

A Study of Fetomaternal Outcome in Breech Presentation Beyond 34 Weeks of Gestation

Received: 17 February 2023, **Revised:** 23 March 2023, **Accepted:** 26 April 2023

Dr. Vidhya Raghavan¹, Dr. (Col) Rakesh Anand², Dr. Hiral Dobariya³

¹2nd Year Resident, Department of Obstetrics & Gynaecology, Dhiraj General Hospital, Sbks Mi & Rc, Sumandeep Vidyapeeth University

²Professor Of Obstetrics & Gynaecology and Gynaecology Oncology, Director Pg Studies, Department of Obstetrics & Gynaecology, Dhiraj Hospital, Sbks Mi & Rc, Sumandeep Vidyapeeth University

³2nd Year Resident, Department of Obstetrics & Gynaecology, Dhiraj General Hospital, Sbks Mi & Rc, Sumandeep Vidyapeeth University

Keywords:

Breech presentation, Caesarean section, Vaginal delivery, Perinatal mortality, morbidity

Abstract

Background: The most frequent malpresentation, accounting for 3-4% of pregnancies at term, is breech. Due to spontaneous correction, the incidence is around 24% at the 28th week of pregnancy and declines to 6-8% by the 34th week. In cases when the requirements are satisfied, there are several options for breech deliveries, including assisted vaginal birth, scheduled caesarean section, and external cephalic version.

Aims & Objective:

In the present study, fetomaternal outcome in singleton breech presentation after 34 weeks of gestation was examined. To evaluate the maternal and perinatal outcomes between vaginal delivery (VD) and Caesarean section (CS) for singleton term pregnancy with breech presentation, as well as to learn the relevant variables for various modalities of delivery in breech presentation.

To access the factors involved in breech presentation.

Material & Method:

This is a prospective study of 76 instances of antenatal patients at Dhiraj Hospital who were in labour with breech presentations after 34 weeks of gestation between March 2022 and April 2023.

Result:

The rate of breech presentation was 3.19% in this prospective research. Breech presentation was more frequent in multigravidas among the 76 cases examined, with booked instances making up the majority of these cases. Compared to assisted breech birth, caesarean delivery was more common in primigravida and multigravida individuals. When compared to vaginal birth, the perinatal outcome was better after a caesarean section.

Discussion & Conclusion:

Breech deliveries are thought to be high risk deliveries, hence they should take place at tertiary care institutions with access to an expert obstetrician with operating rooms and NICUs.

1. Introduction

When the podalic pole—the fetus' buttocks or a lower extremity—presents at the pelvic inlet, it is known as a breech presentation. It is the most typical kind of malpresentation and has an incidence rate of 3-4% at term (2). Due to spontaneous correction, the incidence is around 24% at the 28th week of pregnancy and declines to 6-8% by the 34th week.(2) For women who meet the requirements, there are several options for breech deliveries, including assisted vaginal birth, scheduled caesarean section, and external cephalic version.

Prematurity, polyhydramnios, oligohydramnios, uterine abnormalities, constricted pelvis, and fetal malformations such as multiple pregnancies, hydrocephalus, anencephaly, chromosomal defects, and IUFD are the main maternal reasons for breech presentation. According to some research, implantation of the placenta in the cornual or fundal area is more likely to result in breech presentation. Additionally, there is a favourable correlation between breech and placenta previa. Breech presentation increases the risk of operational vaginal birth, cervical injury, vaginal perineal trauma, operative morbidity, anaesthesia problems, and infection.(3)(4)

Journal of Coastal Life Medicine

Prematurity, congenital abnormalities, umbilical cord prolapse, and fetal hypoxia from various sources of fetal damage are some of the factors impacting perinatal death and morbidity. One of the main causes of fetal death is intracranial haemorrhage, which is more likely with breech delivery. Hemiplegia, cerebral palsy, epilepsy, and mental retardation are all significant long-term morbidities. The Term Breech Trial (Hannah trial), which was conducted in 2000, has had a significant impact on current thinking on vaginal delivery of singletons that are breech at term. This lack of expertise with vaginal breech delivery has resulted in a marked increase in maternal morbidity in subsequent pregnancies.⁽⁵⁾ A singleton pregnancy with persistent breech presentation throughout term gestation was first advised to have an elective caesarean section by ACOG 2001, RCOG, and SOGC. Recurrent breech: risk increases by 9% for the first breech birth, -25% for the second breech delivery, and 30% for the third breech delivery.^[6]

1. Frank breech: Extendable knees and flexed hips. adjacent head and face. (most typical)

2. Complete breech: The fetus is in the position with flexion of hips and legs.

3. Partial breech: One or both hips are not fully flexed. The presenting component is either the buttocks or one or both feet.

There is ECV (External Cephalic Version) option in breech presentation (6,7) with a success rate of 60%. Breech position can be changed to cephalic using ECV, allowing for delivery with cephalic presentation. After 37 weeks of gestation, 1 in 20 instances spontaneously develop into cephalic presentations; hence ECV is to be carried out after 36 weeks. Wherever practically possible, a version should be given, according to ACOG 2016's recommendations.

Criteria for trial :

Frank or complete breech

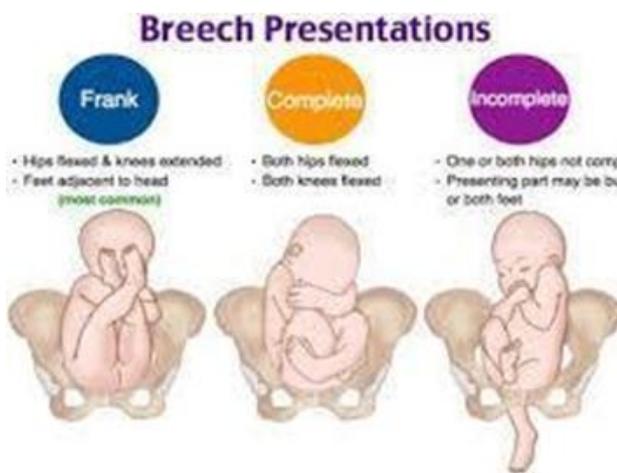
Term gestation 36-42 weeks

EFW 2.5-3.5kg

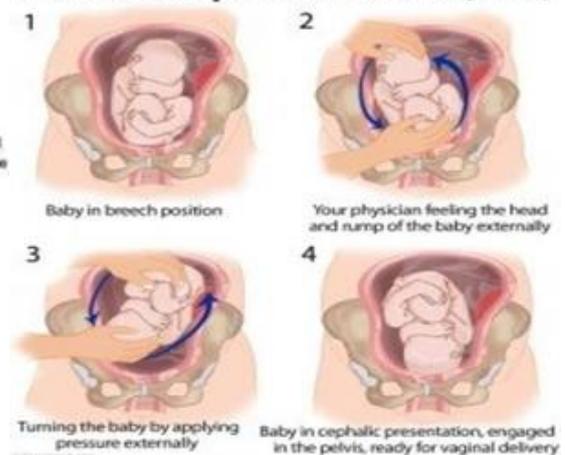
Flexed or neutral fetal head

Adequate maternal pelvis

No fetomaternal indications for c-section



External Cephalic Version (ECV)



Journal of Coastal Life Medicine

ZATUCHNI ANDROS SCORING SYSTEM

	Add 0 points	Add 1 point	Add 2 points
Parity	0	1	2
Gestational age	39+	38	<37
EFW	<2.5kg	2.5-3.5kg	>3.5kg
Previous Breech	0	1	2
Dilation	2	3	4
Station	3	2	1

If score is 0-4, c-section is recommended

The outcome of term breech experiment has played a part in the dramatic increase of caesarean deliveries in the twenty-first century. Additionally, this growth has dealt a severe blow to the art of vaginal breech birth, which has been exacerbated by the medicolegal issues surrounding it, making the newer generation of obstetricians less skilled in handling breech deliveries and increasing the risk of problems. Therefore, in cases of breech presentation after 34 weeks, it was necessary to analyse the perinatal and maternal outcomes with the following goals. (8)

2. Aims and Objectives

- ❖ In the present study, fetomaternal outcome in singleton breech presentation after 34 weeks of gestation was examined.
- ❖ To evaluate the maternal and perinatal outcomes between vaginal delivery (VD) and Caesarean section (CS) for singleton term pregnancy with breech presentation, as well as to learn the relevant variables for various modalities of delivery in breech presentation.
- ❖ To access the factors involved in breech presentation.

3. Material and Method

- With approval from the Institutional Ethics Committee, a prospective research was carried out in the Obstetrics and Gynaecology Department at Dhiraj Hospital.
- Study population: all antenatal patients at Dhiraj hospital who had a singleton breech presentation after 34 weeks of gestation.
- Study period: March 2022- April 2023
- Study design: Prospective study
- Sample size: 76

INCLUSION CRITERIA

- After 34 weeks of pregnancy, all Singleton Breech babies delivered vaginally or by abdominal surgery were included.

EXCLUSION CRITERIA

- Multiple pregnancies.
- Pregnancy accompanied with comorbid conditions including diabetes, thyroid disorders, or hypertension.

Journal of Coastal Life Medicine

- Fetus with congenital anomaly
- Pregnancy with a gestational age of <34 weeks.
- Pregnancy with coexisting complications i.e. PIH, GDM, Antepartum haemorrhage, severe oligohydramnios, previous caesarean section.
- Pregnancies accompanied by gynaecological issues such fibroids, cervical polyps, any previous uterine surgery etc.

4. Methodology

Following approval from the Institutional Ethics Committee, a prospective research lasting one year, from March 2022 to April 2023, was conducted at Dhiraj Hospital. There were 3100 births in the following year of which 100 were breech pregnancies.

We inquired about each patient's menstrual and obstetric history, prenatal care history, and number of visits. All patients had thorough systemic and general physical examinations. Fundal height, abdominal girth, foetal presentation, engagement, foetal heart sounds, and uterine contractions were examined per abdominally. During the

per-vaginal examination, the cervix's location, effacement, and dilatation were recorded. Bag of membranes, the presenting part, station, and the sufficiency of the pelvis were assessed. Routine blood investigations were carried out .To confirm a single foetus, presentation, kind of breech, amniotic fluid volume, placenta location, estimated foetal weight, any evident congenital anomalies, and position of the foetal spine, the patient had undergone an ultrasound examination. Following protocol, the choice between a vaginal and a caesarean section was made. Patients and caregivers had a discussion about the delivery plan. Patients who agreed for vaginal delivery received it as a trial.

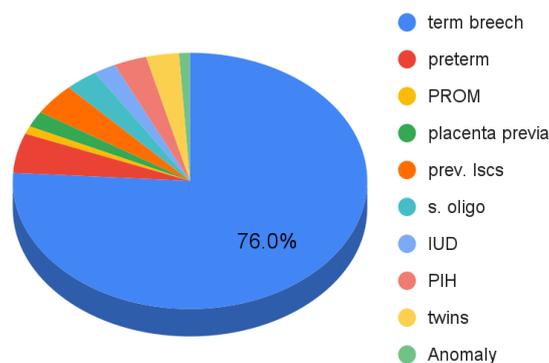
5. Observation & Results:

100 of the 3100 births throughout the study's 1-year time frame—or 3.19% of all births—were breech pregnancies. 5 of the 100 breech births (i.e., 34 weeks or less) were premature. The related variables, such as placenta previa, severe oligohydramnios, PROM, PIH, Previous c-section, twins, fetal anomaly, and IUD, led to the exclusion of an additional 17 cases. Thus, 76 women who met the requirements were included in the analysis.

TABLE: 1 INCIDENCE

Total no. of deliveries	Total no of breech presentation	Incidence
3100	100	3.19%

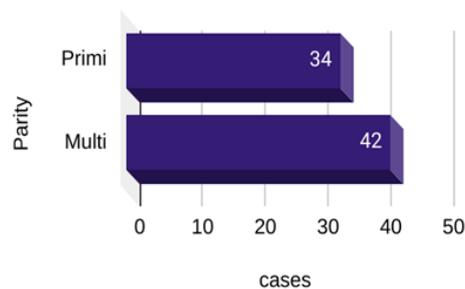
Case distribution:



Journal of Coastal Life Medicine

TABLE 2: PARITY

Parity	cases	%
Primi	34	45%
Multi	42	55%



Due to the weaker uterine musculature in multigravida, which favours malrotation and consequent breech

presentation, the study demonstrates that the incidence is greater in multipara than primigravida.

TABLE 3: AGE OF THE PATIENT

Age Group	case	%
<20 yrs	1	1.6%
20-30 yrs	68	89.4%
>30 yrs	7	9%

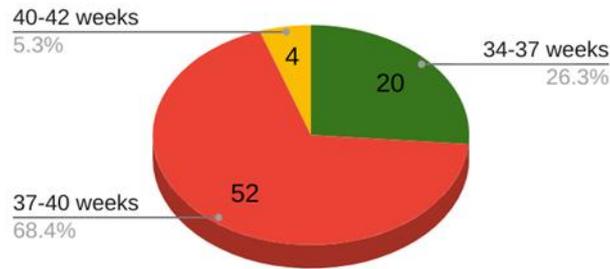
Due to early marriage and pregnancy, the majority of women who conceive in India fall in the 20–30 age

bracket, where the prevalence of breech birth is highest (89.4%).

TABLE 4: GESTATIONAL AGE AT THE TIME OF DELIVERY.

Gestational Age	Case	%
34-37 weeks	20	26%
37-40 weeks	52	69%
40-42 weeks	4	5%

Journal of Coastal Life Medicine



69% of cases were above 37 weeks at the time of birth, 26% were between 34 and 37 weeks, and just 5% were between 40 and 42 weeks.

Some women who live in rural slums and are extremely poor and illiterate chose not to have their pregnancies

recorded since it was impossible for them to follow up for prenatal check-ups because they depend on daily salaries. Therefore, they come right away if there is labour pain or if the patient has a serious ailment that interferes with their everyday life and is intolerable for the patient.

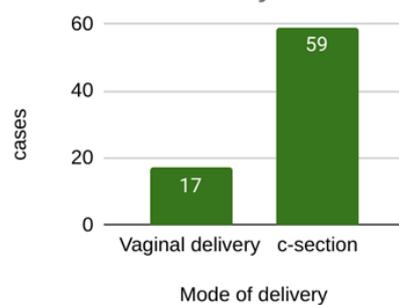
TABLE 5: ANC REGISTRATION

Booked	50	65%
Unbooked	26	35%

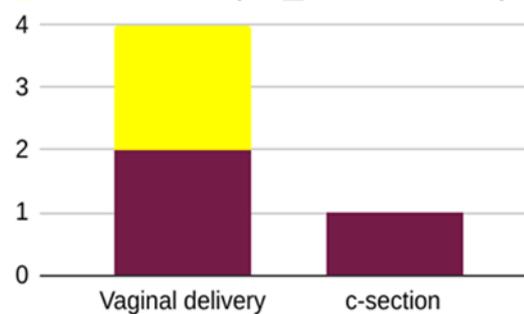
TABLE 6: PERINATAL OUTCOME IN RELATION TO MODE OF DELIVERY

Mode of delivery	cases	%	Perinatal mortality		Perinatal morbidity	
			Cases	%	Cases	%
Vaginal delivery	17	23%	2	9.4%	2	12%
c-section	59	77%	1	1.6%	0	0

Mode of delivery



Perinatal morbidity Perinatal mortality



Journal of Coastal Life Medicine

Perineal injuries of any severity, cervical tear, PPH, and maternal mortality were taken into consideration for maternal outcome following an episiotomy.

Neonatal morbidity manifests as preterm birth, IUGR, and RDS.

The paediatrician started doing rapid resuscitation on each infant. The newborns were examined. The APGAR score was calculated at 1 and 5 minutes. Mother and child were evaluated after discharge, and the proper contraceptive advice was given.

TABLE 7: DISTRIBUTION ACCORDING TO BIRTH WEIGHT

Birth wt	cases	%
2-2.5kg	16	21%
2.5-3.5 kg	57	75%
>3.5kg	3	4%

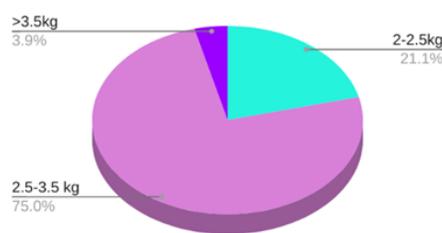


TABLE 8: NICU ADMISSION

	Cases	%
Vaginal delivery	10	58%
c-section	6	10%

16 out of 76 cases examined underwent NICU admission. Six patients out of 59 caesarean deliveries (or 10%) and ten cases out of 17 vaginal deliveries (or 58%), respectively, were admitted to the NICU. IUGR, respiratory distress syndrome, or preterm births were the main reasons for NICU admissions. Compared to c-section deliveries, vaginal deliveries had a higher rate of NICU hospitalizations.

6. Discussion

The rate of breech presentation was 3.19% in this prospective research. Breech presentation frequency

varies between primigravida and multipara individuals. Incidence is 55% in multipara patients vs 45% in primigravida individuals. In our hospital, only 23% of breech babies were delivered vaginally; 77% of patients underwent Caesarean sections. Vaginal deliveries had a greater rate of NICU admission, which suggests that vaginal breech deliveries have a higher risk of perinatal death and morbidity than caesarean deliveries do. Breech deliveries are thought to be high risk deliveries, hence they should take place at tertiary care institutions with access to an expert obstetrician with operating rooms and NICUs. We have the chance to teach obstetricians how to deliver breech babies vaginally while simultaneously

Journal of Coastal Life Medicine

preventing uterine scarring and its subsequent consequences. Because undetected breech cases and births that occur at a point in labour that is too advanced for a caesarean section will always occur, it is crucial to underline the value of maintaining the knowledge of vaginal breech deliveries. Therefore, every hospital should have the necessary procedures for vaginal delivery (9). Furthermore, despite the caesarean section possibly appearing to be much safer for breech babies, many moms still choose vaginal deliveries due to the potential risks associated with a caesarean section (9).

Delivering a baby breech is connected with several prenatal problems. Patients often arrive during the active stage of labour, followed by the latent period. They have already reached the point in the labour process where an obstetrician can quickly determine whether a trial vaginal birth can be performed or whether an elective cephalic version or elective caesarean section is necessary. [10] In situations when there is severe oligohydramnios or polyhydramnios, which can cause chorioamnionitis, premature membrane rupture is common, an emergency caesarean section is the best option to prevent further infection in the mother and to prevent perinatal morbidity and mortality in the fetus. In order to prevent shoulder and head entrapment, episiotomies were performed on patients who received a trial of labour. [10,11] Emergency caesarean sections were performed on patients in whom there was a risk of cord entrapment, such as in the case of the Footling presentation. Vaginal deliveries of high-risk breech babies that resulted in head entrapment and subsequent referral to higher centres for the same have resulted in hypoxia and brain damage, which has led to newborn mortality in metropolitan areas without access to expert obstetricians.

7. Conclusion

When a singleton fetus presents in breech at term, a caesarean section reduces the risk of an adverse perinatal outcome due to both labour and delivery issues compared to a vaginal delivery. However, this difference is minimal when confounding factors like prematurity and intrauterine fetal distress are present. Additionally, it was discovered that vaginal breech deliveries performed by multigravida women result in better neonatal outcomes than those performed by primigravida women. Therefore, vaginal birth definitely beats caesarean in multigravida patients who have excellent uterine contractions and active labour but no other obstetric difficulties except

from the malpresentation. Additionally, with primigravida, if the pelvis is adequate, the patient is in active labour, the breech presentation is favourable, the fetal condition is reassuring, and the mother is bearing down well, vaginal delivery should be attempted if the setup is ready for an emergency surgical procedure, and the person conducting the delivery is qualified, has the technical skills necessary for vaginal breech delivery, and is aware of the various manoeuvres needed for it.

The most common causes of caesarean sections were found to be nulliparous women, booked women, pregnant women who were not in labour at the time of admission, full breech women, women with greater gestational ages, and babies that weighed more than 3 kg. Caesarean patients are more likely to have maternal morbidity, which includes endometritis, UTI, anaemia, PPH, the need for blood transfusions, and a lengthier hospital stay. On the other side, vaginal delivery groups are more likely to have prenatal morbidity, such as poor Apgar scores, birth asphyxia, birth trauma, the requirement for NICU hospitalisation, and newborn death. As elective C-sections have increasingly become the standard procedure for term breech presentation in many centres, it was evident from the current study that more than half of the instances with breech presentation were delivered by caesarean section. In order for parents to make an educated decision on the method of delivery, they should get in-depth counselling and advice from paediatricians. To help the learner acquire confidence without endangering the health of the mother or the infant, an experienced accoucheur is required for support and assurance.

References

- [1] Robbins J, Boyle M. Malpresentation and malpositions. *Emergencies Around Childbirth: A Handbook for Midwives*. 2011:85.
- [2] Dars S, Malik S, Bhurgri A. Is breech still being delivered vaginally? A comparative study. *International Journal of Reproduction, Contraception, Obstetrics and Gynecology*. 2014 Mar 1;3(1):144-9.
- [3] Williams obstetrics, 24rd edition, chapter 28 : breech presentation and delivery, page 558-573
- [4] Oxorn – Foote's Human Labor and Birth, 6th edition, chapter 15 : Breech Presentation, Page 472-513
- [5] Hannah ME, Hannah MJ, Hewson SA, Hodnett ED, Saigal S, et al. Planned caesarean section versus planned vaginal birth for breech presentation at term:

Journal of Coastal Life Medicine

- a randomised multicentre trial. Term Breech Trial Collaborative Group Lancet. 2000;256:1375-1375.
- [6] Mishra RK, Vardhan S, Chawla S. Outcome of breech presentation after 34 weeks of period of gestation of pregnancy. The New Indian Journal of OBGYN. 2023; 9(2): 323 – 27.
- [7] M A Majrooh, A Z Wasim “singleton vaginal breech delivery at term. Maternal and perinatal outcome”
- [8] Mehta S, Lilhare V, Raval B, Parikh R. A Study on Fetomaternal Outcome of Breech Presentation. In a Tertiary Care Hospital. Natl J Integr Res Med 2019; Vol.10(6): 50-53
- [9] Vidovics M, Jacobs VR, Fischer T, Maier B. Comparison of fetal outcome in premature vaginal or caesarean breech delivery at 24-37 gestational weeks. Archives of gynaecology and obstetrics. 2014 Aug;290:271-81.
- [10] Fong YF, Arulkumaran S. Breech extraction-an alternative method of delivering a deeply engaged head at caesarean section.
- [11] Committee on Obstetric Practice. ACOG committee opinion: number 265, December 2001. Mode of term single breech delivery. Obstetrics and gynecology. 2001 Dec;98(6):1189-90.