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Analysis of Maternal and Foetal Outcomes in Breech Delivery

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Abstract

Aim and Background: Breech presentation is the commonest malpresentation and is often known to be associated with maternal and perinatal morbidity. This study aims to identify common contributing factors to the incidence of breech presentation and comparison of different management protocol. It further highlights maternal and perinatal complications with breech delivery.

Methods: A retro-prospective observational study was conducted including 123 participants from Obstetrics and gynecology department in an urban tertiary care hospital.

Results: Incidence of term breech was 67.5% among 123 participants, of which majority were primigravida and most common aetiology of breech presentation was prematurity. 46 patients had vaginal delivery while LSCS was performed in 77 patients. In maximum cases no complications were reported. Overall maternal morbidity marginally higher in LSCS patients (11.7%) than vaginally delivered patients. The rate of perinatal morbidity was higher in vaginally delivered patients.

Conclusion: With advancing time, caesarean section has become preferred modality for breech delivery to avoid adverse perinatal outcomes. However, method of delivery in breech presentation should be based on gestational age, type of breech, stage of labour, skills of an obstetrician and fetal surveillance.

Keywords: Breech, Malpresentation, Vaginal, LSCS, Perinatal, Morbidity

Introduction

The word breech was coined from the "britches" which is a cloth covering loin. Breech presentation is a form of malpresentation when lower extremity enters the pelvic inlet first in a longitudinal lie.[1] Incidence of breech from 22-25% at<28 weeks' gestation reduces to 7-15% at 32 weeks' and reported to be 3-4% at term.[2] Factors contributing to breech presentation include prematurity, uterine anomalies, hydramnios, placenta previa, multiple gestation and fetal factors like CNS

malformations / neck masses. History of breech presentation in previous pregnancy also increases the risk of repeat breech presentation.[3] The Term Breech Trial conducted in 2000, studied the delivery method in breech presentation with better outcome and found a significant difference in neonatal morbidity [1% vs 0.45%] between trial of labour and planned caesarean section in breech cases.[4] Cochrane review in 2015 published elective caesarean delivery is associated with more than ninety percent drop in unfavourable perinatal outcomes[5]. In 2017, The Royal College of Obstetricians and Gynecologists (RCOG) Breech Delivery Guideline specified that in spontaneous singleton preterm breech, delivery mode should be individualized on the basis of maternal and foetal factors.[6]

Methods

A hospital based Retro – prospective observational study was conducted with 123 patients done in the department of Obstetrics and Gynaecology, GSMC and KEM hospital, Mumbai on IPD basis from July 2020 for period of 18 months. The study was done on women with breech deliveries after permission from the Institutional Ethics Committee and Review Board and after taking written informed consent from the patients.

Inclusion criteria: All breech deliveries (both vaginal and caesarean) conducted in our health care center.

Exclusion criteria

- Non - Consenting patients.
- Outside breech delivery.

Results

In our study, majority (45.6%) belonged to age group of 21-25 years, 22.8% between 26-30 years and 19.4% of 18-20 years and 12.2% were ≥30years. 39.8% were booked cases while 60.2% patients were unbooked cases. Primigravida constituted 46.3% while 53.7% were multigravida.

Table 1: Demographic data (n=123)

Age (years)	N	%
<20 years	24	19.40%
21-25 years	56	45.60%
26-30 years	28	22.80%
≥30 years	15	12.20%
Booking Status	N	%
Booked	49	39.80%
Unbooked	74	60.20%
Parity	N	%
Primigravida	57	46.30%
Multigravida	66	53.70%

We observed 67.5% were at >37 weeks during delivery and 32.5% were preterm.

Table 2: Distribution of patients according to Gestational Age at Delivery (n=123)

Gestational Age at Delivery	N	%
28-32+6 weeks	12	9.70%
33-36+6weeks	28	22.80%
>37 weeks	83	67.50%
Total	123	

As Figure 1 depicts, we found that most common cause was prematurity (32.5%) Uterine anomalies were seen in 9.8%. Other causes were polyhydramnios (8.1%), foetal abnormalities (6.5%), oligohydramnios (5.0%), placenta previa (4.0%) and foetopelvic disproportion (2.4%). No evident cause was found in 31.7% patients.

Figure 1: Distribution of patients according to Etiology of Breech Presentation (N=123)

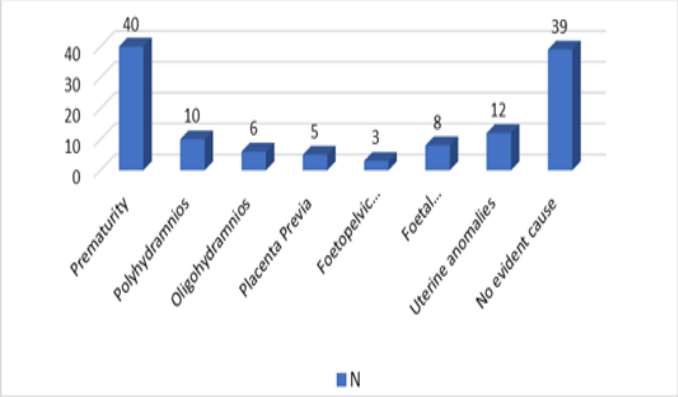
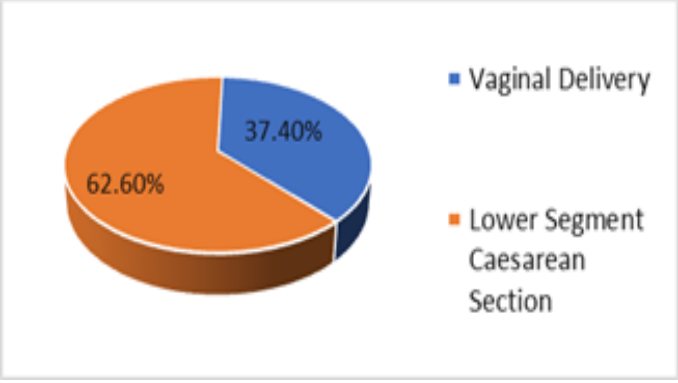


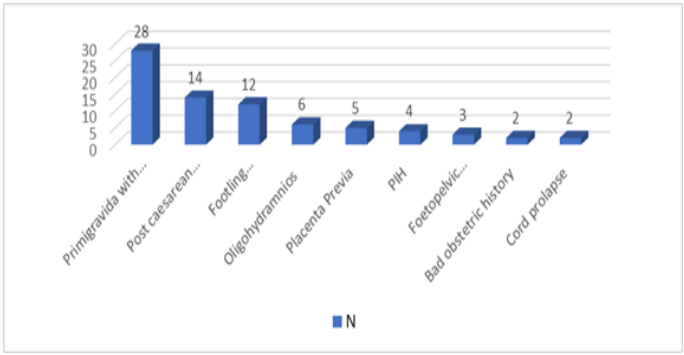
Figure 2 shows, 62.6% underwent Lower Segment Caesarean Section (LSCS) and 37.4% patients had vaginal delivery.

Figure 2: Distribution of patients according to Mode of Delivery



As per Figure 3, the most common indication of caesarean delivery was primigravida with breech (36.4%) followed by post caesarean section breech in 18.1%. Other causes were footling presentation, oligohydramnios, placenta previa, pregnancy induced hypertension (PIH), foetopelvic disproportion, bad obstetric history, cord prolapse, and abruptio placentae.

Figure 3: Distribution of patients according to Indication of LSCS (n=77)



In this study, maternal morbidity was 11.4%, marginally higher in LSCS patients (11.7%) than vaginally delivered patients (10.9%) without any statistical significance. Majority had no complications reported. Most common complication was post-partum hemorrhage (PPH) (6.5%), followed by wound infection in 3.3% and perineal injuries (1.6%) . Perineal injuries included, perineal tear and vaginal hematoma.

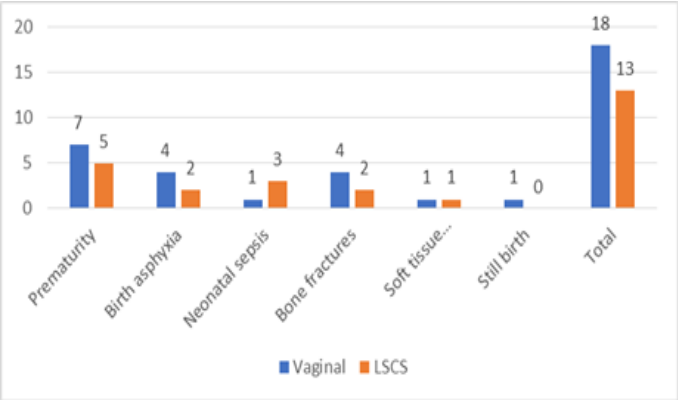
Table 3: Distribution of patients depending on the maternal complication

Complications		LSCS(p=77)	Vaginal(q=46)	Total(n=123)
PPH		6	2	8
Perineal injuries	Vaginal hematoma	-	1	2
	Perineal tear	-	1	
Wound infection		3	1	4
No complications		68	41	109
Total		77	46	123

Out of 123, 37.4% neonates required NICU Admission. 21.9% neonates delivered vaginally were admitted in NICU and 15.45% delivered by caesarean were shifted to NICU. The rate of perinatal morbidity was 25.2%.

Figure 4 shows the most common perinatal morbidity was Prematurity (6.5%) followed by birth asphyxia, fractures and neonatal sepsis. One still birth was noted among vaginally delivered babies, cause of death was prematurity.

Figure 4: Distribution of Neonates according to Perinatal Morbidity



Discussion

A hospital based observational study was conducted with 123 patients to evaluate maternal and fetal outcomes in breech delivery. In this study, most of the patients were between 21-25 years as of Rana S et al[8] and Mehta Set al[9]. Majority (60.2%) patients were un-booked cases concordant to Rana S et al[8]. Our institution is a tertiary hospital with large number of referred patients, a majority of un-booked women get admitted in labour. It was observed in this study that maximum patients were multigravida. Incidence of breech presentation is higher in multipara due to lax abdominal wall. This is comparable to the studies of Rana S et al[8], Mehta S et al[9]. Majority of the patients >37 weeks during delivery. This finding was like the study of Mehta S et al [9].

The commonest etiology of breech noted in the study to be prematurity followed by uterine anomalies similar to Rana S et al[8]. In present series, LSCS was the most preferred mode of delivery and can be compared to studies of Singh A et al[10] and Airao et al[11]. Our center being a tertiary health care hospital and thus with availability of resources, operative delivery is opted more over vaginal delivery to prevent perinatal morbidity and mortality. However, residents are now actively and increasingly being taught the art of conducting vaginal delivery of breech presentation to avoid increasing number of caesarean section. The most frequent indication of caesarean delivery was primigravida with breech followed by previous caesarean section with breech. This is comparable to Rana S et al[8]. In this study, maternal morbidity was marginally higher in LSCS patients, and the most common complication was post-partum hemorrhage,

followed by wound infection and perineal injuries. It is comparable with study of Acharya M et al[12].

It was noted overall perinatal morbidity was higher in vaginally delivered neonates with higher rate of NICU admission as compared to caesarean delivery. Similarly, Rana et al[8] had overall morbidity more in vaginal delivery group. Our findings were supported by Hannah ME et al[13] randomized multicenter trial comparing Elective Cesarean delivery and planned vaginal birth for term breech which showed that risk of adverse perinatal outcome is less in caesarean section when compared to vaginal breech delivery. The most common perinatal morbidity in this study was prematurity followed by birth asphyxia, birth injuries and neonatal sepsis. Prematurity was the main cause of NICU admission especially in vaginally delivered babies and majority of term babies delivered by caesarean did not have any delivery related complications. Similar to our study Rana et al[8] found prematurity to be the largest factor contributing to perinatal morbidity.

Conclusion

Breech presentation can have adverse maternal and fetal outcomes antepartum and intrapartum. With availability of resources, caesarean section has become preferred modality for delivery to prevent perinatal morbidity and mortality. Present obstetric recommendations are to actively educate the young doctors with techniques of vaginal breech delivery and prevent it from becoming a dying art. The method of delivery should be subjective and individualized on the basis of gestation, breech type, stage of labour, fetal surveillance and skills of obstetrician.

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Abbreviations

LSCS	Lower segment cesarean section
RCOG	Royal College of Obstetricians and Gynecologists
IPD	Inpatient department
PIH	Pregnancy induced hypertension
PPH	Post partum hemorrhage
NICU	Neonatal intensive care unit