International Journal of Clinical Obstetrics and Gynaecology

ISSN (P): 2522-6614
ISSN (E): 2522-6622

www.gynaecologyjournal.com
2024; 8(6): 93-96
Received: 08-10-2024
Accepted: 12-11-2024

Dr. Sonal M Solanki
3rd Year Resident, Department of Obstetrics and Gynecology, Dr. MK Shah Medical College and Research Center, Ahmedabad, Gujarat, India

Dr. Arti J Patel
Professor, Department of Obstetrics and Gynecology, Dr. MK Shah Medical College and Research Center, Ahmedabad, Gujarat, India

Dr. Bijal Bhati
Assistant Professor, Department of Obstetrics and Gynecology, Dr. MK Shah Medical College and Research Center, Ahmedabad, Gujarat, India

Corresponding Author:
Dr. Sonal M Solanki
3rd Year Resident, Department of Obstetrics and Gynecology, Dr. MK Shah Medical College and Research Center, Ahmedabad, Gujarat, India

A study on fetomaternal outcome of singlet one breech delivery at tertiary care hospital

Sonal M Solanki, Arti J Patel and Bijal Bhati

DOI: https://doi.org/10.33545/gynae.2024.v8.i6b.1545

Abstract
Introduction: Breech presentation, which accounts for 3-4% of singletone pregnancies at term is a form of malpresentation in which the podalic pole (foetal buttock and/or lower extremities) appears at the pelvic inlet. Certain unfavourable outcomes for both mother and foetus are linked to breech presentation. The study's objective was to determine the frequency of breech presentation at tertiary care hospital as well as their effects on mothers and foetuses.
Methods: This retrospective study was carried out in the department of obstetrics and gynaecology of Smt. SMS hospital and Dr. M.K. Shah Medical college Chandkheda, Ahmedabad. Total 100 cases were included from march 2022 to March 2024 and included all the patients fulfilling the inclusion criteria.
Results: The prevalence of breech was found to be 3.85% among 2,592 total deliveries in them majority, 51% cases were in the age group of 21-25 years, with 53% being primigravida, 67% registered for antenatal care, most of the cases were delivered by caesarean section (93%) which were associated with PIH, oligohydramnios and PROM. Perinatal morbidity in form of IUGR, LBW, foetal distress was seen to be higher in babies delivered vaginally (57%) as compared to 18.27% in cases delivered by caesarean section from the rate of NICU admission.
Conclusion: In case of breech presentation the mode of delivery should be determined by gestational age, type of breech, stage of labour, foetal wellbeing and availability of skilled obstetrician and the availability of paediatrician/NICU. Compared to vaginal delivery in breech presentation, casearean section minimise perinatal morbidity and mortality but do not completely remove the related maternal and foetal outcomes.

Keywords: Breech presentation, caesarean section, maternal and perinatal outcome, mode of delivery

Introduction
The term breech is probably derived from the word "britches" which is the name of a cloth used to cover loins and thighs [1, 4]. Breech presentation is defined as a type of malpresentation in which the podalic pole (foetal buttocks and/or lower extremity) presents at the pelvic inlet in longitudinal lie with sacrum as denominator which accounts for 3-4% at term in singletone pregnancy [2, 4]. The causes of breech presentation are mostly attributable to prematurity, abnormal amniotic volume, utrine and fetal anomalies and placenta previa etc. Breech presentation and delivery are associated with a higher risk of maternal and perinatal problems, making them a high risk pregnancy condition [8, 9]. This study was conducted to investigate the current trends in breech care in our hospital, as well as maternal and perinatal outcomes of singletone breech deliveries.

Aims and Objectives
1. To find out the prevalence of breech delivery.
2. To study the maternal and fetal factors associated with breech presentation.
3. To assess the mode of delivery in case of singleton breech presentation.
4. To study feto-maternal outcome of singleton breech delivery at our institute.

Material and methodology
This retrospective study, over the period extending from March 2022 to March 2024 included all the singleton breech delivery cases fulfilling the inclusion and exclusion criteria. The data were collected from the Medical Record Department (MRD) and analysed as per predefined proforma of the hospital, kept confidential and privacy of patient's profile was taken due care.

Inclusion criteria

All patients with singleton breech presentation who delivered at our institute.

Exclusion criteria

1. All cases with either cephalic presentation or malpresentations other than breech presentation
2. Multifetal pregnancy

Study site: Department of obstetrics and gynaecology of Smt. S.M.S. Multispecialty hospital and Dr. M. K. Shah Medical college, Chandkheda, Ahmedabad, Gujarat.

Observation and discussion: During the study period, the institute had 2592 deliveries with 100 breech deliveries, so the incidence of breech presentation was found to be 3.85% in this study which similar findings of 3.24% in Ratna *et al*. and it varies from 3 to 4% in various studies.

Table 1: Maternal variables associated with breech deliveries in present study

Maternal variables		Total no. of cases	Percentage of total breech delivery	Ratna *et al.*	Mishra *et al.*	Norahain *et al.*
Maternal age	< 20 years	03	03%	00%	00%	
	21 -25 years	51	51%	47.42%	47.5%	
	26-30 years	36	36%	28.86%	41%	
	>30 years	10	10%	23.75%	11.5%	
Parity	Primigravida	53	53%	52.57%	45.34%	38.18%
	2nd -4th gravida	44	44%	35.05%	54.66%	61.81%
	Grand multipara >/=5	03	03%	12.37%	-	
Booking status	Registered	67	67%	-	-	10.90%
	Unregistered	33	33%	-	-	89.09%
ANC visits	<4	68	68%	-	-	
	>4	32	32%	-	-	
Socioeconomic class	Upper	02	02%	-	-	
	Middle	56	56%	-	-	
	Lower	42	42%	-	-	

Analysis of maternal demographics indicate that majority of breech deliveries were in primigravida women (53%) [due to several factors like shape and tone of uterus, prematurity, abnormal placental implantation, maternal pelvic structure uterine anomalies, lack of prior uterine stretching] similar to other studies [1, 2]. The higher number of breech presentations in younger maternal age groups, particularly those aged 21-25 years, not only indicates peak of reproductive carries but also highlights the need for targeted counselling and support for first-time mothers, 67% of women with breech deliveries were registered for antenatal care that reflecting awareness and acceptance of antenatal care. Understanding the demographic factors contributing to breech presentation in this data could enhance prenatal care strategies.

Table 2A: Mode of delivery in breech presentation

Mode of delivery	Cases	Percentage	Ratna *et al.*	Mishra *et al.*	Norahain *et al.*
Vaginal delivery	07	07%	11.34%	34.60%	55.75%
Caesarean delivery	93	93%	88.65%	65.33%	44.24%

Mode of delivery: Our study reported a caesarean delivery rate of 93% for breech presentations, significantly higher than Ratna *et al*. (88.65%) and notably higher than Mishra *et al*. (65.33%). This trend underscores the cautious approach adopted by clinicians in managing breech deliveries, likely influenced by concerns over potential complications associated with vaginal breech birth. The high caesarean rate reflects a shift towards prioritizing maternal and neonatal safety [1, 2]. Increase fetomaternal complication associated with vaginal breech delivery has become major cause of alternate mode of delivery by caesarean section our study is also in accordance with them, but the opportunity to plan the mode of delivery before labour is not provided to the obstetrician in a referral hospital like ours and emergency caesarean section yielded comparable results in terms of perinatal outcome we therefore recommended a very balanced decision regarding the mode of delivery in the tertiary centers of developing countries [6, 10].

Table 2B: Indications of caesarean section (N= 93)

Indications of CS		Percentage	Ratna *et al.*	Mishra *et al.*
PROM	14	15.5	13.95	18.3
Oligohydramios	16	17.2	12.79	14.92
PIH	08	8.6	11.62	2.05
GDM	02	2.15	5.81	0.00
Breech at term	38	40.86	61.9	29.04
Previous CS	15	16.12	11.62	21.76
IUGR	04	4.3	3.48	2.04
Uterine anomaly	02	2.2	1.46	2.04
Post dated	06	6.45	4.65	5.44
Bed obstetric history	01	1.07	12.79	0.00
Placenta previa	01	1.07	4.65	2.72

The commonest indication for emergency caesarean section was in cases who presented in labour with breech presentation which accounts 40.86% before the scheduled date of surgery Other obstetric condition of caesarean sections included PROM (15.5%) and oligohydramnios (17.2%), with our rates showing variability compared to other studies. Of these 8.6% cases of PIH presented as severe preeclampsia and one case had central placenta praevia who was preterm with APH and remaining cases involved multiple indications who underwent emergency caesarean section These findings may prompt a review of the management protocols for these conditions in pregnant women with breech presentations, ensuring that appropriate interventions are implemented to minimize risks.

Table 3A: Distribution of breech deliveries according to gestational age

Gestational age	No. of cases	Percentage	Ratna *et al.*	Mishra *et al.*
<37 week	51	51%	34%	10%
37 to 40 weeks	42	42%	63%	90%
>40 weeks	07	07%		0%

Table 3B: Gestational age and its relationship to delivery mode a cross different studies

Gestational age	Vaginal delivery		%	Ratna *et al.*	Caesarean delivery		%	Ratna *et al.*
	Plan	Spotaneous			Elective	Emergency		
<37 week	01	03	4%	8.2%	14	33	47%	26.8%
37 to 40 weeks	00	03	3%	3.1%	11	28	39%	61.9%
≥ 40 weeks	00	00	0%	0	01	06	7%	0
Total	01+06 = 07		7%	11.3%	14 +79 = 93		93%	88.7%

The majority of breech deliveries (51%) of breech cases being less than 37 weeks of gestation may indicate a higher prevalence of preterm breech presentations, suggesting that early detection and management strategies could be vital in this subgroup contrasting with Ratna *et al*. (34%) and Mishra *et al*. (10%) and at term, breech deliveries 42% occurred from 37 to 40 weeks of gestation and 7% in more than 40 weeks of gestation, consistent with Ratna *et al*. (63%) and Mishra *et al*. (90%).

Table 4A: Foetal and neonatal outcome

Foetal and neonatal outcome		Case	Percentage	Ratna *et al.*	Mishra *et al.*
Apgar score for 1 minute	**<7**	82	82	-	-
	>7	18	18		
Apgar score for 5 minutes	**>7**	79	79		
	<7	21	21		
Resuscitation required	Yes	06	06		
	No	94	94		
Foetal complications (indications for NICU admission)	Prematurity	32	32	35	21.3
	RDS	16	16	12.3	9.6
	Septicemia	01	01	-----	----
	Asphyxia	01	01	1.6	----
	IUGR	01	01	3.1	2.6
	Hypothermia	04	04	---	-----
Neonatal mortality	_	_	_	_	_

Table 4B: NICU admission and mode of delivery

Mode of delivery	No. of cases in NICU admission	Percentage	Ratna *et al.*	Mishra *et al.*
Vaginal delivery	4(4/7)	57%	63.6%	63.5%
Caesarean section	17(17/93)	18.27%	16.2%	14.2%

The rate of NICU admissions for vaginal deliveries (57%) aligns with previous studies, while only 18.27% of caesarean deliveries required NICU care. This suggests that caesarean deliveries may provide a protective effect against certain neonatal complications. The favourable APGAR scores, with 79% of infants scoring >7, indicate generally good neonatal outcomes. The low resuscitation requirement (6%) further reflects effective perinatal care. Our study found that 32% of infants were premature, which is concerning compared to Ratna *et al*. and Mishra *et al*. additionally, the prevalence of respiratory distress syndrome (RDS) was higher at 16% indicating a potential area for improved prenatal management, especially for those at risk of prematurity.

Table 5: Maternal complications

Complications	No. of cases	Percentage	Ratna *et al.*	Mishra *et al.*
No complications	91	91	81.4	87.4
PROM	04	04	9.2	8.2
PPH	03	03	5.1	4.4
Wound gap	02	02	_	4.1

The majority of mothers (89%) had uncomplicated childbirth, which is a promising finding. This is higher than reported in both comparative studies, suggesting that our care protocols may effectively mitigate risks associated with breech deliveries. However, the incidence of specific complications such as PROM and PPH should continue to be monitored to ensure ongoing maternal safety.

Conclusion

The findings from our study on breech deliveries reveal critical insights into the management and outcomes of this presentation, highlighting both similarities and discrepancies compared to existing literature. In the present study the incidence of breech presentation was recorded at 3.85% and it was clearly found with an overwhelming majority (93%) delivered by caesarean section. Complications such as prematurity and respiratory distress syndrome were notable, and NICU admissions were more frequent among vaginally delivered infants compared to those born by caesarean [4, 5]. Though perinatal morbidity is more in cases delivered vaginally and caesarean sections mitigate some risks associated with breech presentations but they do not completely eliminate negative outcomes. Ultimately, this study highlights the necessity for personalized management approaches in breech deliveries to enhance safety of both maternal and neonatal outcomes, especially in vaginal deliveries, which exhibited higher perinatal morbidity.

Funding: No funding sources

Conflict of interest: None declared

Ethical approval: The study was approved by the institutional ethics committee.

References

1. Ratna P, Jena P. A study on fetomaternal outcome of breech presentation in atertiary care hospital. JMSCR. 2018;6(12):703-708. DOI:10.18535/jmscr/v6i12.114.
2. Mishra RK, Vardhan S, Chawla S. Outcome of breech presentation after 34 weeks of gestation. Obstet Gynecol. 2023;9(2):26. DOI:10.21276/obgyn.2023.9.2.26.
3. Impey LWM, Murphy DJ, Griffiths M, Penna LK. Royal College of Obstetricians and Gynaecologists. Management of breech presentation. BJOG. 2017;124:e151-e67.
4. Cunningham FG, Leveno KJ, Bloom SL, *et al*. Williams obstetrics. 26th ed. New York: McGraw-Hill Education; 2018. Chapter 28, Singleton breech delivery, 1324-61.
5. Mostello D, Chang JJ, Bai F, Wang J. Breech presentation at delivery, a marker for congenital anomaly. J Perinatol. 2014;34(1):11-15.
6. Niles KM, Barrett JFR, Ladhani NNN. Comparison of cesarean versus vaginal delivery of extremely preterm gestations in breech presentation: retrospective cohort study. J Matern Fetal Neonatal Med. 2019;32(7):1142-1147.
7. Singh A, Mishra N, Dewangan R. Delivery in breech presentation: the decision-making. J Obstet Gynaecol India. 2012;62(4):401-405.
8. Mehta S, Natu N, Jain S. Maternal and perinatal outcome in term singleton breech presentation at term pregnancy. Int J Reprod Contracept Obstet Gynecol. 2023;12:959-963.
9. Gaikwad S, Rokade R. Study of maternal and perinatal outcome of breech in vaginal and operative delivery in a university hospital. Int Med J. 2014;1(6):252-258.
10. Singh A, Mishra N, Dewangan R. Delivery in breech presentation: the decision-making. J Obstet Gynaecol India. 2012;62(4):401-405. DOI:10.1007/s13224-012-0289-7.

How to Cite This Article
Solanki SM, Patel AJ, Bhati B. A study on fetomaternal outcome of singlet one breech delivery at tertiary care hospital. International Journal of Clinical Obstetrics and Gynaecology. 2024;8(6):93-96.