DOI: https://doi.org/10.53350/pjmhs22167739

**ORIGINAL ARTICLE**

# Maternal Outcome and Prevalence of Placenta Previa Among Pregnant Patients

SAIRA NAZNEEN[1], NAILA BUKHARI[2]
*[1]Experiential Registrar OBS & GYNEA, Khyber Teaching Hospital Peshawar MTI.*
*[2]Assistant professor OBS & GYNEA, Khyber Teaching Hospital Peshawar MTI*
*Correspondence to: Saira Nazneen, Email: saira.tariq85@gmail.com*

## ABSTRACT

**Background:** Placenta previa is a serious complication, associated with feto-maternal complications, and mortality worldwide. Its incidence varies in different regions of the world, so for the sake of determining its prevalence in our health setup, this study is conducted. The primary goal of this study is to determine the outcome and prevalence of placenta previa among pregnant patients presented at khyber teaching hospital peshawar MTI.

**Material and Methods:** A total of 6400 patients presenting to our department for elective and emergency caesarean section were examined for placenta previa. 120 patients were diagnosed with placenta previa. Maternal outcome was assessed in patients with placenta previa.

**Results:** The frequency of placenta previa in 6400 patients presenting for emergency caesarean section was 1.87%. Antenatal bleeding was found in 70 (58.3%) patients, anemia was found in 43 (35.8%) and postnatal bleeding was found in 10 (8.3%).

**Conclusion:** Prevalence of placenta previa was 1.84%. Antenatal bleeding, anemia and postnatal bleeding were adverse maternal outcomes.

**Keywords**: Maternal, neonatal, outcome measures, placenta accreta spectrum, PAS, placenta previa

## INTRODUCTION

Placenta previa is the partial or full wrapping of the cervix's internal os by the placenta. It is a significant risk factor for postpartum hemorrhage and contributes to morbidity and mortality of mothers and as well as newborn[1-3]. This condition negates a safe natural birth and generally requires a cesarean section for neonate birth. A huge number of cases are identified early in pregnancy utilizing ultrasounds while some are presented to the emergency room in the second/third trimester of pregnancy with vaginal bleeding (painless). Placenta previa can also significantly raise the risk of placenta accreta spectrum (PAS)[4]. This cluster of disorders encompasses percreta, increta, and placenta accreta. Uncontrolled postpartum hemorrhage induced by placenta previa or PAS may necessarily entail a life-sustaining treatment, hysterectomy, rendering the patient infertile, intensive care unit admission, and ultimately death[5].

There is no established etiology for placenta previa. Although, there is a relationship between endometrial disruption and uterine scarring[6]. Maternal age progression, history of suction and curettage, cocaine usage, multiparty, smoking, assisted reproductive technologies, cesarean section history, and prior placenta previa are all risk factors for placenta previa[7, 8]. An environment rich in oxygenation and collagen is necessary for the establishment of a zygote. The trophoblast cells that mature into the placenta and fetal membranes form up the surrounding layer of the advancing zygote. The trophoblast connects to the endometrium's decidua basalis, leading to a full-term pregnancy[9]. Earlier uterine scars offer an oxygenated and collagen-friendly environment[10]. Placenta previa influences approximately 4.2% of second-trimester deliveries and has been observed more frequently with the relatively high number of cesarean sections[11].

Early diagnosis of placenta previa is attainable with periodic imaging techniques during the first and second stages of pregnancy. It's vital to note that the early placenta previa is identified, greater to resolve after birth due to placental migration[12]. Approximately, 90% of placentas are labeled as "low lying" usually resolved by the third trimester[13]. At 28-32 weeks of pregnancy, a follow-up ultrasound is recommended for the assessment of persistent placenta previa[14].

Placenta previa is a serious complication, associated with feto-maternal complications, and mortality worldwide. Its incidence varies in different regions of the world, so for the sake of determining its prevalence in our health setup, this study is conducted. The primary goal of this study is to determine the outcome and prevalence of placenta previa among pregnant patients presented at ABC hospital.

## MATERIAL AND METHODS

This cross sectional study was conducted at gynecology department, khyber teaching hospital peshawar MTI, which is a tertiary care hospital, from January 2020 to December 2021 after obtaining ethical approval certificate. A total of 6400 patients booked and unbooked attended the hospital for elective and emergency caesarean section out of which 120 patients with alive pregnancies after 24 weeks with placenta previa diagnosed on ultrasound were enrolled in the study. Placenta previa was defined as abnormally placed placenta in lower uterine segment, partially or completely covering the internal os, on transabdominal Ultrasonography. Baseline characteristics like maternal age, gestational age, parity, previous obs history and placenta position were recorded. Patients with history of dilatation and curettage, history of cervical bone, history myomectomy and multifetal pregnancy were excluded from the study.

Data was analysed using IBM SPSS 22. Categorical variables were presented as frequencies and percentages and numerical variables were calculated in terms of mean and standard deviation. Data was presented in the form of tables and pie charts.

## RESULTS

A total of 6400 patients delivered though caesarean section out of which 120 (1.87%) had placenta previa. The mean of the 120 placenta previa patients was 27.52±4.871 years and mean gestational age was 36.52±1.6 weeks. 115 (95.8%) had parity between 1-4 and 5 (4.2%) patients had parity >4. 33 (27.5%) patients had delivered normally, 72 (60%) patients had previous 1-2 C Section and 15 (12.5%) had previous >3 C Section according to their obs history. Anterior placenta position was found in 76 (63.3%) patients and posterior placenta position was found in 44 (36.7%) patients (Table 1). According to maternal outcomes antenatal bleeding was found in 70 (28.3%) patients, anemia was found in 43 (35.8%) patients and postnatal bleeding was found in 10 (8.3%) patients (Table 2).

Table 1: Demographics

| Baseline characteristics | | Statistics |
|---|---|---|
| Age (years) | | 27.52±4.871 |
| Gestational age (weeks) | | 36.52±1.6 |
| Parity | 1 to 4 | 115 (95.8%) |
| | > 4 | 5 (4.2%) |
| OBS history | Normal | 33 (27.5%) |
| | 1-2 C Section | 72 (60%) |
| | >3 C Section | 15 (12.5%) |
| Placenta position | Anterior | 76 (63.3%) |
| | Posterior | 44 (36.7%) |

Table 2: Maternal Outcomes

| Maternal outcome | Statistics |
|---|---|
| Antenatal bleeding | 70 (58.3%) |
| Anemia | 43 (35.8%) |
| Postnatal bleeding | 10 (8.3%) |

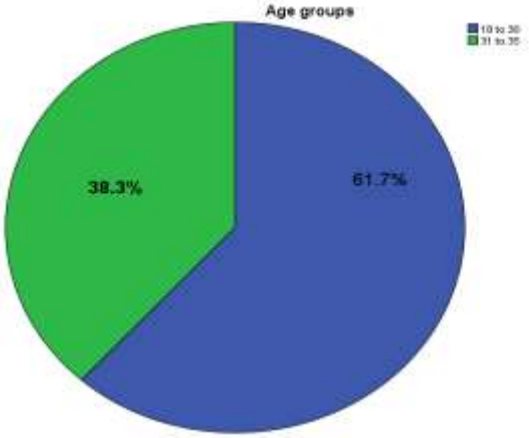


Figure 1:

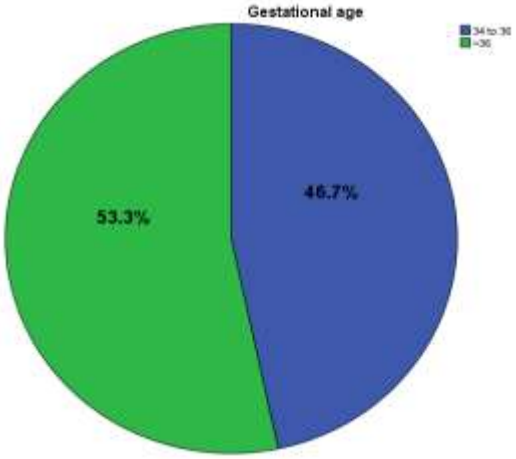


Figure 2:

## DISCUSSION

A placenta previa is a placenta implanted in the lower region of the uterus that presents ahead of the fetus's leading pole. Placenta previa that overstretch the os to some degree, while low-lying placentas are ones that are close to but without overlaying the os.

Endometrial injury appears to be linked to uterine scarring, which can lead to placenta previa. Multiple gestations or conditions that cause scarring of endometrial tissue (such as increased parity, prior caesarean delivery, or prior abortion) are risk factors for placenta previa[15]. It affects 2.8 out of every 1000 singleton pregnancies and 3.9 out of every 1000 twin pregnancies[16]. The chances of placenta accreta in pregnant women with placenta previa are 11% for one prior caesarean section (CS) and 67% for five or more repeated CS. Smoking during pregnancy is another risk factor for placenta previa[17].

Placenta praevia can cause life-threatening maternal problems like hemorrhage and shock, as well as negative child outcomes like premature birth, stillbirth, and neonatal death. Because the patient may need to be admitted to the hospital for observation, they may require blood transfusions and are at danger of giving birth prematurely, this is a severe clinical problem. Hysterectomy after Caesarean section (CS) for placenta previa is reported to be 5.3 % of the time (relative risk of 33 compared to CS without placenta previa). The risk of perinatal death is three to four times higher than in normal pregnancies[18].

The prevalence of placenta previa was 1.87 % among all births during the study period in our study. According to the 2018 RCOG guideline for the management of placenta previa, the estimated incidence of placenta previa at term is 1 in 200 pregnancies[4].

More than half of our patients with placenta previa (72.5%) had previously previous caesarean section, which was the most common surgical procedure. In general, it appears that uterine surgeries should be avoided wherever possible, especially if reproduction is a priority. In our setup, caesarean procedures are only performed if it is needed, however in majority of private setups caesarean sections are performed on the request of the patients, which contributes to the higher number of previous caesarean sections[19].

In our study we assessed three outcomes. Antenatal bleeding, anemia and perinatal bleeding. The incidence of antenatal bleeding in our study was 57.9%, our results are comparable with a study by Wasim T et al[20], their incidence of antenatal bleeding was 63.54% in patients having non adherent placenta previa. In our study 35.5% patients were anemic which is in line with the results by M. Kollmann et al[19] who reported the incidence of anemia in their patients 32.2%. The incidence of postnatal bleeding in our study was 8.3% which is again comparable with the findings of M.Kollmann et al[19] who reported 10% postnatal incidence.

## CONCLUSION

In our study, the prevalence of placenta previa was comparable to previous studies. Antenatal bleeding was the most prevalent outcome followed by anemia and postnatal bleeding. Early detection, either at the commencement of the first episode of bleeding or by ultrasound evaluation will almost certainly result in better maternal outcomes.

## REFERENCES

1. Balayla J, Desilets J, Shrem G. Placenta previa and the risk of intrauterine growth restriction (IUGR): a systematic review and meta-analysis. J Perinat Med. 2019;47(6):577-84.
2. Wang Y, Hu C, Pan N, Chen C, Wu R. Prophylactic uterine artery embolization in second-trimester pregnancy termination with complete placenta previa. J Int Med Res. 2019;47(1):345-52.
3. Ryu JM, Choi YS, Bae JY. Bleeding control using intrauterine continuous running suture during cesarean section in pregnant women with placenta previa. Arch Gynecol Obstet. 2019;299(1):135-39.
4. Silver RM. Abnormal placentation: placenta previa, vasa previa, and placenta accreta. Obstet Gynecol. 2015;126(3):654-68.
5. Fan D, Xia Q, Liu L, Wu S, Tian G, Wang W, et al. The incidence of postpartum hemorrhage in pregnant women with placenta previa: a systematic review and meta-analysis. PloS one. 2017;12(1):e0170194.
6. Jenabi E, Salimi Z, Bashirian S, Khazaei S, Ayubi E. The risk factors associated with placenta previa: An umbrella review. Placenta. 2022;117:21-7.
7. Shams T, Gazzaz T, Althobiti K, Alghamdi N, Bamarouf W, Almarhoumi L, et al. Comparison of pregnancy outcomes between women of advanced maternal age (≥ 35 years) versus younger women in a tertiary care center in Saudi Arabia. Ann Saudi Med. 2021;41(5):274-79.
8. Jing L, Wei G, Mengfan S, Yanyan H. Effect of site of placentation on pregnancy outcomes in patients with placenta previa. PLoS One. 2018;13(7):e0200252.
9. Rungsiwiwut R, Numchaisrika P, Ahnonkitpanit V, Virutamasen P, Pruksananonda K. Triploid human embryonic stem cells derived from tripronuclear zygotes displayed pluripotency and trophoblast differentiation ability similar to the diploid human embryonic stem cells. J Reprod Dev. 2016:2015-113.
10. Findeklee S, Costa SD. Placenta Accreta and Total Placenta Previa in the 19th Week of Pregnancy. Geburtshilfe Frauenheilkd. 2015;75(8):839-43.
11. Ahn KH, Lee EH, Cho GJ, Hong SC, Oh MJ, Kim HJ. Anterior placenta previa in the mid-trimester of pregnancy as a risk factor for

neonatal respiratory distress syndrome. PloS one. 2018;13(11):e0207061.
12. Alouini S, Megier P, Fauconnier A, Huchon C, Fievet A, Ramos A, et al. Diagnosis and management of placenta previa and low placental implantation. J Matern.-Fetal Neonatal Med. 2020;33(19):3221-26.
13. Feng Y, Li XY, Xiao J, Li W, Liu J, Zeng X, et al. Risk Factors and Pregnancy Outcomes: Complete versus Incomplete Placenta Previa in Mid-pregnancy. Curr Med Sci. 2018;38(4):597-601.
14. Garofalo A, Pilloni E, Alemanno MG, Garofalo G, Sciarrone A, Todros T, et al. Ultrasound accuracy in prenatal diagnosis of abnormal placentation of posterior placenta previa. Eur. J Obstet Gynecol Reprod Biol. 2019;242:86-91.
15. Mastrolia S, Baumfeld Y, Loverro G, Yohai D, Hershkovitz R, Weintraub A.: Placenta previa associated with severe bleeding leading to hospitalization and delivery: a retrospective population-based cohort study. J Matern.-Fetal Neonatal Med. 2016; 29:3467-3471.
16. Awad AH, Mansour DY, Habib SM. Maternal and Fetal Outcome of Placenta Previa Patients Attending Ain-Shams University Maternity Hospital: Prospective Study. Evidence Based Women's Health Journal. 2021;11(4):295-300.
17. Silver RM, Landon MB, Rouse DJ, Leveno KJ, Spong CY, Thom EA et al; National Institute of Child Health and Human Development Maternal-Fetal Medicine Units Network. Maternal morbidity associated with multiple repeat cesarean deliveries. Obstet Gynecol. 2006;107(6):1226-32.
18. Crane JM, Van den Hof MC, Dodds L, Armson BA, Liston R. Maternal complications with placenta previa. Am J Perinatol. 2000;17(2):101-5.
19. Kollmann M, Gaulhofer J, Lang U, Klaritsch P. Placenta praevia: incidence, risk factors and outcome. J Matern Fetal Neonatal Med. 2016;29(9):1395-8
20. Wasim T, Bushra N, Riaz S, Iqbal HI. Fetomaternal outcome in patients with placenta previa. Pak J Med Sci. 2020;36(5):952-957