

Research Article

Maternal and neonatal outcomes of placenta previa at a Tertiary Maternity Hospital Ahvaz, Islamic Republic of Iran

Cheraghi Fatemeh^{1,2}, Saadati Najmeh^{2,3}, Nazari Zakieh^{1,2*}

¹Fertility Infertility and Perinatology Research Center, Imam Khomeini Hospital, Ahvaz, Iran

²Department of Obstetrics and Gynecology, Ahvaz Jundishapur University of Medical Sciences, Ahvaz, Iran

³Associate professor of Ahvaz Jundishapur University of Medical Sciences, Ahvaz, Iran, Fellowship of perinatology ward, Maternal – fetal medicine research center, Shiraz University of Medical Sciences, Shiraz, Iran

Corresponding Address: Dr. Zakieh Nazari, P. O. Box: 61355-45, general physician, Department of Obstetrics and Gynecology, Ahvaz Jundishapur University of Medical Sciences, Ahvaz, Iran

ABSTRACT:

Background: Placenta Praevia (PP) is one a significant cause of maternal and perinatal morbidity and mortality.

The aim of this study was to determine the frequency maternal and neonatal outcomes among women with placenta previa.

Methods: This cross-sectional study comprised all patients who had a cesarean section for PP at a tertiary referral hospital in Ahvaz, Islamic Republic of Iran, from May 2003 to December 2013. Maternal and neonatal data were obtained from the hospital database System at Obstetrics and Gynecology Department. diagnoses were confirmed during cesarean section.

Results: In total, 87 patients with PP were evaluated.

29 patients had complete placenta previas, 33 partial, and 25 low lying placenta previa. 53 cases had previous cesarean sections. 33(37.9%) mothers had to admitted to the intensive care unit and 46(52.9%) mothers need to emergency cesarean. Mean post-operative hospital stay was 5.92 days.

In total, 36.8% (n=32) of women underwent an obstetric hysterectomy. frequencies of bladder injuries were 6 (6.9%). postpartum hemorrhage in 37(42.5%) and 34(39.1%) patients were required blood transfusion .

The mean packed red blood cell transfusion requirement was 4.4 units. There was no maternal death in this study.

During the study period there were 81 live births, 6 neonatal deaths, no still birth.

Mean gestational age was 34.7 and Mean birth weight of the neonates was 2.5 kgs. There were 25 neonates with an APGAR score of less than 7.

three (3.4%) babies were diagnosed as having RDS. 12 cases (13.8%) were diagnosed as small for gestational age and 2(2.2%) cases were IUGR.

Conclusion: In our experience partial placenta previa was the most common type of PP.

APGAR score <7, was the common neonatal complication and 46(52.9) need to emergency cesarean was the commonest maternal complications.

Key Words: placenta previa, maternal outcome, neonatal outcome, hemorrhage, hysterectomy.

Introduction

In placenta previa (PP), placenta is situated in the lower uterine segment and near the internal cervical os at or after 28 weeks of gestation[1].

It is observed in pregnancies before the 20th week but usually resolves in most cases.

That occurs in 1/200 births [2]. And it's complicates about 0.3 % of pregnancies [3]

and contributes to about 5% of all preterm deliveries[14].

and recurrent rate is 4 to 8 % of subsequent pregnancies[10].

The placenta is described as a complete, marginal or low lying previa based on amount of covering of internal os[11] Transabdominal ultrasound examination is the initial examination and Transvaginal ultrasonography allows precise

assessment of this distance. etiology of *this Condition* remains unclear. The incidence of placenta previa increases with age, Multiple gestations, Multiparity, tobacco use, and Previous cesarean deliveries[12].

PP increases risk of fetomaternal complications[4]. the major maternal complications of placenta previa are; Postpartum hemorrhage requiring blood transfusion and hysterectomy[5,7] also injury to bladder during surgery may occur [6]. on other hand, preterm birth, low birth weight, low APGAR score, respiratory distress syndrome[15] and need to NICU admission are important neonatal problems. [8] so most neonatal morbidity and mortality associated with placenta previa due to complications of prematurity[13].

Perinatal mortality in *Pregnancies complicated by placenta praevia* is approximately 4-8% [9]. The aim of our study was

to find out the frequency of fetomaternal outcomes of pregnancy with placenta previa among Iranian women.

Materials and methods

This retrospective cross-sectional study was conducted in tertiary referral hospital in Ahvaz, Islamic Republic of Iran, from May 2003 to December 2013.

Ethical approval was obtained from the Ethical Committee, Imam Khomeini Hospital, Ahvaz. Informed written consent was taken. Patients included in the study were on those pregnant women with early diagnosis of placenta previa, that were admitted for cesarean delivery to evaluate fetomaternal outcomes. Maternal and neonatal data were obtained from the hospital database System at Obstetrics and Gynecology Department.

Placenta previa was diagnosed by trans-abdominal ultrasonography and were confirmed during cesarean section.

The outcomes of interest were fetal and maternal complications.

Maternal outcomes included *Mean post-operative hospital stay*, obstetric hysterectomy, bladder injuries, postpartum hemorrhage, number of units of blood transfused, need to blood transfusion and maternal death were recorded.

Fetal outcomes included APGAR score, respiratory distress syndrome, weight of baby, intrauterine growth retardation, prematurity and perinatal death.

Women having medical or surgical illness such as high blood pressure, diabetes, kidney disease, with multiple pregnancies, Patients With other causes of antepartum hemorrhage, and on Use of certain medications / drug were excluded from the study.

This study was approved by the Ethics Committee of the *Jundishapur University of Medical Sciences*.

The sample size was calculated as 85, Based on the ratio of maternal outcomes reported in previous studies and Considering the significance level of 0.05 and power of 80%.

Statistical methods

Data obtained from hospital was codified and imported in to Statistical Package for Social Sciences (SPSS) version 23 and descriptive analysis was performed using appropriate statistical analysis.

$P < 0.05$ was determined to be statistically significant.

Results:

A total of 87 mothers with a diagnosis of placenta previa during the years from May 2003 to December 2013 in Imam Khomeini hospital were enrolled in the study.

Based on the the perinatal period sonography and operative findings, 29 cases (33.3%) of placenta previa was complete, 33 (37.9%) of partial and 25 (28.7%) low lying. partial placenta previa was the most common type of PP (27.6%).

The 53 mothers (61%) had a history of cesarean section, and 30 (34.5%) had more than one cesarean section (Table 2).

Maternal outcomes

postpartum hemorrhage occurred in 37 cases (42.5%), which in one case was more than 1000ml. a total of 34 patients (39.1%) had received a blood transfusion and average blood P.C unit was 4.4 (Table 1). 33 mothers (37.9%) were admitted to the ICU (Table 1). Mean hospital stay after cesarean section was 5.9 (range 1-28) days.

Table 1: Maternal outcomes of placenta previa

Variable	frequency/mean
Maternal hemorrhage	(%42.5) 37
Need to Blood transfusion	(%39.1) 34
Admission to ICU	(%37.9) 33
Hospitalization	5.9
Bladder rupture	(%6.9) 6
Hysterectomy	(%36.8) 32
Emergency cesarean section	(%52.9) 46
Preterm labor pain	(%27.6) 24

Bladder rupture occurred in 6 cases (6.9%) (Table 1). Cesarean hysterectomy was done in 32 patients (36.8%) that was the 2 cases it became necessary due to Placental Abruption.

46 patients (52.9%) underwent emergency cesarean section and 41 mothers (47.1%) were in the form of elective cesarean section (table 3)

The number of cases of premature birth due to Preterm Labor pain was 24 (27.6%) (Table 1). During the study no case of death was observed in mothers.

Table 2: The number of previous cesare

Variable	Frequency (%)
No history	(39.1) 34
once	(26.4) 23
Twice	(26.4) 23
three times	(6.9) 6
Four times	(1.1) 1

neonatal outcome:

The mean gestational age was 34.7 weeks (minimum of 14 and maximum of 39 weeks), 12 babies (13.8%) were diagnosed as small for gestational age (SGA), as well as 3 cases (3.4%) of RDS was observed (Table 3).

During the study period, there were 81 (96%) live births, 6 (6.9%) neonatal deaths and no still birth. 2 cases of IUGR (2.2%) was observed (Table 3). The mean birth weight was 2538 g and the average APGAR score was 6.8 and of those, 25 infants had APGAR score of less than 7 minutes.

Table 3: Neonatal outcomes of placenta previa

Variable	frequency/mean
Gestational age(weeks)	34.7
Birth weight(kg)	2.53
SGA	(13.8) 12
RSD	(%3.4) 3
IUFD	(%6.9) 6
stillbirth	0
IUGR	(%2.2)2
APGAR score	6.8

The most common maternal outcome was need to emergency cesarean section (52%) and neonatal Apgar score at birth <7, was the common neonatal complication (28.7%).

Discussion

Placenta praevia is a major cause of morbidity and mortality .

In our study 33.3% mothers had complete placenta previa , 37.9% had partial placenta previa and 28.7% low lying that were consistent with study by Shinde and his colleagues[17]. anterior partial placenta previa (26.9%) was most common type of PP. mothers with placenta previa have clearly higher rate of preterm delivery (27.6%) Which confirms earlier studies [20,26] and 61% of these mothers with placenta previa were delivered by cesarean section. Increased rate of cesarean delivery in placenta previa have already been demonstrated by other studies[1,32,17,26 ,18] and this study ,also conforms that a strong association between placenta praevia with cesarean section.

the risk of placenta previa in women with history of cesarean section three times mothers who had no previous cesarean section [30,31]. and Placenta previa is increased by increasing the number of caesarean sections[25].

and there was increased number of placenta praevia in scarred uterus[32].

However, in studies conducted by the Hossain and Cieminski , the relationship between placenta previa and prior uterine surgery has not been found[22,24]

Post partum haemorrhage was occurred in 42.9% cases and has been found as important complication associated with placenta previa in this study as mentioned by Kechebelu and Zamani et al previously[21,23] rate of obstetrical hysterectomy associated with placenta previa (36/8%)has been found to be higher than previous studies [20,25].

We also found increased rate of post partum blood transfusion . 39.1% of mothers need for blood transfusion.The average units of blood transfusion was 4.4 units. This can be explained by increased incidence of Maternal obstetric hemorrhage, cesarean section and hysterectomy but in our study was lower than other studies[20,31]

Intraoperative bladder injuries were reported in 6.9 % of cases and that in contrast to previous studies by Tara Benjamin and Salah Roshdy, et al that was lower[25,27].

emergency cesarean section was done in 52.9% cases the length of hospital was 6 days that has been found to be similar to study by Hasan, Shabnum, et al[20]

37.9% of mothers were admitted to ICU that was significant in contrast to other studies[17,29].

Studies have documented a significant increase in maternal complications associated with placenta previa, include severe obstetrical haemorrhage, blood transfusions,emergency hysterectomy.

In some studies, placenta previa was an independent risk factor for Detrimental neonatal outcomes [33].

This was also partly the result of our study the IUFD in % 9/6 cases has been reported that in Compared with similar study it was lower[20].

In the present study, unlike other studies, there was no reported case of death during birth,However, in previous studies different amounts of death was reported during birth(range 21% to 2.3%)[17,20,25,26].

SGA was in 8/13% of the babies born to mothers with placenta previa that were consistent with the study by Raisamens and his colleagues.7 As well as in several other similar studies SGA has been reported in babies of mothers with placenta previa[28,32]. This may be explained by the preterm delivery among these mothers.

In our study, the mean gestational age was 34.7 weeks that was lower than the average obtained in other studies[25,26].

Lower APGAR score both at one and five minutes were evident in among newborn of mothers with placenta previa.

the mean Apgar score at birth was 6.8 that Of these, 25 infants had first minute Apgar score less than 7, The results confirmed previous studies that placenta previa are associated with low APGAR score [20,26,17].

IUGR was in 2.2% cases, However,in cohort study by Kassem et al, the prevalence 3.3% of IUGR has been obtained [16].

In this study, mean birth weight was 2538 g , similar to study by JOAN M CRANE et al[26] and according to the results of existing studies, The mean birth weight of newborns of the mothers with placenta previa is in the range of between 2500 to 3000 grams[20,25].

Conclusion:

According to the results of a study and review them, There is a significant relationship between placenta previa and an increase in emergency cesarean section(% 52 of the cases).

Also, the most common neonatal outcome of placenta previa have been low Apgar score(28.7%).

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