

## STUDY OF PLACENTA PRAEVIA AND ITS FOETOMATERNAL OUTCOME IN A TERTIARY CARE CENTER- MGMGH, TRICHY

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### ABSTRACT

#### BACKGROUND

The highest prevalence of placenta praevia internationally is in Asian women. Placenta praevia is found to complicate 0.4% to 0.5% of all pregnancies and is one of the major causes of third trimester haemorrhage which is increasing in incidence due to rise in caesarean delivery rates. This dreaded and devastating complication is the important cause of maternal and perinatal morbidity and mortality in India.

#### METHODS

This is a retrospective study conducted in the department of OBG, Mahatma Gandhi Memorial Government Hospital, attached to K. A. P. Viswanatham Medical College, Trichy for a period of one year from January 2018 to December 2018. All cases of placenta praevia during pregnancy admitted in labour ward during this period were included in the study. All case records were obtained from the medical record section, and carefully analysed to find out the incidence, various types of placenta praevia, its clinical presentation, and its outcome in relation to mode of delivery, birth weight, and maternal/perinatal morbidity.

#### RESULTS

During the study period, a total of 8734 patients delivered; out of these, 108 patients with placenta praevia were encountered, which makes the prevalence of placenta praevia 1.2% and was more commonly present among multiparous women (73.1%). Out of 108 cases, 70 cases (64.8%) were delivered by caesarean section and 8 cases (7.4%) underwent peripartum hysterectomy. Incidence of placenta praevia in scarred uterus was found to be 76 (70.3%) which was much higher than in unscarred uterus.

#### CONCLUSIONS

Incidence of placenta praevia and its associated complications is more in scarred uterus when compared to unscarred uterus. Managing a case of placenta praevia during pregnancy poses a great challenge to every obstetrician in present day obstetrics due its increased risk of maternal and perinatal complications. Reduction in primary Caesarean section rates can significantly reduce the risk of placenta praevia.

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#### BACKGROUND

Ante Partum Haemorrhage still presents as one of the most dreaded group of disorder in obstetrics. Placenta praevia is an obstetric complication characterized by Placental implantation into the lower segment of the uterine wall, covering whole (major) or part (minor) of the internal os. Fortunately, as pregnancy continues, the placenta follows a process of growth called "trophotropism," in which the trophoblastic cells seek areas of higher vascularity towards the fundus. This results in apparent migration of the placenta (in more than 90% of cases) away from the scarred and less vascular lower segment. In the last trimester of

pregnancy, the isthmus of the uterus unfolds and forms the lower segment. In a typical pregnancy the placenta overlies the upper segment of uterus. If the placenta does overlie the lower segment, as is the case with placenta praevia, it may shear off during formation of lower segment and may bleed. It is the leading cause of APH, the classical and characteristic feature is painless haemorrhage which usually occurs at the end of second trimester.<sup>1</sup> Given the rising incidence of caesarean section combined with increasing maternal age, the number of cases of Placenta Praevia and its complications, will continue to increase.

Women with placenta praevia often present with painless, bright red vaginal bleeding. This commonly occurs around 32 weeks of gestation, but can occur as early as late mid-trimester. This bleeding often starts mildly and may increase as the area of placental separation increases. Praevia should be suspected if there is bleeding after 24 weeks of gestation. Obstetricians should be aware of not only the types of placenta praevia (complete and partial or marginal placenta praevia) but also the position of placental attachment (e.g., anterior uterine wall, posterior wall,

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whether the placenta overlaps a surgical scar from a previous caesarean section). This catastrophic complication not only poses a risk to foetus but also endangers the mother's life. It accounts for 0.4-0.5% of all pregnancies and is a major cause of third trimester bleeding which is on the rise due to increase in the incidence of caesarean deliveries. Previous studies have suggested that placenta praevia is often a risk factor for placenta accreta. Placenta accreta spectrum (PAS) is the latest term used to describe placenta accreta, increta, and percreta.

Exact cause of placenta praevia is unknown. It is hypothesized to be related to abnormal vascularization of endometrium caused by scarring or atrophy from previous trauma, surgery or any procedure in the uterus, or infection. These factors may reduce differential growth of lower segment, resulting in less upward shift in placental position as pregnancy advances.

Women with Asian ethnicity had twice the risk of placenta praevia compared with women of other ethnicities. This suggests that there may be a genetic predisposition. The occurrence of placenta praevia is also significantly associated with uterine scarring and endometrial disturbance that occurs with uterine instrumentation (such as curettage), previous placenta praevia, and, importantly, Caesarean section.

Placenta praevia is a serious obstetric issue and should be managed by experienced teams. The associated Maternal morbidities include- haemorrhage requiring blood transfusion, adherent Placenta, PPH, shock, DIVC, peripartum hysterectomy causing significant maternal morbidity leading to prolonged hospitalization.<sup>2</sup> Pregnancy complicated by Placenta praevia results in premature deliveries and foetal and neonatal death. Premature deliveries and IUGR leads to higher admission rate in NICU.<sup>3</sup> Despite early diagnosis and careful surveillance of women with Placenta praevia and greater advances in neonatal care, it is still challenging to avoid maternal and foetal complications.

**Aim of The Study**

To study the maternal and foetal outcomes in Placenta praevia.

**METHODS**

This is a retrospective study conducted in the department of OBG, Mahatma Gandhi Memorial Government Hospital attached to K.A.P. Viswanatham medical college, Trichy over a period of 1 year from December 2017 to January 2019. All cases of Placenta praevia during pregnancy admitted during this period were included in the study. Baseline characteristics like age, gestational age, parity, birth weight of baby, mode of delivery, maternal and foetal complications and blood transfusions were analysed.

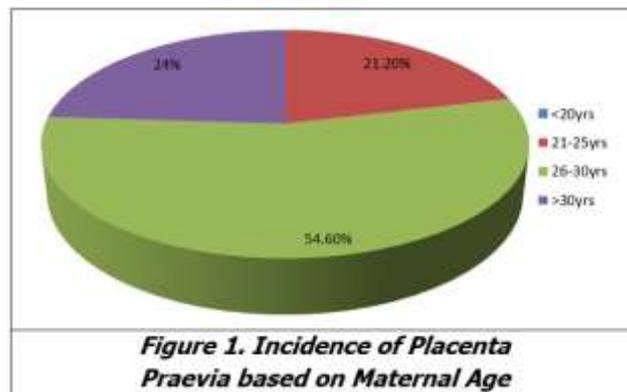
**Inclusion Criteria**

1. All cases of Placenta praevia diagnosed by clinical and ultrasonography admitted during the study period.
2. Gestational age >28 weeks.

**Exclusion Criteria**

1. Gestational age <28 weeks.
2. Abruptio Placenta and other causes of antepartum haemorrhage.

**RESULTS**



As per Figure 1, nearly half of the women were between 26-30 yrs. of age.

Parity	No. of Cases (n=108)		Percentage (%)
	Unscarred Uterus	Scarred Uterus	
Primigravida	13	16	26.8
Multigravida	19	60	73.1

**Table 1. Correlation of Parity and Placenta Praevia**

Table 1 shows the incidence of Placenta praevia and its correlation with the parity. Nearly 73.1% (79) cases were multigravida and among those 79 cases 75.9% (60) were in those with prior surgeries/procedures on the uterus. This shows the direct association between prior operations/procedures on the uterus and Placenta praevia.

Procedure	No. of Cases (n=108)	Percentage (%)
B-Lynch Suturing	5	4.6
Uterine Artery Ligation	49	45.3
Uterine Artery Ligation + Foley's Tamponade	24	22.2
Hysterectomy	5	4.6
Uterine Artery Ligation Followed by Hysterectomy	8	7.4
Hysterectomy Followed by Internal Iliac Artery Ligation	3	2.7

**Table 2. Additional Procedures Opted to Control Bleeding**

Table 2 shows the need for additional procedures to control bleeding in a case of Placenta praevia. In our study we opted additional procedures for nearly 87% (94) cases

to control bleeding. Among those 94, 5 were proceeded to hysterectomy which accounts for 4.6%.

Mode of Delivery	Primigravida	Percentage (%)	Multigravida	Percentage (%)
Normal Vaginal Delivery	2	1.8	10	9.2
Instrumental Delivery	2	1.8	0	0
<b>Caesarean</b>				
LSCS	24	22.2	68	62.9
Classical	-	-	2	1.8

**Table 3. Mode of Delivery**

Table 3 shows the mode of delivery in Placenta praevia in our study. 94 (87.0%) cases were delivered by caesarean section, among those 24 (22.2%) were primigravida and 68 (62.9%) were multigravida. 14 (12.9%) cases were delivered by vaginal route (which includes both normal vaginal and instrumental delivery).

	No. of Cases (n=108)	Percentage (%)
<b>Gestational Age</b>		
>37 Weeks	72	66.6
<37 Weeks	36	33.3
Post-Partum Haemorrhage	34	31.4
Received Blood Transfusion	69	63.8
DIVC	8	7.4
Placenta Accrete	9	8.3
Maternal Death	2	1.8

**Table 4. Obstetric Outcome**

Obstetric outcome in Placenta praevia in our study is depicted in the above table (Table 4). 33.3% (36) of cases had preterm delivery (<37 weeks). 31.4% of the patients had post-partum haemorrhage and 63.8% were in need of blood transfusion (blood and blood products). 7.4% had DIVC and 1.8% (2) cases died due to the complications.

	No. of Cases (n=108)	Percentage (%)
Birth weight <2.5 Kg	38	35.1
APGAR >8	68	62.9
NICU admission	39	36.1
Neonatal death	6	5.5
Preterm birth	36	33.3

**Table 5. Neonatal Outcome**

Table 5 shows the neonatal outcome in Placenta praevia. 33.3% (36) cases had preterm delivery and 35.1% (38) babies had low birth weight of <2.5 Kg. 39 babies were admitted in intensive care unit which is 36.1% and 6 babies died due to complications (i.e. 5.5%).

**DISCUSSION**

Placenta praevia is one of the dreaded complications in obstetrics due to its associated adverse maternal and perinatal outcome.

The results of our study indicate that high maternal age and prior operations on the uterine cavity are risk factors for placenta praevia. In our study about three fourth of the patients i.e. 78.6% were of age more than 26yrs (table 1), which shows the relation between the increasing maternal age and the Placenta praevia which is similar to the study done by Kaur B et al (77%).<sup>4</sup>

In our study prevalence of Placenta praevia is relatively high among multigravida (73.1%) in comparison to primigravida (26.%) (table 2), which is similar to the study done by Faiz (75.8%)<sup>5</sup>

History of previous uterine surgeries/ procedures has been shown to be an important risk factor for Placenta praevia. Overall, the risk factor factors of placenta praevia differ around the world. In this study nearly three fourth (75.9%) of the patient had history of previous surgeries/procedures on the uterus (table 2), which was similar to the study by Suknikhom W et al and Grobman WA et al.<sup>6,7</sup>

The mode of delivery is determined by clinical state of the mother, foetus, and ultrasound findings. In minor degrees (type I and II), vaginal delivery is possible. Royal College of Obstetricians and Gynaecologists (RCOG) recommends that the placenta should be at least 2 cm away from internal os for an attempted vaginal delivery. When a vaginal delivery is attempted, consultant obstetrician and anaesthesiologists are present in delivery suite. In cases of foetal distress and major degrees (traditional grade III and IV) a caesarean section is indicated. Caesarean section is contraindicated in cases of DIC. In placenta praevia blood loss is expected to be high and thus blood and blood products are always kept ready. In our study 94 (87.0%) cases were delivered by caesarean section (table 4), among those 24 (22.2%) were primigravida and 68 (62.9%) were multigravida which was similar to the study done by Rangaswamy M et al,<sup>8</sup> 14 (12.9%) cases were delivered by vaginal route (which includes both normal vaginal and instrumental delivery).

There were 34 cases (31.4%) of postpartum haemorrhage in this study which is similar to the study done by Fan D, Xia Q, Liu L, et al (22.2%).<sup>9,10</sup> In our study 94 cases (87%) were in need of additional manoeuvres

(prophylactic and therapeutic) to control bleeding which includes B-lynch stitch (4.6%), uterine artery ligation (45.3%) and uterine artery ligation with Foley tamponade (22.2%).

In our study 5 cases underwent emergency peripartum hysterectomy when conservative measures failed to control bleeding which is similar to the study done by Sarojini et al (6.6%).<sup>11</sup> There were 9 cases of Placenta accreta. All 5 cases of adherent Placenta had prior Caesarean deliveries. Regarding maternal complications there is increased rate of postpartum haemorrhage, multiple blood and blood product transfusions, maternity high dependency unit admissions, ICU admissions, acute kidney injury which are attributable to Placenta praevia (Table 5).

In our study 33.3% (36) of cases had preterm delivery (<37 weeks) which was similar to the study done by Ananth et al (39.7%).<sup>12</sup>

In our study 31.4% of the patients had post-partum haemorrhage,<sup>9,10</sup> and 63.8% were in need of blood transfusion (blood and blood products). 7.4% had DIVC and 1.8% (2) cases died due to the complications.

The neonatal outcome is shown in table 6. Neonatal morbidity and mortality in our study was also significant. About 36.1% of newborns were admitted to the neonatal intensive care unit. We also observed 62.9% babies had APGAR score >8. 35.1% had a birth weight below the 10<sup>th</sup> percentile (<2.5 Kg). Morbidity was more marked in pre term babies (33.3%). We noted that there was a progressive decrease in neonatal morbidity and mortality as gestation advanced. Therefore, waiting until 36 weeks could decrease neonatal morbidity in our population. However, one must weigh the risk of neonatal prematurity against the benefits of a planned delivery.

## CONCLUSIONS

Incidence of placenta praevia and its associated complications is more in scarred uterus when compared to unscarred uterus. Managing a case of placenta praevia during pregnancy poses a great challenge to every obstetrician in present day obstetrics due its increased risk of maternal and perinatal complications. Waiting until 36 weeks could decrease neonatal morbidity and mortality in our population. However, one must weigh the risk of neonatal prematurity against the benefits of a planned delivery. Reduction in primary Caesarean section rates can significantly reduce the risk of placenta praevia.

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