

## Research Article

### Outcome of Breech Vaginal Delivery in Females Presenting at Term

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#### Abstract

**Background:** Rate of fetal and maternal complications and death also increase with breech delivery.

**Objective:** To assess the outcome of neonates of vaginal breech delivery in females undergoing vaginal trial for breech pregnancy at term, and to determine the morbidities associated with breech delivery and their effects on the health of neonates either long term or short term.

**Methodology:** It was analytical cross-sectional study, done at the Department of Obstetrics & Gynecology, Services hospital, Lahore for 6 months i.e. 1st August 2016 to 1st February 2017. About 150 females fulfilled the inclusion criteria for vaginal breech delivery were included and underwent trial of labour for breech pregnancy. If successful vaginal delivery achieved, then it was labelled. Data were entered & analyzed on SPSS v. 20.

**Results:** The mean age of females was  $29.85 \pm 6.60$  years, the mean gestational age at delivery was  $40.09 \pm 1.42$  weeks. The normal vaginal delivery was done in 86 (57.3%) patients. The poor Apgar score was noted in 21 (24.42%) patients. NICU admission was noted in 31 (36%) patients.

**Conclusion:** Thus, normal vaginal delivery can be achieved in >50% females of breech presentation though the frequency of adverse outcomes are not ignorable but it is associated with short term morbidity only which can be easily managed and no long term morbidity is seen.

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**Key Words:** APGAR, neonatal intensive care unit, Vaginal Delivery, Breech pregnancy

#### Introduction

Breech pregnancy is defined as the fetus lie longitudinally with the buttocks or fetal feet are close to the cervix, instead of head.<sup>1</sup> Breech presentation can complicate around 3-4% of pregnancies. The chances of breech pregnancy and delivery reduces with the increasing gestational age i.e. from 22% at 28<sup>th</sup> week to 7% at 32<sup>nd</sup> week to 1-3% at term.<sup>2</sup> Mode of delivery of breech pregnancy at

term is still a subject of controversy for many decades. In 2006, the guidelines of Royal College of Obstetrics & Gynecology substituted their obstructive 2001 guidelines for breech pregnancy by a newer version, which supports the selected cases with breech pregnancy for vaginal delivery.<sup>5</sup> Vaginal delivery for breech pregnancy is the safe decision in the presence of senior expert obstetricians with precise decision-making before labor and delivery.<sup>7</sup> Delivery through cesarean section is the most

preferred way for many obstetricians, owing to the reduced expertise in conducting a vaginal delivery for breech presentation. Scheduled vaginal delivery for a singleton breech fetus at term can be sensible for both; appropriateness and management of labor.<sup>8</sup>

Term breech Trial published in year 2000 emphasizes that only short term morbidity is associated with vaginal breech delivery that are manageable in most of the cases and no difference in perinatal morbidity between a planned caesarean section and trial of labour.

Now looking at the complexity of situation in Pakistan the large family size, poverty, lack of surgical expertise in rural areas all go in favor of trial of labour for term breech.

Rationale of this researcher project was to find the outcome of vaginal breech delivery and their neonatal effects as the pool of expertise in vaginal breech births has shrunken rapidly. Many new gynecologists do not have the experience necessary to supervise a breech trial of labour. So theoretical and practical breech births training modules must be a part of basic obstetrics training. Elective caesarean sections has replaced vaginal deliveries for term breech fetuses due to fear of complication. This increasing rate of caesarean section worldwide is alarming. The comorbidities associated with caesarean are increasing day by day. It has not only led to increase in adverse consequences in subsequent pregnancy and future fertility but also loss of skills of vaginal breech delivery.<sup>9-11</sup> The vaginal deliveries are still the only option available in far flung areas where caesarean sections cannot be performed.

This study was designed to determine the outcome of neonates of vaginal breech delivery and the morbidities associated with breech delivery and their effects on the health of neonates either long term or short term. Moreover, few local evidence has been found in literature which could help us in implementation of the vaginal delivery trial in breech cases in our local context. This will help to upgrade local guidelines for management of such cases by society of obstetricians and gynaecologists.

## Methods

It was analytical cross-sectional study, done at Gynae Unit III, Department of Obstetrics & Gynecology, Services hospital, Lahore Pakistan, during 1st August 2016 to 1st February 2017. It is a tertiary care hospital dealing with all obstetrical and gynaecological emergency. Approval of the study was obtained from ethical review Board of Services Institute of Medical Sciences. Sample size of 150 cases is estimated by keeping 95% confidence level, 8% margin of error & percentage of breech vaginal delivery i.e. 47.2% in females presenting with breech pregnancy. Sampling Technique was Non-probability, consecutive sampling. Inclusion Criteria consist of Females of age 20-40 years, presenting with singleton fetus, with extended breech in position, defined as a fetus in a longitudinal lie with the buttocks or feet closest to the cervix at gestational age >37 weeks on ultrasound at term (gestational age >37 week). Exclusion criteria includes Females with high risk pregnancy i.e. PIH (BP >140/90 mmHg), pre-eclampsia (BP >140/90, proteinuria +1 on dipstick method), eclampsia (BP >140/90, plus convulsions), diabetes (BSR >186 mg/dl), caesarean delivery for other indications like Pre Labour rupture of membranes (PROM), placental abruption, placenta previa or accreta, macrosomia (baby weight >4kg, on clinical assessment). Data Collection was done by 150 females fulfilled the selection criteria were recruited from labour room. Informed consent & demographic data were obtained. Then females underwent trial of labour. Delivery was assisted by researcher herself. If successful vaginal delivery was achieved, then it was noted. Otherwise in case of contraindication (abnormal Cardiotocograph or meconium stained liquor), female underwent caesarean delivery and then mode of delivery was noted. After delivery, Apgar score of neonate was noted and in case of poor Apgar score or respiratory problem, neonate admitted in Neonatal Intensive Care Unit. Apgar score was labeled as poor if Apgar score was <7 after 5 minutes of birth and NICU admission was noted if neonate required NICU admission due to poor Apgar score, respiratory problem, R/R >60/minute or meconium stained aspiration syndrome, etc. That all are short term

morbidities. Data were gathered in proforma. Data enter and analyzed via software SPSS v. 20. Mean  $\pm$  standard deviation were estimated for age, duration of gestation, birth weight, Apgar score & duration of NICU admission. Frequency and percentage were estimated for reason for NICU admission, gender, vaginal breech delivery and outcome i.e. poor Apgar score and NICU admission.

## Results

Mean age of females was  $29.85 \pm 6.60$  years. In our study 30 (20%) were primigravida and 120 (80) multigravida. The mean gestational age was  $40.09 \pm 1.42$  weeks. (Table 1)

In this study the normal vaginal delivery was done in 86(57.3%) patients and other source delivery done in 64(42.7%) patients.

There were 72(48%) male and 78(52%) female neonates. The mean birth weight was  $2865.55 \pm 341.07$ grams and the mean Apgar score of neonates was  $7.37 \pm 1.26$ . Poor Apgar score was noted in 21(24.42%) neonates, NICU admission was required in 31(36%) cases. The mean duration of NICU admission was  $45.10 \pm 15.18$ hours. NICU admission was required in 21 (67.74%) cases due to poor Apgar score, 6(19.35%) due to respiratory problem and 4(12.90%) due to meconium stained liquor. (Table 2)

In male neonates, nine had poor Apgar score while in female neonates, twelve had poor Apgar score. In male neonates, sixteen had NICU admission score while in female neonates, fifteen had NICU admission score. The difference was insignificant for both genders ( $p > 0.05$ ). In neonates weighed <

3000grams, fifteen had poor Apgar score while in neonates weighed  $\geq 3000$ grams, six had poor Apgar score. In neonates weighed  $< 3000$ grams, twenty one had NICU admission score while in neonates weighed  $\geq 3000$ grams, ten had NICU admission score. The difference was insignificant for both birth weight groups ( $p > 0.05$ ). Table 3

Long term morbidities included cerebral palsy, limb fracture, brachial plexus injuries were not reported in any case of term breech delivered through vaginal route.

**Table 1:** Baseline Characteristics of Females with Breech Presentation

n	150
Age (years)	$29.85 \pm 6.60$
Primigravida	30 (20%)
Multigravida	120 (80%)
Gestational Age (weeks)	$40.09 \pm 1.42$

**Table 2:** Outcome of Vaginal Delivery of Breech Pregnancy

Gender of neonate	
Apgar score	$7.37 \pm 1.26$
Poor Apgar score	21 (24.4%)
Good Apgar score	65 (75.6%)
NICU admission	31 (36%)
NICU duration (hours)	$45.10 \pm 15.18$
Reason of NICU admission	
Poor Apgar score	21 (67.7%)
Respiratory problem	6 (19.4%)
Meconium stained liquor	4 (12.9%)

**Table 3:** Comparison of Neonatal Outcome with Gender and Birth Weight of Neonate

	Gender of neonate		$\chi^2$ value	P-value	Birth weight (grams)		$\chi^2$ value	P-value
	Male	Female			<3000	$\geq 3000$		
Poor Apgar score	9	12	0.011	0.915	15	6	1.129	0.288
NICU admission	16	15	1.894	0.169	21	10	0.766	0.381

**Discussion:**

Until 1959, previously the vaginal deliveries for breech pregnancies were the standard when it was offered that breech pregnancy must undergo delivery via cesarean section to decrease the fetomaternal morbidity and mortality.<sup>12, 13</sup> Incidence is correlated to gestational age. Though, the rate of successful delivery is 3-4%.<sup>14</sup>

The international incidence of breech presentation has been reported at 3-4%. Several complications are related to the breech presentation during active labor. This may be because of the primary cause of breech presentation, like fetal anomalies and polyhydramnios. Additionally, complications can develop as a consequences of umbilical cord compression owing to the uncommon presentation to maternal pelvis.<sup>15</sup> Older maternal age is a consideration.<sup>16</sup>

In our study the normal vaginal delivery was done in 86(57.3%) patients, the poor APGAR score was noted in 21(24.42%) patients and the patients with NICU admission were 21(14%) neonates.

A study by Vistad et al.,<sup>17</sup> presented a very high rate of vaginally delivery in females who presented with breech fetus. This rate was much higher than reported in other studies. In Netherlands, around 20% of vaginal deliveries in breech pregnancy can be achieved breeches are delivered vaginally after term breech trial than 50% vaginal deliveries before term breech trial.<sup>18</sup> The rate of vaginal delivery in term breech trial are even lower in Scotland, Ireland & Denmark; 5-10% after trial versus 20-23% before trial.<sup>19-21</sup> Furthermore, few researchers concluded that few selected vaginal breech deliveries may be secure in the hospitals where obstetricians have a practice of vaginal deliveries.<sup>22</sup>

In a study by Pradhan et al., it was noticed that out of 881 cases of breech presentation, 416 (47.2%) undergo successful vaginal delivery while remaining undergo cesarean section. Among these females who underwent successful vaginal breech delivery, poor Apgar score was noticed in 5.9% cases and 4%

neonates required NICU admission.<sup>9</sup> One more study conducted by Vistad et al., has reported that successful vaginal delivery can be achieved in 51% breech cases. Out of these vaginal deliveries, 2.4% had poor Apgar score while 10% had NICU admissions.<sup>10</sup>

In one more study by Igwegbe et al., 66.7% of the patients had vaginal delivery while 26 (33.3%) were delivered through caesarean section in breech presentation, but poor Apgar score was found in 42.3% neonates and NICU admission was also 61.5%, in breech cases underwent vaginal breech delivery.<sup>11</sup> However in our study poor APGAR was is found in 24.4 % (P=0.915) and NICU admission in 36% (P=0.169). Thus better outcome of breech vaginal delivery has been reported in this study.

Numerous trials determined that there is no difference exist regarding the perinatal outcomes, whether the breech pregnancy is delivered via vaginal route or by incision in the abdominal cavity, though other trials strongly recommended elective cesarean sections for such cases. But rate of vaginal delivery for breech pregnancy have been extensively acknowledged.<sup>5</sup>

**Conclusion:**

Thus, normal vaginal delivery can be achieved in >50% females of breech presentation but the frequency of adverse outcomes are ignorable because vaginal breech delivery at term is associated with short term morbidities only which are easily manageable and no long term morbidity is seen. Pre-planned trials for breech presentation can be conducted to prevent adverse outcome to secure the life and health of baby and mother.

**Ethical Approval:** Given

**Conflict of Interest:** The authors declare no conflict of interest

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**References:**

1. Sirisena L, Sirisena T, de Silva P, Ranafhunga A. Management of Breech Presentation. 2010 [cited February 12, 2020]. Available from: Management-



- Breech-Presentation-SLCOG.pdf.
2. Dars S, Malik S, Bhurgri A. Is breech still being delivered vaginally? A comparative study. *Int J Reprod Contracep Obstet Gynecol.* 2014;3(1):144-148.
  3. Habib S, Riaz S, Abbasi N, Ayaz A, Bibi A, Parveen Z. Vaginal breech delivery: still a safe option. *J Ayub Med Coll Abbottabad.* 2013;25(3-4):38.
  4. Jadoon S, Khan Jadoon S, Shah R. Maternal and neonatal complications in term breech delivered vaginally. *J Coll Physicians Surg Pak.* 2008;18(9):555-558.
  5. Hehir MP, O'Connor HD, Kent EM, Fitzpatrick C, Boylan PC, Coulter-Smith S, et al. Changes in vaginal breech delivery rates in a single large metropolitan area. *Am J Obstet Gynecol.* 2012;206(6):498.
  6. Toivonen E, Palomaki O, Huhtala H, Uotila J. Selective vaginal breech delivery at term-still an option. *Acta Obstet Gynecol Scand.* 2012;91(10):1177-1183.
  7. Maier B, Georgouloupoulos A, Zajc M, Jaeger T, Zuchna C, Hasenoehrl G. Fetal outcome for infants in breech by method of delivery: experiences with a stand-by service system of senior obstetricians and women's choices of mode of delivery. *J Perinat Med.* 2011;39(4):385-390.
  8. ACOG Committee on Obstetric Practice. ACOG Committee Opinion No. 340. Mode of term singleton breech delivery. *Obstet Gynecol.* 2006;108(1):235-237.
  9. Pradhan P, Mohajer M, Deshpande S. Outcome of term breech births: 10-year experience at a district general hospital. *Br J Obstet Gynaecol.* 2005;112(2):218-222.
  10. Vistad I, Cvancarova M, Hustad BL, Henriksen T. Vaginal breech delivery: results of a prospective registration study. *BMC Pregnan Child.* 2013;13(1):153.
  11. Igwegbe A, Monago E, Ugboaja J. Caesarean versus vaginal delivery for term breech presentation: a comparative analysis. *Afr J Biomed Res.* 2013;13(1):15-18.
  12. Caughey AB, Cahill AG, Guise J-M, Rouse DJ, Obstetricians ACo, Gynecologists. Safe prevention of the primary cesarean delivery. *Am J Obstet Gynecol* 2014;210(3):179-193.
  13. Solheim KN, Esakoff TF, Little SE, Cheng YW, Sparks TN, Caughey AB. The effect of cesarean delivery rates on the future incidence of placenta previa, placenta accreta, and maternal mortality. *J Mat Fetal Neonat Med.* 2011;24(11):1341-1346.
  14. Tunde-Byass MO, Hannah ME. Breech vaginal delivery at or near term. *Semin Perinatol.* 2003;27(1):34-45.
  15. Hannah ME, Hannah WJ, Hewson SA, Hodnett ED, Saigal S, Willan AR, et al. Planned caesarean section versus planned vaginal birth for breech presentation at term: a randomised multicentre trial. *The Lancet.* 2000;356(9239):1375-1383.
  16. Rayl J, Gibson PJ, Hickok DE. A population-based case-control study of risk factors for breech presentation. *American journal of obstetrics and gynecology.* 1996;174(1):28-32.
  17. Vistad I, Cvancarova M, Hustad BL, Henriksen T. Vaginal breech delivery: results of a prospective registration study. *BMC Pregnan Childbirth.* 2013;13(1):153.
  18. Rietberg C, Elferink-stinkens P. The effect of the Term Breech Trial on medical intervention behavior and neonatal outcome in the Netherlands: an analysis of 35,453 term breech infants. *BJOG.* 2005;112(2):205-209.
  19. Pasupathy D, Smith GC. Neonatal outcomes with caesarean delivery at term. *Archives of Disease in Childhood-Fetal and Neonatal Edition.* 2008;93(3):174-175.
  20. Hartnack Tharin JE, Rasmussen S, Krebs L. Consequences of the term breech trial in Denmark. *Acta Obstet Gynecol Scand.* 2011;90(7):767-771.
  21. Uotila J, Tuimala R, Kirkinen P. Good perinatal outcome in selective vaginal breech delivery at term. *Acta Obstet Gynecol Scand.* 2005;84(6):578-583.