



Retrospective Analysis of Breech Deliveries in A Rural Tertiary Care Center

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Abstract

Introduction: Breech presentation is the commonest malpresentation accounting for 3-5% of singleton fetuses at delivery. It is a high-risk pregnancy with adverse fetal outcomes in labour and delivery.

Methods: This hospital based retrospective observational cross-sectional study was conducted at department of Obstetrics and Gynaecology, College of Medicine & JNM hospital (COM&JNMH), Kalyani for a period of 1 year from 1st July 2020 to 30 June 2021. The objectives of the present study were to determine the incidence of breech deliveries, study the patient profile and analyze the perinatal outcome. All the patients with gestational age between 28 weeks and 41 weeks, with singleton pregnancy with breech presentation admitted in our hospital during the study period were included in this study. Multiple pregnancies and in-utero fetal deaths were excluded. Data was collected and analyzed in rate and percentage.

Results: The incidence of breech was found to be 2.01%. It was seen that 71.2% of cases belonged to 20-35 years age group. 47.7% were primigravida and majority (58.1%) had gestational age between 37-40 weeks. Prematurity and Intrauterine growth restriction (IUGR) were the commonest associated factors and majority cases (59.4%) were delivered vaginally. 41.17% of babies had 2.5 to 3.5 kg weight and 63.3% had Apgar score >7. Incidence of neonatal care unit admission was about 37.9%.

Conclusion: The rising trend in caesarean section in breech presentation in developing countries may be minimized by adequate training of healthcare workers.

Keywords:Breech, Prematurity, Mode of Delivery

INTRODUCTION

Breech presentation is the commonest malpresentation accounting for 3-5% of singleton fetuses at delivery. It is a high-risk pregnancy with adverse fetal outcomes in labour and delivery. Adverse outcomes in breech deliveries are mainly attributed to preterm delivery, preterm premature rupture of membranes, intra uterine growth restriction, oligohydramnios.[1] Breech presentation results from uterine anomalies, cornuofundal insertion of placenta, placenta previa, oligohydramnios, fetal growth restriction, prematurity, short umbilical cord, fetal anomalies like

hydrocephalus, and swellings in front of the neck.[2,3] The commonest cause of breech presentation with placenta previa is prematurity though near term the incidence decreases due to spontaneous rectification to vertex presentation. Congenital anomalies of fetus were often associated with breech presentation. Common association were with central nervous system and renal anomalies.[4] Caesarean section for breech is not recommended universally but it has been observed in 'Term Breech Trial' by Hannah et al in 2000 that caesarean section can reduce the perinatal

mortality and morbidity compared to vaginal delivery.[5] The present obstetrical decisions regarding mode of delivery of breech fetus has been greatly influenced by results of Hannah et al.

MATERIAL AND METHODS

This study was conducted at department of Obstetrics and Gynaecology, College of Medicine & JNM hospital, Kalyani for a period of 1 year from 1st July 2020 to 30 June 2021. The objectives of the present study were to determine the incidence of breech deliveries, study the patient profile and analyze the perinatal outcome. The study was a hospital based retrospective observational cross-sectional study. All the patients with gestational age between 28 weeks and 41 weeks, with singleton pregnancy with breech presentation admitted at the department of Obstetrics and Gynaecology during the study period were included in this study. We excluded multiple pregnancies and in-utero fetal deaths. Data regarding age of patient, gestational age, parity, and mode of delivery, sex, weight of baby, associated risk factors, fetal complications, Apgar score and neonatal intensive care unit (NICU) admission were collected. Data was analyzed in rate and percentage. Institutional Ethical clearance and permission for data access was taken for this study.

RESULTS

In this retrospective study a total of 153 cases were studied for a period of 1 year. The incidence of breech was found to be 2.01% (153 out of 7586 deliveries). It was seen that 71.2% of cases belonged to the age group between 20-35 years. 17.6% were in the age group less than 20 years and 11.1% belonged to age group above 35 years (Table I). 47.7% were primigravida, 45% were multigravida, and 7.1% were grandmultipara (Table II).

It was found that according to gestational age 58.1% cases belonged to gestational age between 37-40 weeks, 35.9% between 28 to 37 weeks and 5.8 % above 40 weeks (Figure 1).

In the current study breech presentation was found associated with prematurity in about 35.9%, Intra uterine growth restriction (IUGR) in 18.9%, Placenta previa in 14.4%, oligohydramnios in 11.7%, uterine anomalies in 5.8% and 2.6% were associated with fetal

anomalies (TableIII) .40.6% cases delivered by caesarean section, whereas 59.4% were delivered vaginally by assisted breech delivery (Table IV).

Commonest indication for caesarean was primi breech (29cases, 18.9%). Other indications for caesarean section were previous caesarean, complicated breech, breech with oligohydramnios etc. There was 1 case of caesarean hysterectomy done for associated placenta accreta.

Higher incidence of female fetuses (97cases, 63.4%) was found whereas 56 cases (36.6%) were male babies. 41.17% of babies belonged to the group of weight with 2.5 to 3.5 kg, 3.9% babies with weight more than 3.5 kg, 37.9% with weight between 1.5 and 2.5 kg, 16.9% with less than 1.5 kg (Table V).

Of the total babies delivered 36.6% babies had Apgar score at 5 mins less than 7 and 63.3% babies had more than 7 (Table VI). There was no record of any injury to any delivered baby either vaginally or by caesarean section.

Out of the 56 babies with less than 7 Apgar score, 67.85% (38) cases were delivered vaginally and 85.1% had birth weight less than 2.5 kg. Incidence of neonatal care unit admission was about 37.9%. Perinatal deaths were recorded in 9 cases out of which 7 were delivered vaginally and 2 were delivered by caesarean section.

DISCUSSION

Mode of delivery of breech babies is a topic of controversy for obstetricians. Vaginal delivery in breech presentation represents a challenging condition. In our study the incidence of breech delivery was 2.01% which is comparable to the findings of Moodley et al and Karning RK et al where breech incidence was found to be 2.4% and 2.9% respectively. [6,7]

In the present study, the maximum cases of breech were seen in the age group between 20 – 35 years (71.2%) which correlated with the study by Shankaran et al showing an incidence of 84.6% in the same age group. [8] In our study majority of the breech cases were primigravida (47.7%). Other studies also had similar findings where most cases were primigravida [7,8,9]. Increased incidence of breech in primigravida maybe due to tight abdominal wall with good rectus muscle tone in such women. Our finding of maximum cases at 37-40 weeks of gestation (58.1%) was similar

to another study where 41% cases belonged to same gestational age. [8]

Prematurity was the commonest association with breech presentation (35.9%) in our study which tallies with the study by Fruscalzo A et al. [10] Other common associations found in our study were Intrauterine growth restriction, Placenta Previa, oligohydramnios etc. Few other studies found such associations. [8,11]

Caesarean rate was comparatively low (40.6%) in our study while Mariella et al and Lee et al had found caesarean rate to be 60.45% and 85.1% respectively. [12,13] As in our setup multipara and grand multipara with breech constituted 52.1% so the caesarean rate may have been comparatively lower. RCOG (2017) has recommended birth of breech babies in a hospital with facilities for immediate caesarean section with planned vaginal breech birth, but birth in an operating theatre is not routinely recommended. Further, routine caesarean section for breech presentation in spontaneous preterm labour is not recommended. The mode of delivery should be individualized based on the stage of labour, type of breech presentation, fetal wellbeing and availability of an operator skilled in vaginal breech delivery. [14]

Higher incidence of female fetuses (97cases, 63.4%) was seen in our study. Similar findings were found by Talas et al [15]. We found that 41.17% of babies belong to the group of weight with 2.5 to 3.5 kg and 28.8% babies are below 2.5kg which tallies with findings of Rayl et a[16].

Our findings in the study showed that less than 7 Apgar score was observed mostly in cases delivered vaginally (67.85%). Similar findings were observed by Mariella et al and Pradhan P et al also. [14,17] But if we compare the Apgar score of vaginally delivered babies amongst themselves then it is evident that 58.24% (53 cases) babies had more than 7 Apgar score. In our study injury to baby during delivery was not found whereas in few studies plexus injury and fracture was recorded. [14,18]

Perinatal mortality was more in babies delivered vaginally which was also seen in few other studies. [1,7] However, much significant difference in the neonatal morbidity and mortality among the vaginal and caesarean delivery groups was not found by Sankaram et al.[8] Authors of few retrospective studies

reported excellent neonatal outcome after vaginal term deliveries in patients selected by strict criteria, without any differences in 5-minute Apgar scores, arterial cord blood pH, neonatal transfer rates, neurologic abnormalities or infant mortality between vaginal breech delivery and planned cesarean section.[19,20]

CONCLUSION

Lack of skilled birth attendants and healthcare workers have led to increase in caesarean deliveries and same is true for increase in perinatal morbidity and mortality in vaginally delivered breech babies. The rising trend in caesarean section in breech presentation in developing countries may be minimized by adequate training of medical and nursing staff by experienced obstetricians. Judicious selection of cases, counseling of patient with informed consent may be another parameter to be taken care of to minimize the complications associated with breech delivery.

Conflict of Interest:None

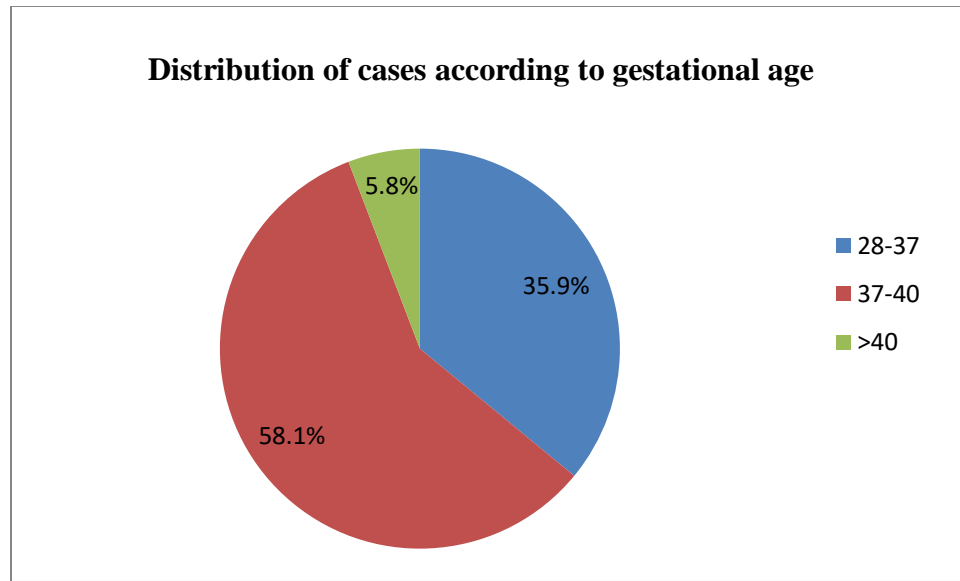
REFERENCES

1. Toijonen A, Heinonen S, Gissler M, Macharey G. Risk factors for adverse outcomes in vaginal preterm breech labour. *Arch Gynecol Obstet.* 2020.
2. Sekulic S, Ilincic M, Radeka G, Novakov-Mikic A, Simic S, Podgorac J. Breech presentation and the cornual-fundal location of the placenta. *Croatian Med J.* 2013;54(2):198-202
3. Filipov E, Borisov I, Kolarov G. Placental location and its influence on the position of the fetus in the uterus. *AkushGinekol (Sofiiia).* 2000;40:11-2.
4. Mostello D, Chang JJ, Bai F, Wang J, Guild C, Stamps K, Leet TL. Breech presentation at delivery: a marker for congenital anomaly? *J Perinatol.* 2014;34(1):11-5.
5. Hannah ME, Hannah WJ, Hewson SA, Hodnett ED, Saigal S, Willan AR. Planned caesarean section versus planned vaginal birth for breech presentation at term; a randomized multicenter trial. *Term Breech Trial Collaborative Group. Lancet.* 2000;356:1375- 83.
6. Moodley J, Khedhen SM, Devjee J. Breech presentation at a district level hospital in South Africa. *SA Fam Pract.* 2010;52(1):64-68.

7. 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 ObstetGynecol*2017; 6:3409-13.
8. Sankaran SM, Pillai JS. Retrospective analysis of breech deliveries in tertiary care center. *Int J Reprod Contracept ObstetGynecol*2020; 9:4549-53.
9. Hehir MP, O'Connor HD, Kent EM, Fitzpatrick C, Boylan PC, Coulter-Smith S, et al. Changes in vaginal breech delivery in a single large metropolitan area. *Am J Obstet Gynecol*. 2012;206(6):498.
10. Fruscalzo A., Londero A. P., Salvador S., et al. New and old predictive factors for breech presentation: our experience in 14 433 singleton pregnancies and a literature review. *The Journal of Maternal-Fetal & Neonatal Medicine*. 2014;27(2):167–172. doi: 10.3109/14767058.2013.806891.
11. Olatunji AO, Sule AO. Term breech delivery at a university hospital in Nigeria. *Niger Postgrad Med J*. 1999; 6:171-4.
12. Mariella Mailàth-Pokorny, Oliver Preyer, Christian Dada³, Andreas Lischka, Martina Mittlbock, Peter Wagenbichler, Thomas Laml. Breech presentation: a retrospective analysis of 12-years' experience at a single center *Wien KlinWochenschr* (2009) 121: 209–215
13. Lee HC, El-Sayed YY, Gould JB. Population trends in cesarean delivery for breech presentation in the United States, 1997-2003. *Am J Obstet Gynecol*. 2008;199(1):1-59.
14. Impey LWM, Murphy DJ, Griffiths M, Penna LK on behalf of the Royal College of Obstetricians and Gynaecologists. Management of Breech Presentation. *BJOG* 2017; DOI: 10.1111/1471-0528.14465.
15. Talas BB, Altinkaya SO, Talas H, Danisman N, Gungor T. Predictive Factors and short –term fetal outcomes of breech presentation: A Case – Control study. *Taiwan J Obstet Gynecol*. 2008;4(4):402-7.
16. Rayl J, Gibson PJ, Hickok DE. A population – based case-control study of risk factors for breech presentation. *Am J ObstetGynecol*. 1996; 174:28-32.
17. Pradhan P, Mohajer M, Deshpande S. Outcome of term breech births: 10-year experience at a district general hospital. *BJOG: Int J Obstet Gynecol*. 2005;112(2):218-22.
18. Gilbert WM, Hicks SM, Boe NM, Danielsen B (2003) Vaginal versus cesarean delivery for breech presentation in California: a population-based study. *ObstetGynecol* 102: 911–917
19. Doyle NM, Riggs JW, Ramin SM, Sosa MA, Gilstrap LC (2005) Outcomes of term vaginal breech delivery. *Am J Perinatol* 22: 325–328
20. Alarab M, Regan C, O'Connell M, Keane D, O'Herlihy C, Foley M (2004) Singleton vaginal breech delivery at term: Still a safe option. *ObstetGynecol* 103: 407–412.

FIGURES

Figure I: Distribution of cases according to gestational age



TABLES

Table I: Distribution of cases as per age of mother

Age group of Patient	Number of cases	Percentage
Less than 20 years	27	17.6%
20-35 years	109	71.2%
Above 35 years	17	11.1%

Table II: Distribution of cases as per parity of mother

Parity of patient	Number of cases	Percentage
Primipara	73	47.7%
Multipara	69	45%
Grand Multipara	11	7.1%

Table III: Distribution of cases as per associated factors

Causes	Number of cases	Percentage
Prematurity	55	35.9%
IUGR	29	18.9%
Oligohydramnios	18	11.7%
Placenta Praevia	22	14.4%
Pre eclampsia	8	5.2%
Abruptio placentae	8	5.2%
Uterine anomalies	9	5.8%
Fetal anomalies	4	2.6%

Table IV: Distribution of cases as per mode of delivery

Mode of delivery	Number of cases	Percentage
Caesarean section	62	40.6%
Vaginal Delivery	91	59.4

Table V: Distribution of cases as per baby weight

Weight of baby	Number of cases	Percentage
less than 1.5 kg	26	16.9%
1.5 – 2.5 kg	58	37.9%
2.5-3.5 kg	63	41.17%
More than 3.5 kg	6	3.9%

TableVI: Distribution of cases as per Apgar score at 5mins

Apgar Score	Number of cases	Percentage
<7	56	36.6%
>7	97	63.3%