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Original Research Article

Maternal and perinatal outcome in placenta previa

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ABSTRACT

Background: Placenta previa is a serious and life-threatening pregnancy complication characterized by bleeding originating from the placental site located in the lower uterine segment. This condition typically occurs during the latter half of pregnancy when the lower uterine segment undergoes stretching.
Methods: This study is a retrospective observational study of total 30 cases of placenta previa from October 2022 to February 2024 at the department of obstetrics and gynecology at SVP Hospital, tertiary center, western Ahmedabad. All women with placenta previa included in this study except patients suffering from any other bleeding disorder. These women were analyzed with age, parity, gestational age, past history of bleeding, clinical features at presentation, blood transfusion, period of gestation at time of delivery, mode of delivery and perinatal outcome.
Results: In present study 30 cases were taken. Majority were registered 66.7% (20), age group between 21 to 30 year patients 87% (26), multiparous 73.4% (22) patients. Most common risk factor is caesarean section 20% (6) followed by D&E 16.6% (5). Common complications include 33.33% (10) postpartum haemorrhage.
Conclusions: Placenta previa is a major risk factor for adverse maternal and perinatal outcome. Good antenatal care, early diagnosis, availability of emergency obstetrics services with senior obstetricians, blood bank facility, ICU care and nicu services can improve maternal and neonatal outcome in high risk cases.

Keywords: Fetomaternal outcome, Placenta accreta syndrome, Placenta previa, Postpartum haemorrhage

INTRODUCTION

In all of the world antepartum hemorrhage is the leading cause of maternal morbidity and mortality. It is defined as bleeding into or from the genitals during the 2nd half of pregnancy after 20 weeks gestation.[1]

It involves implanting the placenta completely or partially into the inferior uterine segment at 28 weeks gestation.[2] It complicates 0.3-0.5% of all pregnancies.[3]

Placenta previa is classified in four types on the basis of the degree of extension of placenta to the lower segment. Type-I (low lying) major part of placenta is attached to the upper segment and only the lower margin encroaches on the lower segment but not up to the internal os. Type-II (marginal) placental reaches internal os margin but does not cover it. Type-III (complete or partial central) placenta covers inner os partially (closed covers internal os but not fully when fully dilating). Type-IV central or total placenta covers internal os after full dilation. Placenta is the anterior or posterior uterus wall; the posterior is more common. Clinically type-I and type-II anterior is minor degree placenta previa and type-III posterior, type-III and type-IV is major degree placenta previa.[4]

Risk factors for placenta previa are high parity, prior caesarean delivery, previous abortion followed by d and e, multifetal gestation, smoking.[5] It occurs in 2.8/1000 singleton pregnancies and 3.9/1000 in twin pregnancy.[6]

Maternal mortality and comorbidity in placenta previa are mainly associated with complications of severe hemorrhagic, increased surgical interventions and blood transfusions, adherent placenta, cord complications, anemia and asphyxia and rarely congenital malformation.[7]

Placenta preview may be a risk factor for placenta accreta syndrome. Placenta accreta spectrum occurs in 3% of patients diagnosed with placenta prevailing and no prior caesarean deliveries. In women with placenta previa, the risk of placenta accreta is 3%, 11%, 40%, 61% and 67% for the first, second, third, fourth and fifth or more caesarean.

There are three distinct forms of abnormally invasive placentation that are acknowledged: placenta accreta, characterized by the invasion of placental villi into the myometrium's surface; placenta increta, where placental villi extend further into the myometrium; and placenta percreta, which involves villi penetrating through the myometrium, reaching the uterine serosa, and potentially invading neighboring organs like the bladder. Placenta previa and accreta occur mainly in the inferior segment of the uterine artery, which is susceptible to chronic uterine bleeding. It may lead to blood transfusion, operative obstetric hysterectomy, disseminated intravascular coagulation and admission to intensive care unit (ICU) along with maternal morbidity and death. Therefore, a multidisciplinary approach together with specialized obstetric care is required to limit these risks and optimize maternal outcomes.

TVS has emerged as the gold standard in diagnosing placenta previa.[8] Placenta previa is suspected during an abdominal scan at 20 weeks of gestation. It is imperative to confirm the diagnosis through a transvaginal scan. Following sonographic and colour doppler findings suggested of placenta previa with placenta accreta syndrome: 1) Multiple linear irregular vascular spaces in placenta (like Swiss cheese appearance), 2) Thinning or obliterated retroplacental hypoechoic zone, 3) Interruption of the hyperechoic border of uterine serosa and bladder, 4) Remarkably thin or even non visualized myometrium of lower uterine segment, and 5) CD-marked sub-placental hyper vascular and vascular lakes with turbulence (PSV > 15 mm/s).

Women whose placenta is positioned 11-20 mm away from the cervix can be offered the opportunity for a trial of labor.[9] Placental positions are either anterior, posterior or lateral according to ultrasound findings. Anterior placenta previa has a much better prognosis than posterior placenta previa.[10] Also, incidence of placenta accreta increased in the anterior group independently of placenta previa.[11]

METHODS

This study was a retrospective observational study total 30 cases of placenta previa from October 2022 to February 2024 at the department of obstetrics and gynecology at SVP Hospital, tertiary center, western Ahmedabad.

Inclusion criteria

All women with placenta previa included in this study.

Exclusion criteria

Patients suffering from any other bleeding disorder were excluded.

All cases of placenta previa collected from labour room, obgyn wards record books. These data include age, parity, gestational age, past history of bleeding, clinical feature at presentation, blood transfusion, period of gestation at time of delivery, mode of delivery and perinatal outcome.

Statistical analysis

Statistical analysis was performed using Microsoft Excel.

RESULTS

This is a retrospective study of a total 30 cases of placenta previa. In this study, 47% (14) of placenta previa cases were in the 26-30-year age group, followed by 40% (12) in the 21-25-year age group. There was a minimum of 3% (1) patient from the 36-40-year age group.

Table 1: Distribution of cases.

Variables	Frequency	Percentage (%)
Age		
21-25 years	12	40
26-30 years	14	47
31-35 years	3	10
36-40 years	1	3
Total	30	100
Gravida		
Primigravida	8	26.6
Multigravida	22	73.4
Total	30	100
Booking status		
Registered	20	66.7
Unregistered	10	33.3
Total	30	100
Period of gestation at time of delivery		
28-33 weeks	12	40
34 to 36 weeks	16	53.4
>37 weeks	2	6.6
Total	30	100

In this study 73.4% (22) women were multigravida and 26.6% (8) women were primigravida.

In this study registered women were 66.7% (20) and unregistered were 33.3% (10).

In this study majority 53.4% (16) women were delivered at 34-36 weeks of gestation and 40% (12) women were delivered at 28-33 weeks of gestation. Only 6.6% (2) women delivered at full term more than 37 weeks of gestation (Table 1).

In this study, 53.33% (16) of women with placenta previa had no identifiable etiological factor and 20% (6) of women with placenta previa had previously undergone caesarean sections.

In this study, 16.6% (5) of women who underwent abortion followed by dilation and evacuation (D&E) had placenta previa.

In this study previous history of placenta previa, twins, history of tobacco chewing each had a prevalence of 3.33% (1) in cases of placenta previa (Table 2).

Table 2: Etiological factors for placenta previa.

Etiology	Total no. of patients	Percentage
Previous LSCS	6	20
Abortion F/B D and E	5	16.6
Twins	1	3.33
No identifiable etiology	16	53.33
Previous history of placenta previa	1	3.33
Tobacco chewing and smoking	1	3.33
Total	30	100

In this study the most common type of placenta previa identified was type 4, 40% (12) of cases followed by type 1 at 26.6% (8), type 3 at 20% (6), and type 2 at 13.3% (4).

In this study major degree placenta previa 63.4% (19) and minor degree 36.6% (11) (Table 3).

Table 3: Type of placenta seen on ultrasonography.

Type of placenta previa	Frequency (no of cases)	Percentage
Type 1	8	26.6
Type 2 A	3	10
Type 2 B	1	3.4
Type 3	6	20
Type 4	12	40
Total	30	100

In this study, 73.3% (22) of women with placenta previa underwent emergency cesarean sections, while 10% (3) had elective cesarean sections. While 16.6% (5) of patients delivered vaginally (Table 4).

Table 4: Route of delivery.

Mode of delivery	No. of cases	Percentage
Emergency caesarean section	22	73.3
Elective caesarean section	3	10
Vaginal delivery	5	16.6
Total	30	100

In this study, 33.33% (10) of women experienced postpartum hemorrhage (PPH), and 73.33% (22) women required blood transfusion. Women who had PPH were managed conservatively through medical management and conservative surgical approaches, such as stepwise devascularization of the uterine artery. 10% (3) women had placenta previa with placenta accreta syndrome. In this study 10% (3) patients required obstetric hysterectomy among this 6.6% (2) patient had placenta accreta syndrome and 3.3% (1) patient had PPH. In this study postoperative complications like sepsis developed in 1% (1) women (Table 5).

Table 5: Intra and post-operative complications and relations to degree of placenta previa.

Complications	Minor placenta previa	Major placenta previa	Total	Percentage
Intraoperative				
PPH	3	7	10	33.33
Blood transfusion	6	15	22	73.33
Hysterectomy	0	3	3	10
Placenta acreta syndrome	0	3	3	10
Postoperative complications				
Sepsis	0	1	1	3.3
Febrile morbidity	0	0	0	0

In this study, 80% (24) of births resulted in live children, while 16.6% (5) experienced neonatal deaths. Additionally, there was a 3.4% (1) incidence of intrauterine death (IUD) (Table 6).

Table 6: Fetal outcome in patient of placenta previa.

Outcome	No. of cases	Percentage
IUD	1	3.4
Neonatal death	5	16.6
Live	24	80
Total	30	100

DISCUSSION

In this study the majority of patients were registered cases, accounting for 66.7% and unregistered were 33.3%. The age distribution revealed that 87% of the patients belonged to the peak reproductive age group of 21 to 30 years and 2% patients from the 36-40year age group. When considering parity in relation to placenta previa, it was found that 73.4% of the patients were multiparous and 26.6% women were primigravida. Banu et al study showed 95.7% of patients in 21-30 years age group.[12]

A higher number of patients 53.4% were admitted during the gestational age of 34-36 weeks, which contributed to improved fetal maturity and perinatal outcomes and 40% women were delivered at time 28-33 weeks of gestation. Only 6.6% of women delivered at full term more than 37 weeks of gestation.

In this study, 53.33% of women with placenta previa had no identifiable etiological factor, 20% of women with placenta previa had previously undergone caesarean sections and 16.6% (5) of women who underwent abortion followed by dilation and evacuation (D&E). In Purohit et al study, 40% patients had a previous caesarean section and 16% patients had a previous abortion F/B D & E.[13]

In this study the most common type of placenta previa identified was type 4, 40% of cases followed by type 1 at 26.6%, type 3 at 20%, and type 2 at 13.3%. Daskalakis et al study showed 51.5% of patients with type IV placenta previa.[14]

In this study, 73.3% of women with placenta previa underwent emergency caesarean sections, while 10% had elective caesarean sections planned and 16.6% of patients delivered vaginally. Viraj et al study showed 81.13% of caesarean delivery.[15]

In this study, 33.33% of women experienced postpartum hemorrhage (PPH), and 73.33% women required blood transfusion. Women who had PPH were managed conservatively through medical management and conservative surgical approaches, such as stepwise devascularization of the uterine artery. 10% of patients required hysterectomy for PPH management. And 10% of women had placenta previa with placenta accreta syndrome. Maiti et al study showed 7.82% women need hysterectomy.[16]

In this study, 80% of births resulted in live children, while 16.6% experienced neonatal deaths. Additionally, there was a 3.4% incidence of intrauterine death (IUD).

CONCLUSION

Placenta previa is one of the life-threatening complications of pregnancy, where bleeding occurs from the placental site situated in the lower uterine segment, which stretches during the latter half of pregnancy. Prior caesarean section and prior abortion followed by D&E were two most common identifiable etiological factors cause Placenta previa. Other factors like age, parity, previous history of placenta previa, history of tobacco chewing and smoking were found to have strong association with placenta previa. Out of them for preventive aspects, efforts should be made to reduce the rates of operative deliveries because there is greater likelihood of placenta previa in scarred uterus in subsequent pregnancies. As multiparity increases the risk of placenta previa, proper family planning with an aim to reduce unwanted pregnancies and abortions will help to reduce placenta previa. A good antenatal care and early detection of placenta previa by ultrasound is very important not only in symptomatic but also in asymptomatic patients. It will also help in diagnosing morbidly adherent placenta at early gestation. This early diagnosis will help in proper counselling and educating the patients about good antenatal care, improvement in Hb level and importance of delivery at tertiary care centre. It also helps the obstetrician in planning a better management of such patients. Expectant management including antenatal steroids for fetal lung maturity, tocolysis, oral/parenteral iron therapy or blood transfusion in anemic patients improve the maternal and fetal outcome. Vaginal delivery can be done in a minor degree of placenta previa with a favourable cervix. However, in major degree of placenta previa or minor degree of previa with an unfavourable cervix with bleeding per vaginum, irrespective of gestation, pregnancy should be terminated by caesarean section. Intra-operative bleeding can be controlled by using medical management and/or conservative surgical methods like uterine packing, suturing placental site, ovarian and uterine vessels ligation, special type of sutures like B-Lynch, CHO sutures etc. If above methods fail to control bleeding or in case of adherent placenta, obstetrics hysterectomy is preferred. Easy availability of blood and blood products with the above methods, we can deal with intra-operative hemorrhage. Skilled obstetrician and anaesthetist, liberal use of caesarean sections, easy availability of blood and blood products, well -equipped NICU have reduced the complications of placenta previa and improved maternal and fetal morbidity and mortality.

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