
To study the incidence of placenta previa.

- To study maternal and fetal outcome in placenta previa.
- To find out average gestational age at the time of delivery in cases of placenta previa.
- To study the incidence of various complications in mother and baby.
- Mode of delivery in different types of placenta previa.

**Methods:**

This is retrospective, observational study carried out in Department of Obstetrics & Gynaecology of T.N.M.C & BYL Ch. Nair hospital, Mumbai over a period of 2years from January 1st 2018 to December 31st 2019.

The ethical committee of T.N.M.C & BYL Ch. Nair hospital approved the study. During this period 6290 deliveries were conducted out of which 94patients were diagnosed with placenta previa based on ultrasound and confirmed at cesarean delivery. The antenatal women with normally situated placenta were excluded from the study.

After collecting relevant data from patients history, operation theatre records and case records, thorough scrutiny was done with regard to age, parity, antenatal high-risk factors, indications, any other procedure performed, complications along with the ultimate fetomaternal outcome.

**Results:**

Total number of patients delivered during this period were 6290 and out of which 94 patients were diagnosed as Placenta Previa, so the incidence is 1.5%. Of women with placenta previa, (n=5) had placenta accreta**.**

**Table 1 : Incidence of placenta previa.**

| | | |
|---|---|---|
| Total number of deliveries from Jan 2018- Dec 2019 | | **6290** |
| Total number of placenta previa | | **94** |
| Incidence | | **1.5%** |

**Table 2 : Sociodemographic characteristics in placenta previa.**

| **Sociodemographic factors** | **Number** | **%** |
|---|---|---|
| Booked | 78 | 82% |
| Unbooked | 16 | 18% |
| | | |
| **Age** | | |
| <20yrs | 0 | 0 |
| 20-30yrs | 69 | 73% |
| >30yrs | 25 | 26.5% |
| | | |
| | | |
| **Parity** | | |
| Primi gravida | 20 | 21.27% |
| Gravida 2-3 | 57 | 60.63% |
| Grandmultipara(>4) | 17 | 18% |
| | | |

In our study most of the patients were in the age group 20-30yrs , which accounted for 73% (n=69) .
Most of the patients in our study were multiparous 78.63% (n= 74). Primi patients were 21.27% (n= 20)

**Table 3 : Type of placenta previa**

| Type of placenta | Number | Percentage |
|---|---|---|
| Low lying placenta(type I) | 5 | 5.3% |
| Placenta previa(type II, III, IV) | 89 | 94.6% |

Type IV is the commonest type of placenta previa.
In our study there were 5.3% of cases with low lying placenta (n=5) , and the rest 94.6% were placenta previa (n= 89).

**Table 4: Risk factors for placenta previa.**

| **Risk factors** | **Number** | **Percentage** |
|---|---|---|
| | | |
| Maternal age (>35yrs) | 13 | 14.28% |
| Grand multi para | 17 | 18% |
| Malpresentation | 13 | 13.82% |
| Smoking/drug misuse | 0 | 0 |
| First trimester bleeding | | |
| | | |
| **Past history** | | |
| H/o placenta previa | 0 | 0 |
| | | |
| **H/o previous LSCS** | | |
| Previous 1 LSCS | 7 | 7.44% |

| | | |
|---|---|---|
| Previous 2 LSCS | 15 | 15.95% |
| Previous 3 LSCS | 1 | 1.06% |
| H/o previous MTP/ check curettage | 11 | 11.70% |
| H/o previous MROP | 0 | 0 |
| | | |

Totally 7.44% (n=7) patients were previous one LSCS, 15.95% had previous two LSCS (n=15) and 11.70% patients had previous dilatation and curettage(n=11) (Table 4) emphasizing that previous LSCS and curettage are important risk factors for placenta previa in subsequent pregnancy. 14.28%(n=13) of the women with placenta previa were elderly gravida with age >35 years.

Similarily placenta previa was noticed in 18%(n=17) of the grand multipara women (parity>4) as shown in Table 4.Malpresentation was observed in 13.82% (n=13)of the women with placenta previa. None of the women in our study was smoker and no one had previous history of MROP, though both are the risk factors for placenta previa (Table 4).

**Table 5 : Maternal outcome in placenta previa.**

| **Maternal outcome** | **Number** | **%** |
|---|---|---|
| **Intraoperative complications** | | |
| Intraoperative haemorrhage | 6 | 6.1% |
| Hemostatic suturing | 2 | 2.12% |
| Uterine artery ligation | 2 | 2.12% |
| PPH | 14 | 14.89% |
| MROP | 0 | 0 |
| Dense adhesions | 9 | 9.57% |
| DIC | 2 | 2.12% |
| | | |
| | | |
| **Major obstetric morbidity** | | |
| Units of blood transfused | | |
| 1-4 | 48 | 51.06% |
| 5-10 | 9 | 9.5% |
| Anaemia (<7gm%) | 34 | 36.16% |
| ICU care | 13 | 13.82% |
| Acute renal failure | 1 | 1.06% |
| Caesarean hysterectomy | 7 | 7.44% |
| Maternal mortality | 1 | 1.06% |

PPH was noticed in 14.89% of cases. Severe anemia was observed in 36.16% of the women and 60.56% of cases required blood transfusion.

Intraoperative haemorrhage was encountered in 6.1% of the women which was managed by uterotonic drugs, haemostatic sutures (2.12%) and uterine artery ligation (2.12%).

There was 7caesarean hysterectomy due to morbidily adherent placenta (Table 5).There was no intraoperative bowel or bladder injury. Post-operative febrile morbidity was not seen in any of cases and no sepsis complications in any of the women. There was one maternal death due to intractable intraoperative haemorrhage after all conservative measures to arrest bleeding failed. The same women went in DIC.

**Table 6: Perinatal outcome in placenta previa.**

| **Perinatal outcome** | **Number** | **%** |
|---|---|---|
| | | |
| **Maturity** | | |
| <34weeks | 26 | 27.65% |
| 34-37weeks | 38 | 40.42% |
| >37weeks | 30 | 31.91% |
| | | |
| **Birth weight** | | |
| <1.5kg | 6 | 6.38% |
| 1.5-2.5kg | 46 | 48.93% |
| >2.5kg | 42 | 44.68% |
| | | |
| **NICU admission** | 37 | 39.36% |

| | | |
|---|---|---|
| **Neonatal mortality** | 6 | 6.38% |
| **Still birth** | 2 | 2.12% |
| | | |

There were 68.07% (n=64)premature newborns signifying major contribution of placenta previa in newborn prematurity. Significant proportion of the newborn had NICU admission 39.36% (n= 37) mainly due to prematurity and low birth weight. One of the fetus had congenital anomaly in the form of spina bifida. Perinatal deaths were 8.5% (Table6).

**DISCUSSION:**

Our study reports incidence of 1.5.% which is higher than the study conducted by Faiz et al[1]. In our study the incidence of placenta previa was highest in the age group of 20-30 years i.e., 73%, followed in descending order by women in the 30-35 year age group which is similar to observation made by Das et al with the main age of 28.6 years and Singhal et al (2008) as 26.2 years[2,3]. It was observed that increasing age has a strong relationship with placenta praevia. Farkhunda Khursheed et al have suggested that there is a strong relationship of increasing age with placenta praevia[4]. In this study 14.28% women with placenta previa were elderly gravida (age >35 years). The number is comparatively lesser due to early age of marriage in Indian population. As women age, collagen gradually replaces muscle in walls of myometrial arteries, which results in defective vascularisation of the decidua. These under vascularised area have been suggested to participate in the progress of placenta praevia. In our study, 78.63% patients were multiparae. This is consistent with earlier studies where multiparity is reported as a risk factor[1].In our study 18% of cases were unbooked and belonged to poor socioeconomic status resulting in anemia, malnutrition predisposing to poor placental structure formation (villi and blood vessels).

Recurrence rate following placenta previa is 4-8% but in the our study there was no history of previous placenta previa. Out of 94 cases of placenta praevia, who had one previous section were 7, and 15 had previous two sections giving an incidence of 7.44% and 15.95% respectively which is similar to the study conducted by Sarella et al[5]. It is suggested that scar provides a nest for placental implantation in lower segment of uterus. Malpresentation was seen in 13.82% women similar was reported by Sarella et al[5]. Smoking has been reported as a risk factor for Placenta Previa in earlier studies[6,7]. But none of the patients in our study had a history of smoking. It can be due to variable demographic profile and cultural behaviour of different population.

Prematurity has been observed in 68.07% (<37 weeks) of the newborn which has also been reported in earlier studies[8,9,1]. In our study there was 8.5% perinatal mortality and 1.06% maternal mortality which is very lessthan Singhal et al study with 23 % perinatal mortality and maternal mortality of 2%. Majority of the newborn has birth weight between 1.5-2.5kg in present study which is comparable to Singhal, Nymphaea, S Nanda et al study[3].

In present study coagulation failure was noted in 2.12% of cases, 14.89% of cases had PPH managed with uterotonics, B-Lynch, B/L uterine artery ligation, 1.06% developed acute renal failure, blood was transfused in 60.56% and uterine artery ligation was done in 2.12%. Similar results were observed by Shabnam Naz et al[10]. Seven woman in our study underwent caesarean hysterectomy due to uncontrolled intraoperative bleeding. The indication for emergency peripartum hysterectomy in recent years has changed from traditional uterine atony to abnormal placentation[11].Patients with placenta previa in scarred uterus had 16% risk of undergoing emergency peripartum hysterectomy compared to 3.6% in patient with unscarred uterus.

RCOG guidelines recommend that Women with a previous caesarean section require a higher index of suspicion as they are more associated with two obstetrical complications: placenta praevia and placenta accreta. If the placenta lies anteriorly and reaches the cervical os at 20 weeks, a follow-up scan should be done to identify if it is implanted into the caesarean section scar. According to RCOG guidelines elective delivery by caesarean section in asymptomatic women is not recommended before 38 weeks of gestation for placenta previa or before 36-37weeks for placenta accreta.

**Limitations:**

It is a retrospective study conducted in a single centre. The shortcomings of this study are the few number of cases recruited, being a single center study and lack of controls to identify possible risk factors for placenta previa.

**CONCLUSION:**

Placenta previa is a major cause of maternal and perinatal morbidity and mortality which could be prevented by early registration, regular antenatal care, early detection of high-risk cases, and early referral to higher centre. Placenta previa with previous cesarean sections are at increased risk of placenta accrete and need of hysterectomy. Throughout antenatal period obstetrician needs to be more vigilant in such cases to prevent the complications. Neonatal care should be improved to decrease neonatal morbidity and mortality arising mainly due to prematurity in pregnancy with placenta previa.

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