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MODE OF DELIVERY AND NEONATAL OUTCOME IN BREECH PRESENTATION

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Abstract

Background: Breech presentation is the commonest malpresentation with incidence of 3-4% at term. This study was done with the objective of studying the mode of delivery in breech presentation and to compare the neonatal outcome in women delivered vaginally to those delivered by cesarean section.

Methods: This prospective observational study was conducted in obstetric and gynaecology department of SMS Medical College, Jaipur (Rajasthan). In this study group 100 women with breech presentation were included who were studied with respect to their gestational age, birth weight, type of breech, mode of delivery and neonatal outcome.

Results: 100 women with breech presentation, 60% women delivered by cesarean section and 40% women delivered by vaginal delivery. APGAR score was less than 5 at 1 min. in 17.50% of vaginally delivered newborns and 6.66% in cesarean section delivered newborns(p value = 0.171). Admission to NICU were 25% in normal vaginal delivered newborns and 13.33% in cesarean section delivered newborns (p value =0.05). There was no perinatal mortality noted in both groups.

Conclusion: Although APGAR at 1 & 5 minute were low in newborns delivered by vaginal delivery as compared to cesarean section but the difference was not much significant. So vaginal delivery is still a safe option for breech babies with proper selection and when conducted by a skilled obstetrician.

Introduction

Breech presentation is a longitudinal foetal lie in which the foetalpodalic pole consisting of the buttocks, feet or the knees is the leading pole at the pelvic brim. Incidence of breech presentation decreases with increasing gestational age. Incidence is about 20% at 28 week and drops to 5% at 34 week and to 3% to 4% at term. Breech presentation has been associated with many complications during pregnancy and labour as breech. Breech is a most common malpresentation. The maternal complications and fetal morbidity and mortality are higher in case of breech presentation. Different modes of delivery for breech presentation can be spontaneous breech delivery, assisted breech delivery, caesarean section. It is essential to maintain the skills of vaginal breech delivery especially in our country with limited access to operative delivery & in situation such as precipitous labour, second stage labour, anamoulous foetus, mother's preference for vaginal birth etc. The vast majority of the morbidity and mortality associated with breech delivery is attributed to three factors: - Cord compression, occurrence of nuchal arms, difficulty in birth of the after coming head. Caesarean section for breech also requires skill and expertise, as problems of birth injury, traction on fetal spine & difficulties of after coming head etc.

Material and Methods

It was a prospective, observational, longitudinal study conducted in the department of Obstetrics and Gynaecology, SMS Medical college, Jaipur. In this study total 100 pregnant women were enrolled , inclusion criteria were singleton pregnant women with breech presentation at term, who gave written consent and were willing to participate in study. Those with intrauterine fetal death were excluded. A thorough relevant history, general physical and obstetrical examination was performed along with routine antenatal blood, serum, urine investigations was performed, if not done earlier. Ultrasound examination was done to know type of breech, attitude of fetal head, nuchal arms, and estimated fetal weight. Vaginal delivery was allowed in cases where there was reassuring CTG at admission, estimated foetal weight was not more than 3.5 kg, with no foetopelvic disproportion or placenta praevia and presentation as frank or complete breech.

Patient selected for vaginally delivery was carefully monitored and assisted breech delivery was conducted with pediatrician in attendance. Caesarean section was carried out as an elective or emergency basis of placentaprevia, fetal distress, previous caesarean section, footling breech, oligohydraminos, foetopelvicdisproportion, cord prolapse, failure to progress and of maternal request. Evaluating the newborns at birth was done for gestational age, APGAR score at 1 min. & 5 min., congenital malformations and birth injuries .Mother &newborns was followed till discharge from hospital and neonatal mortality and morbidity & maternal morbidity was noted.

Results

Table 1: ***Distribution of Cases According to Mode of Delivery***

Mode of Delivery	No.	%
Normal Vaginal Delivery	40	40.00
Cesarean Section	60	60.00
Total	**100**	**100.00**

Among 100 cases, 40 (40.00%) cases of breech presentation delivered by vaginal delivery and only 60 (60.00%) delivered by cesarean section.

Table 2: ***Association of Mode of Delivery With Birth Weight of Newborn***

Birth Weight of Newborn (in gms)	Normal Delivery		Cesarean Section	
	No.	%	No.	%
2000 - 2400 (n=9)	7	17.50	2	3.33
2500 - 2900 (n=71)	31	77.50	40	66.67
3000 - 3400 (n=14)	2	5.00	12	20.00
>3500 (n=6)	0	0.00	6	10.00
Total	**40**	**100.00**	**60**	**100.00**

p = 0.004

Among 100 newborns delivered, 9 newborns had birth weight between 2-2.4 kg, out of which 7 newborns (17.50%) were delivered by vaginal delivery and 2 newborns (3.33%) delivered by cesarean section.

71 newborns had birth weight between 2.5-2.9 kg, out of which 31 newborns (77.50%) were delivered by vaginal delivery and 40 newborns (66.67%) delivered by cesarean section. 14 newborns (14.00%) had birth weight between 3-3.4 kg, out of which 2 newborns (5.00%) were delivered by vaginal delivery and 12 newborns (20.00%) delivered by cesarean section. 6 newborns (6.00%) had birth weight >3.5 kg. All 6 newborns were delivered by cesarean section, none of them was vaginally delivered.

Most of the cases had birth weight between 2-2.9 kg in both the vaginally delivered and in cesarean section delivered patients. Most of the cases of cesarean section had newborns weight more than 3 kg. p-value is 0.004 which is statistically significant. It shows that birth weight is a significant factor deciding mode of delivery but not influence neonatal outcome.

Table 3: ***Distribution of Cases According to APGAR Score after 1 and 5 Minute and Mode of Delivery***

APGAR Score	Count of APGAR at 1 Minute		Count of APGAR at 5 Minute	
	ND	CS	ND	CS
5/10	7 (17.50%)	4 (6.66%)	6 (15.00%)	4 (6.66%)
Total	11		10	
7/10	33 (82.50%)	56 (93.33%)	34 (85.00%)	56 (93.33%)
Total	89		90	
p-value	0.171		0.307	

Among 40 cases of normal vaginal delivery, 7 newborns (17.50%) had APGAR score at 1 min as <5/10 and 33 newborns (82.50%) had >7/10. Among 60 cases of cesarean section delivery, 4 newborns (6.66%) had APGAR score at 1 min as <5/10 and 56 newborns (93.33%) had more than 7/10. p-value of APGAR score at 1 min is 0.171 which is statistically insignificant.

Among 40 cases of normal vaginal delivery, 6 newborns (15.00%) had APGAR score at 5 min <5/10 and 34 newborns (85.00%) had >7/10. Among 60 cases of cesarean section, 4 newborns (6.66%) had APGAR score <5/10 and 56 newborns (93.33%) had >7/10. p-value is 0.307 which is statistically insignificant.

Although in my study APGAR score at 1 min and 5 min is lower in vaginally delivered newborns than cesarean section but this difference is not much significant. It shows that neonatal outcome was not influenced by mode of delivery.

Table 4: ***Association of Mode of Delivery With Admission in NICU***

Admission in NICU	Normal Delivery		Cesarean Section	
	No.	%	No.	%
Present	10	25.00	8	13.33
Absent	30	75.00	52	86.67
Total	**40**	**100.00**	**60**	**100.00**

p = 0.05

Maximum newborns 10 (25.00%) admitted to NICU were from normal vaginal delivery and 8 (13.33%) newborns admitted in NICU delivered by cesarean section but the difference was not much significant. p-value is 0.05. It shows that mode of delivery was not a significant factor which influenced admission to NICU. Birth asphyxia and birth trauma were most common causes of neonatal morbidity and admission to NICU.

Table 5: ***Association of Neonatal Outcome to Mode of Delivery (n=100)***

Neonatal Outcome	Normal Delivery	Cesarean Section	Total
Shift to Mother Side	**30**	**52**	**82**
Admission of NICU	**10**	**8**	**18**
1. Respiratory Distress Syndrome	2	3	5
2. Birth Asphyxia	3	3	6
3. Birth Trauma	3	0	3
4. Hypoglycemia	1	2	3
5. IntraventricularHaemorrhage	1	0	1
6. Still Birth	0	0	0

Among 40 cases of normal vaginal delivery 10 newborns shifted to NICU. Out of which, 2 newborns had respiratory distress syndrome, 3 newborns had birth asphyxia, 3 newborns had birth trauma, 1 newborn had hypoglycemia due to presence of gestational diabetes mellitus in mother and 1 newborn had intraventricularhaemorrhage.

Among 60 cases of cesarean section, 8 newborns shifted to NICU. Out of which, 3 newborns had respiratory distress syndrome, 3 newborns had birthasphyxia and 2 newborns

had hypoglycemia due to presence of gestational diabetes mellitus. There was no still birth and perinatal mortality noted.

Most common cause of neonatal morbidity in vaginally delivery is birth trauma and birth asphyxia and in cesarean section, birth asphyxia and respiratory distress syndrome.

Discussion

This study showed that birth weight is a significant factor deciding mode of delivery. Most of the cases had birth weight between 2-2.9 kg in both the vaginally delivered and in cesarean section delivered patients. Most of the cases of cesarean section had newborns weight more than 3 kg. p-value is 0.004 which is statistically significant. A study conducted by Lukas J et al (2018) compared maternal and neonatal outcome of intended vaginal breech deliveries of newborns having birth weight of 2.5-3.7 kg and to those of newborns having birth weight of 3.8 kg and more. Although according to this study maximum newborns i.e. 45.00% having birth weight >3.8 kg were delivered by cesarean section but in our study all newborns having birth weight >3.5 kg were delivered by cesarean section, so these studies were comparable.

In this study, neonatal outcome was not influenced by mode of delivery. Although in this study APGAR score at 1 min and 5 min is lower in vaginally delivered newborns than cesarean section but p value at APGARat 1 min. is 0.171 and p value of APGAR at 5 min. is 0.307 which is not statistically significant. It shows that neonatal outcome was not influenced by mode of delivery.

An experimental study conducted by Mukhtar B et al (2013) reported that mean APGAR score at 1 min and 5 min in vaginally delivered newborns was 8.47 and 9.53 respectively and also in cesarean section delivered newborns mean APGAR score at 1 min and 5 min was 8.58 and 9.62 respectively. p-value of APGAR at 1 min was 0.1 and p-value of APGAR at 5 min was 0.09 which is statistically insignificant. It shows that neonatal outcome was not influenced by mode of delivery which was similar to our results.[52] A prospective observational study conducted by Giuliani A et al (2002) reported that APGAR score at 1 and 5 min is less in vaginally delivered newborns than in cesarean section but difference is not much significant (p-value is 0.12), which was also similar to our results. Similarly studies conducted by Alarab M et al (2004) also showed no significant difference in APGAR score at 1 and 5 min in vaginally delivered and cesarean section delivered newborns.

This study shows the association of mode of delivery with admission to NICU. Maximum newborns 10 (25.00%) admitted to NICU were from normal vaginal delivery and 8 (13.33%) newborns admitted in NICU delivered by cesarean section but the difference was not much significant. p-value is 0.05. It shows that mode of delivery was not a significant factor which influenced admission to NICU. Birth asphyxia and birth trauma were most common causes of neonatal morbidity and admission to NICU.

Similar to our study, Igwegbe AO et al (2010) reported that 32.00% of vaginally delivered newborns and 10.00% of cesarean delivered newborns got admitted to NICU but p-value is 0.09 which is not statistically significant. It showed that neonatal outcome was not affected by mode of delivery. Study conducted by Mukhtar B et al (2013) reported that admission to NICU was more in vaginally delivered group (8.30%) as compared to cesarean section group (5.00%). p-value is 0.4 which is not statistically significant which was comparable to our results. Similar to our results other studies like Giuliani A et al (2002), Lukas J et al (2018), Alarab A et al (2004) and reported no significant difference in neonatal morbidity in vaginally delivered and cesarean section delivered newborns in term breech.Study conducted by Eide MG et al (2005) also reported no significant difference in intellectual performance in vaginally delivered and cesarean section delivered newborns.[57] Similarly study conducted by Goffinet F et al (2006) reported that 2.1% newborns in vaginally delivered got admitted to NICU and 1.5% newborns of cesarean section delivery got admitted to NICU. Though this study showed that difference was not significant which was similar to our study.

Conclusion

Although APGAR at 1 & 5 minute were low in newborns delivered by vaginal delivery as compared to cesarean section but the difference was not much significant. So vaginal delivery still a safe option for breech babies with proper selection and when conducted by a skilled obstetrician.

References

1. Karning RK, Bhanu BT, Sarojini. Mode of delivery and outcome of breech presentation: a prospective observational study in a tertiary centre. Int J Reprod Contracept Obstet Gynecol. 2017 Aug;6(8):3409-3413.
2. Jennewein L, Kielland-Kaisen U, Paul B, Mollmann CJ, Klemt AS, Schulze S, Bock N, Schaarschmidt W, Bruggmann D, Louwen F. Maternal and neonatal outcome after vaginal breech delivery at term of children weighing more or less than 3.8 kg: A FRABAT prospective cohort study. PLoS One. 2018 Aug 23;13(8):e0202760. doi: 10.1371/journal.pone.0202760. eCollection 2018.
3. Mukhtar B, Khan B, Rasheed N. Breech presentation at term; fetal outcome in planned cesarean section versus planned vaginal birth. Professional Med J. 2013;20(4):526-529.
4. Giuliani A, Scholl WMJ, Basver A, Tamussino KF. Mode of delivery and outcome of 699 term singleton breech deliveries at a single center. Am J Obstet Gynecol. 2002 Dec;187(6):1694-8. doi: 10.1067/mob.2002.127902.
5. Alarab M, Carmen Regan, O'Connell MP, Keane DP, O'Herlihy C, Foley ME. Singleton vaginal breech delivery at term: still a safe option. Obstet Gynecol. 2004 Mar;103(3):407-12. doi: 10.1097/01.AOG.0000113625.29073.4c.
6. Igwegbe AO, Monago EN and Ugboaja JO. Caesarean versus Vaginal Delivery for Term Breech Presentation: A Comparative Analysis. Afr J Biomed Res. Jan 2010; 13:15 - 18.

7. Eide Mg, Oyen N, Skjaerven R, Irgens LM, Bjerkedal T, Nilsen ST. Breech delivery and intelligence: a population-based study of 8,738 breech infants. Obstet Gynecol. 2005 Jan;105(1):4-11. doi: 10.1097/01.AOG.0000149743.80837.d3.
8. Goffinet F, Carayol M, Foidart JM, Alexander S, Uzan S, Subtil D, Breart G, PREMODA Study Group. Is planned vaginal delivery for breech presentation at term still an option? Results of an observational prospective survey in France and Belgium. Am J Obstet Gynecol. 2006 Apr;194(4):1002-11. doi: 10.1016/j.ajog.2005.10.817.