ORIGINAL ARTICLE

FETAL AND MATERNAL OUTCOME IN MAJOR DEGREE PLACENTA PREVIA

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ABSTRACT

Background: Placenta previa is associated with significant maternal and fetal morbidity and mortality. This study was conducted to determine the feto-maternal outcome of pregnancies complicated by major degree placenta previa.

Material & Methods: This cross-sectional study was conducted at Department of Gynaecology & Obstetrics, Lady Reading Hospital, Peshawar, Pakistan, from March 25, 2007 to March 24, 2008. Fifty pregnant, ultrasonographically confirmed cases of major degree placenta previa were assessed for maternal and fetal outcome of pregnancies.

Results: The mean age of patients was 29.98+7.15 years. Maximum number of cases 26(52%) were in 21-30 years age group. Regarding gravidity 28(56%) were multigravida, 9(18%) grand multigravida, 8(16%) great grand multigravida and 5(10%) primigravida. Regarding parity 25(50%) were multipara, 9(18%) grand multipara, 6(12%) primipara, 5(10%) great grand multipara and 5(10%) nullipara. Gestational age at presentation was in 24(48%) as 33-36 weeks, 19(38%) at 37-40 and 7(14%) at 28-32 weeks. Regarding fetal outcome, 42(84%) neonates were alive and 8(16%) dead. Birth weight ranged from 1.8 to 4 kg mean 2.75+0.58. Regarding APGAR score, 34(68%) had >7, 8 (16%) <7 and 8 (16%) 0 score. Eighteen (36%) neonates were admitted to NICU. Two (4%) babies were diagnosed as having anemia and 12(24%) developed jaundice. Among maternal complications, surgical and anesthesia complications occurred in 2(4%), postpartum sepsis in 4(8%), hypovolumic shock in 15(30%), placenta accreta in 2(4%) and postpartum hemorrhage in 14(28%). Maternal anemia was recorded in 38(76%) cases and length of hospital stay ranged from 4 to 59 days mean 9.16+8.46. No maternal death was recorded.

Conclusion: Major degree placenta previa is associated with high maternal and neonatal morbidity and neonatal mortality. Ladies with age range 21-30 years and multipara are commonly affected. APGAR score <7, admission to neonatal intensive care unit, respiratory distress syndrome, anemia, jaundice, and neonatal death, are the common neonatal complications. Maternal anemia, hypovolemic shock, postpartum hemorrhage and sepsis are the commonest maternal complications.

KEY WORDS: Placenta Previa; Gravidity; Parity; Perinatal death; Gestational age; Anemia; Birth Weight; Postpartum hemorrhage.

This article may be cited as: Raees M, Parveen Z, Kamal M. Fetal and maternal outcome in major degree placenta previa. Gomal J Med Sci 2015; 13: 173-6.

INTRODUCTION

Massive obstetric hemorrhage is a major cause of maternal death and morbidity.[1,2] Placenta previa is an antenatally identifiable risk factor for obstetric hemorrhage. It is a life threatening condition that occurs in 0.4% to 0.8% of pregnancies.[3] Placenta previa refers to the placenta that is situated wholly or partially in the lower uterine segment at or after 28 weeks of gestation. Prior to 28 weeks placenta may be situated in or close to developing lower segment and is described as low lying. Most of the low lying placentae will not become the placenta previa.[4,5]

Placenta previa is associated with significant maternal and fetal morbidity and mortality.[6,7] Maternal risks associated with placenta praevia are anesthesia and surgical complications, postpartum sepsis and placenta accrete.[8,9] Placenta previa triples the ratio of neonatal mortality which is mediated through preterm birth.[10,11] Perinatal mortality is currently 4-8%, primarily related to complications of prematurity.[12]

Other fetal and neonatal complications associated with placenta Praevia are congenital anomalies,

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respiratory distress syndrome, still birth and anemia.[13] To evaluate the fetal and maternal outcome in major degree placenta previa patients would facilitate establishing a management and preventive protocol, with a view to averting possible fetal maternal and neonatal outcomes associated with the disease. The objective of this study was to determine the feto-maternal outcome of pregnancies complicated by major degree placenta previa.

MATERIAL AND METHODS

This cross-sectional study was conducted in Gynae B Unit, Postgraduate Medical Institute, Lady Reading Hospital, Peshawar, Pakistan, from March 25, 2007 to March 24, 2008. The sample size was calculated as 50, using 0.8% prevalence of major degree placenta previa, 95% confidence interval and 2.1% margin of error, under the WHO software for sample size determination. Sampling technique was consecutive (non-probability). Ethical approval was obtained from the Ethical Committee, Lady Reading Hospital, Peshawar. Informed written consent was taken. Patients included in the study were those with major degree placenta previa type-III and IV with gestational age of more than 28 weeks. Placenta previa was diagnosed by trans-abdominal ultrasonography and typed according to Jaunaux & Campbell classification as: Type I just encroaching on the lower uterine segment, Type II reaching the margin of cervical os, Type III partially covering the internal os, and Type IV completely covering the internal os. Patients with other causes of antepartum hemorrhage i.e. placental abruption and coagulation disorders were excluded from the study. History, detailed examination, ultrasound, maternal outcome and fetal outcome were recorded along with socio-demographic attributes of the patients including age in years, age grouping, gravidity, parity, gestational age and degree of placenta previa on a structured proforma.

Maternal outcomes included complications related to anesthesia or surgery, postpartum hemorrhage, shock, abnormal placental adherence (placenta accreta) and later outcomes like maternal anemia (Hb <10g/dl). Postpartum sepsis, hospital stay and maternal death were also recorded.

Fetal outcomes included APGAR score (at 1, 5 and 10 minutes) anemia, jaundice, respiratory distress syndrome, weight of baby, gross congenital anomaly and admission to Neonatal Intensive Care Unit (NICU), intrauterine growth retardation, prematurity and perinatal death. The criteria for admission to NICU was low APGAR score, low birth weight (<2.5 Kg), signs of respiratory distress syndrome, and jaundice and anemia.

RESULTS

The age of patients ranged from 18 to 43 years with mean of 29.98±7.15 years. The maximum number of cases 26 (52%) were between 21-30 years. (Table 1) Gravidity data of patients showed that the majority of patients 28 (56%) were multigravida, 9 (18%) patients were grand multigravida, 8 (16%) great grand multigravida and 5 (10%) primigravida. Regarding parity 25 (50%) patients were multipara, 9 (18%) grand multipara, 6 (12%) primipara, 5 (10%) great grand multipara and 5 (10%) nullipara. All the patients were unbookd on admission. Regarding gestational age at presentation the maximum number of cases 24 (48%) presented at 33-36 weeks, 19 (38%) at 37-40 weeks, and 7 (14%) at 28-32 weeks. (Table 2)

Regarding choice of management, 28 (56%) cases were actively managed and the remaining 22 (44%) patients were managed expectantly. The majority of patients i.e. 28 (56%) were having type III placenta previa and in 22 (44%) cases type IV placenta previa was found. Regarding fetal outcome,

Table 1: Age distribution of patients with major degree placenta previa (n=50).

Age group	No. of patients	Percentage
<20 years	2	4%
21-30 Years	26	52%
31-40 Years	19	38%
>40 Years	3	6%
Total	50	100%

Table 2: Gestational age of patients with major degree placenta previa at presentation (n=50).

Gestational age (in weeks)	No. of cases	Percentage
28–32	7	14%
33–36	24	48%
37–40	19	38%
Total	50	100%

Table 3: Hospital stay of patients with major degree placenta previa (n=50).

Stay (in days)	No. of cases	Percentage
4–5 days	9	18%
6 days	11	22%
7 days	10	20%
8 days	8	16%
10 days	4	8%
11 –12 days	4	8%
20–25 days	3	6%
59 days	1	2%
Total	50	100%

42 (84%) neonates were alive and 8 (16%) dead. The neonatal birth weight ranged from 1.8 to 4 kg with mean of 2.75±0.58 kg. In majority 29 (58%) cases weight was from 2.1 to 3 kg, in 11 (22%) it was 1.8 to 2 kg, in 10 (20%) 3.1 to 4 kg. Regarding APGAR score, 34 (68%) babies were having score >7, 8 (16%) were having <7 and 8 (16%) were having 0 score. Among the neonates, 3 (6%) were having congenital anomalies, omphalocele in 2 and encephalocele in 1 case. A total of 18 (36%) neonates were admitted to NICU, due to various reasons like RDS in 7 (14%), prematurity in 5 (10%), anemia in 2 (4%), jaundice in 3 (6%) and congenital anomaly in 1 (2%) case. Overall 2 (4%) babies were diagnosed as having anemia (hemoglobin <13.5g/dl) in the 1st hour of life. A total of 12 (24%) babies developed jaundice within 1st 24 hours.

Among the maternal complications; surgical and anesthesia complications were found in 2 (4%) cases, postpartum sepsis in 4 (8%), hypovolemic shock in 15 (30%), placenta accreta recorded in 2 (4%) cases, postpartum hemorrhage in 14 (28%) patients. The most common maternal complication was maternal anemia recorded in 38 (76%) cases.

No maternal death was recorded in this study. The length of hospital stay ranged from 4 to 59 days with a mean of 9.16±8.46 days. Out of 50 patients, 9 (18%) patients stayed for 4-5 days, 11 (22%) for 6 days, 10 (20%) for 7 days, 8 (16%) for 8 days, 4 (8%) for 10 days, 4 (8%) for 11-12 days, 3 (6%) for 20-25 days, and only one (2%) for 59 days. (Table 3)

DISCUSSION

Placenta previa is a common obstetrical problem associated with considerable maternal and fetal morbidity and mortality. It is frequently associated with antepartum hemorrhage and is a precipitating factor for preterm labour. It can easily be diagnosed and graded on trans-abdominal ultrasonography.[14] The exact etiology is unknown but the risk factors are multiparity, previous pregnancy with placenta previa, previous caesarean section and postabortal pregnancies.

In our study most of the patients with major degree placenta previa were multipara. These results are consistent with studies done by Faiz et al[4] and Tuzovic et al.[5] In our study the intrauterine fetal death rate was quite high (16% stillborn). Most of our patients were referred cases from remote and far-flung areas of the province. As there are lack of transportation facilities in these areas so by the time they reach this hospital, intrauterine fetal demise occurred due to heavy blood loss accounting for a high perinatal mortality. A study conducted by Nassar et al[15] showed a trend towards an increased risk of adverse obstetrical outcome in grandmultiparas compared with multiparas independent of maternal age. In contrast, our results showed that multipara were in majority. Our results are consistent with a study which showed that there were seven times as many multiparas having placenta previa as nullipara.[18]

International guidelines recommend that women with placenta previa should be delivered by an experienced operator at a hospital with an on-site blood bank. Results of a study showed that 4.3/1000 women had significant placenta praevia. Women with placenta praevia were more likely to be older, have a prior caesarean section, require general anesthesia for delivery and deliver preterm. Fourteen percent women with placenta praevia suffered a major morbidity. Study concluded that for women with placenta praevia, the risk of major morbidity is high, yet 39% deliver in hospitals without immediate access to a 24 hours blood bank.[9]

The majority of the patients in our study had preterm deliveries <37 weeks and these preterm infants tended to suffer from lower APGAR score which is consistent with other studies,[20,21] which noted that preterm infants of mother with placenta previa were associated with higher incidence of respiratory distress syndrome (RDS). Good neonatal unit facilities can improve immediate fetal outcome in term of better APGAR score and reduced prevalence of RDS.[11] Neonatal intensive care facilities are not proper in our hospital which adds to the perinatal mortality (16%) double than that reported by others.[19]

In a study to assess the maternal and neonatal outcomes of women with placenta praevia and antepartum hemorrhage (APH), they compared women with a diagnosed placenta praevia who did not bleed. More women with antepartum hemorrhage received antenatal steroids and tocolytic agents, and had emergency caesarean sections. The majority of women with bleeding had an emergency caesarean section for antepartum hemorrhage and more delivered early because of fetal distress. There were more preterm deliveries in women with antepartum hemorrhage. The mean birth weight was 2.69 kg in the women with antepartum hemorrhage and 3.06 kg in those without. More infants in the bleeding group had a low APGAR score at the first minute, RDS and admission to special baby care and neonatal intensive care unit.[19]

Another study concluded that the most important obstetric factors for placenta previa were advanced maternal age >34 years, 3 or more previous pregnancies, parity of two or more, rising number of previous abortions, history of previous cesarean section, history of drug abuse and previous placenta previa. Smoking cigarettes was significantly less frequent in women with placenta previa. Preterm delivery still remains the greatest problem in pregnancies complicated with placenta previa.[5]

In our study the major neonatal complications were APGAR score <7 at 5 minutes, and admission to NICU. The common maternal complications were hypovolemic shock, PPH and postpartum anemia. These results are similar to the study of Sheiner et al.[20]

The results of our study also showed a direct association between the increased incidence of placenta previa and parity similar to those reported by Abu-Heija et al.[21] No maternal death was reported in our study. About 28% cases had massive hemorrhage. This justifies the protocol of admitting patients with major placenta previa into hospital, where experienced surgical and anesthetic teams are readily available to intervene when necessary.

In this study maternal anemia was seen in 76% patients followed by postpartum hemorrhage in 28%.[22] All patients included in this study were socio-economically poor. Similar results are also reported in a study by Sheiner et al.[20]

CONCLUSION

Placenta previa is associated with high maternal and neonatal morbidity and neonatal mortality. Ladies with age range 21-30 years and multipara are commonly affected. Gestational age 33-36 weeks at presentation was noted in the majority of cases with placenta previa. APGAR score <7, admission to neonatal intensive care unit, respiratory distress syndrome, anemia, jaundice, and neonatal death, are the most common neonatal complications. Maternal anemia, hypovolemic shock, postpartum hemorrhage and sepsis are the commonest maternal complications associated with placenta previa.

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CONFLICT OF INTEREST
Authors declare no conflict of interest.
GRANT SUPPORT AND FINANCIAL DISCLOSURE
None declared.