Original Article

To Assess Perinatal Outcome in Preterm Breech Vaginal Delivery

Preterm Breech Vaginal Delivery

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ABSTRACT

Objective: To determine the frequency of perinatal outcome in preterm breech vaginal delivery.
Study Design: Descriptive case series.
Place and Duration of Study: This study was conducted at the Department of Obstetrics and Gynecology Unit-1, Civil Hospital, Dow University of Health Science, Karachi from 28.03.2013 to 27.09.2013.
Materials and Methods: A total of 149 pregnant women were selected with gestational age less than 37 weeks confirmed on ultrasound. Information regarding neonatal outcome i.e. preterm with low apgar score, cord prolapse and neonatal mortality was taken.
Results: Frequency of birth asphyxia was the highest is 20.80% (31/149) cases, umbilical cord prolapse rate was observed in 10(6.71%) and prenatal mortality rate was 16(10.73%) cases.
Conclusion: The most common Neonatal outcome in preterm breech vaginal delivery was birth asphyxia followed by neonatal mortality and umbilical cord prolapse. Gestational age ≤30 weeks, primiparous and non-booked cases had severe neonatal outcomes.
Key Words: Apgar score, Preterm delivery, Breech

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INTRODUCTION

Breech presentation occurs in 3-4% of all deliveries. [1] The occurrence of breech delivery decreases with advancing gestational age from 25% of births before 28 weeks gestation to 16% of births at 32 weeks, and 1-3% of births at term.[1]

Preterm delivery with breech presentation is one of the complicated deliveries.[3] It entails the particular risk for fetus.[4] The incidence of cord prolapse is (11.1%)[5] in full term breech but in preterm the prevalence of umbilical cord prolapse is (2.9)[5] in vaginal breech delivery. Similarly head entrapment is about (8.5%)[6] in vaginal breech delivery and more higher in preterm breech. Persistent breech presentation may be associated with abnormalities of baby, excessive amniotic fluid volume and abnormal placental localization.[6] There is higher perinatal morbidity and mortality with breech than cephalic presentation, due to principally prematurity, congenital malformations and birth asphyxia or trauma.

The frequency of cesarean section has increased than vaginal deliveries due to high perinatal mortality and morbidity.[10]

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Some studies reported the prevalence of Umbilical Cord Prolapse (62%)12, Perinatal, Death(38.5%)8, Birth Asphyxia(3.4%)8. However another study reported (7.6%)7,(9.2%) 9,(6.6%)11 prevalence of Umbilical Cord Prolapse, Perinatal Death and Birth Asphyxia respectively.

Most common problem with breech deliveries is birth asphyxia leading to low apgar score.[5,8] Overall neonatal mortality in preterm breach vaginal delivery was higher 18.2% in a retrospective study of 88 live born preterm infants with breach presentation. The risk of neonatal mortality due to prematurity is always higher specially with low birth weight infant.[5,8-9] The mortality is also very high in preterm breach delivery as compared to preterm vertex delivery.[9-10] The frequency of cesarean section increase than vaginal deliveries due to high perinatal mortality and morbidity.[9] Establish risk for breech presentation are prematurity, congenital foetal abnormalities, multiple pregnancy, acquired defects of uterus i.e. (low lying placenta or fibroid especially over lower uterine segment) and rarely congenital uterine defects (i.e. bicornuate uterus).[10-15]

Most obstetricians in Sweden followed the recommendation that breech vaginal delivery should be attempted only if the following conditions are met: gestational age is more than 34 completed weeks, estimated fetal weight (by ultrasound) is more than 2000 grams but less than 4000 grams and pelvic size considered adequate after pelvimetry.[16] Diagnosis of breech presentation for the first time during labour is not a contraindication of vaginal breech delivery.

Various studies, which are being carried out in different settings, fail to make a single consensus regarding

safest mode of delivery for breech presentation. Despite this in units where planned vaginal delivery is a common practice and when strict criteria's are met before and during labour, planned vaginal breech delivery of singleton foetuses at term remains a safe option that can be offered to women [17,18] .

All the available literature stressed the importance of adhering to an appropriate protocol when assessing women for vaginal breech delivery.[19] Close consultation with the mother and partner and counciling about the implications of the choice of vaginal breech delivery verses cesarean section is important.[20]

MATERIALS AND METHODS

The data collection started after an approval from the College of Physician & Surgeons Pakistan. The study was performed using data from descriptive case series, conducted in the Department of Obstetrics & Gynecology Unit 1 Civil Hospital Karachi. Inclusion criteria are, All patients admitted in obstetrics department with gestational age <37 weeks (confirmed on ultrasound),All patients admitted in obstetrics department with gestational age <37 weeks (confirmed on ultrasound),Age 20 to 40 years, All singleton and multiple preterm breech vaginal deliveries (confirmed on ultrasound).Exclusion criteria are, Gestational age less than 28 weeks, Pregnancy with any medical and obstetrical disorder that is eclampsia, preeclampsia, diabetes, APH, Heart disease and Hypertension.

RESULTS

A total of 149 pregnant women were selected with gestational age < 37 weeks confirmed by ultrasound and they were admitted in obstetric department in hospital. The average age of the patients was 29.96 ± 3.80 years .Similarly the average gestational age of the women was 33.29±4.75 weeks . Regarding parity status, women, 65(43.%) multiparous was observed, followed by grand multiparous (parity >5) who were observed in 45(30.10%) . Out of 149 pregnant women 89 (60%) delivered male baby and 60 (40%) delivered female baby as shown in (figure 1) Similarly 67 (45%) were booked and 82(65%) were un-booked cases (figure 2).

Perinatal outcome in preterm breech vaginal delivery is shown in table 1. Birth asphyxia was found in 20.80% (31/149) cases, umbilical cord prolapsed rate was observed in (10/149) cases 6.71% and perinatal mortality rate was detected in (16/149) cases (10.73%).

Stratification of neonatal outcome in preterm breech vaginal delivery with respect to age group is shown in table-2. Birth asphyxia was observed in 15 (22.38%) in age group of 26-30, umbilical cord prolapsed 6 (10.16%) in age group of 31-35 and neonatal mortality was 12 (17.91%).

Stratification of neonatal outcome in preterm breech vaginal delivery with respect to gestational age group 19 (31.66%) was found to be birth asphyxia and 9 (15%) had mortality in age group of 24-32, 6 (10%) were in umbilical cord prolapsed in age group of 33-36 showing table 3. Similarly in apgar score shows 18(19.14%) had birth asphyxia and 9(9.57) had perinatal mortality and 7(7.44%) had umbilical cord prolapse.

In gender wise stratification birth asphyxia 16(26.66%) and mortality 10(16.66%) were found in male babies and umbilical cord prolapse was found in 6(6.74%) in female babies.

82 women had recurrent breech vaginal delivery out of it birth asphyxia was mostly observed in 23(28.84%) neonates, similarly 67 women had singleton delivery out of these birth asphyxia also observed mostly 8(11.94%) as shown in table 4.

With respect to booking status, birth asphyxia was mostly observed in both booked and un booked women i.e 12(17.91%) and 19(23.17%).

Table No. 1: Frequency of neonatal outcome in preterm breech vaginal delivery (n=149)

Pernatal Outcome	Frequency	%
Birth Asphyxia	31/149	20.80%
Umbilical Cord Prolapsed	10/149	6.71%
Perinatal Death	16/149	10.73%
Total	**57**	**38.27%**

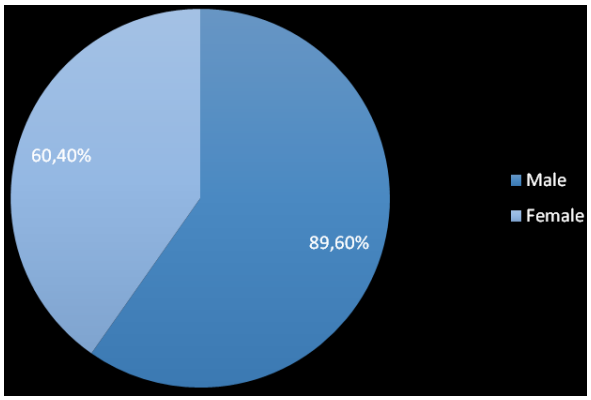

Figure No.1: Gender Distribution of Baby (n=149)

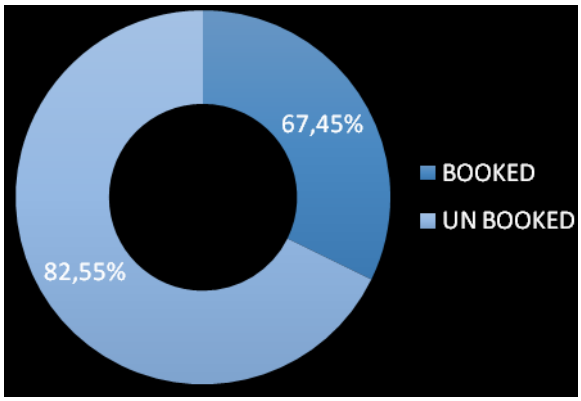

Figure No.2: Distribution of booking status (n=149)

Table No. 2: Stratification of neonatal outcome in preterm breech vaginal delivery with respect to age groups (n=149)

Age Groups	N	Birth Asphyxia	Umbilical Cord Prolapsed	Perinatal Mortality	P-Value
20-25	15	3(20%)	1 (6.66%)	1 (6.66%)	0.407
26-30	67	15 (22.38%)	3 (4.47%)	12 (17.91%)	0.10
31-35	59	12 (20.33%)	6 (10.16%)	3 (5.084%)	0.033
36-40	8	1 (12.5%)	0 (0%)	0 (0%)	0.352
Total	149	31 (20.80%)	10 (6.71%)	16 (10.73)	

Table No. 3: Stratification of neonatal outcome in preterm breech vaginal delivery with respect to gestational age groups (n=149)

Gesta-tional Age Groups	N	Birth Asphyxia	Umbilical Cord Prolapsed	Perinatal Mortality	P-Value
24-32	60	19 (31.66%)	6 (10%)	9(15%)	0.006
33-36	47	10 (21.27%)	3 (6.38%)	5 (10.6%)	0.083
37-42	42	2 (4.76%)	1 (2.38%)	2 (4.76%)	0.812
Total	149	31 (20.80%)	10 (6.71%)	16 (10.73%)	

Table No. 4: stratification of neonatal outcome in preterm breech vaginal delivery with respect to breech vaginal delivery (n=149)

Breech Vaginal Delivery	N	Birth Asphyxia	Umbilical Cord Prolapsed	Perinatal Mortality	P-Value
Singleton	67	8 (11.94%)	2 (2.98%)	3 (4.47%)	0.078
Multiple	82	23 (28.84%)	8 (9.75%)	13 (15.85%)	0.008
Total	149	31 (20.80%)	10 (6.71%)	16 (10.73%)	

DISCUSSION

In our study the total of 149 pregnant women were selected ,the mean age and gestational age of the women were 29.96 ± 3.80 and 33.29±4.75 years respectively.

This was a prospective study, performed on 88 live-born preterm infants with breech presentation. The neonatal mortality (NNM) was 18.2%, and 13.3% after diagnosis for congenital malformations incompatible with life. 62.5% were delivered vaginally, and 37.5% by cesarean section. In spite of the fact that most cesarean sections were done for indications associated with increased fetal and neonatal morbidity and mortality, overall morbidity was comparable in the two groups. Mortality was higher in the vaginal group. Entrapment of the fetal head (7.3% of vaginal deliveries) and prolapse of the cord (4.5%) were the major complications of preterm breech delivery. The author considers these results in favor of routine cesarean section in preterm breech presentation48 ,Whereas in our study we only looked for birth asphyxia (17.6%), umbilical cord prolapse (5.9%) and perinatal mortality (11.8%).

In population based cohort study from the Medical Birth Registry of Norway comprising all singleton deliveries 1967-1994, a total of 1,592,064 deliveries. Of these, 45,921 were vaginal breech presentation. The breech presentation proportion increased from 2.2% (95% CI 2.1-2.3) to 3.4% (95% CI 3.2-3.5). It was mainly due to demographic changes in terms of increasing proportions of births with low birth order and high maternal age. Breech presentation was most frequent in urban areas.9 Strong associations were observed between breech presentation and low birth order as well as high maternal age.9 The findings are compatible with both intrinsic as well as environmental mechanisms. Proper selection of cases for vaginal delivery, vigilant intrapartum monitoring and proper technique of breech delivery have been established as the most important determinant for successful outcome in vaginal breech delivery without compromising fetomaternal wellbeing and curtailing the cesarean section rate done for the malpresentation.

A studywas conducted in the department of Obstetrics &Gynecological unit-I, Bahawal Victoria Hospital Bahawalpur to assess the various factors associated with breech delivery at term. This case control study was carried out in women with the age group 20-40 years. Various risk factors (Parity, multiple pregnancy, placenta Previa, amount of liquor and congenital abnormalities) associated with breech (50 cases) at term (37-42 completed weeks) were compared with vertex (50 controls).Different factors associated with breech presentation were oligohydramnios 44%, placenta previa 34%, primiparity 46%, multiple pregnancy 14% and congenital abnormalities 18%.47 Careful monitoring of these factors should be undertaken to minimize breech delivery thereby reducing the adverse neonatal outcome.

In our study Birth asphyxia 31(2.080), Umbilical cord prolapse 10(6.71%) and Perinatal mortality were 16(10.73%).

The strengths of our study were scientific and systematic calculation of sample size, inclusion and exclusion criteria. We also perform stratification at the analysis to control for con founders and effect modifiers. Strength of our study was use of purposive sampling best suited for our study design and sample selection, as our inclusion and exclusion criteria was stringent. The use of objective definitions for predictor

and outcome variable also minimizes the source of bias in our study.

CONCLUSION

The most common Neonatal outcome in preterm breech vaginal delivery was birth asphyxia followed by neonatal mortality and umbilical cord prolapse. Gestational age ≤30 weeks, Primiparous and non-booked cases had severe neonatal outcomes.

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Author's Contribution:

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