

The Study of Maternal and Fetal Outcome in the Breech Presentation

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Abstract

Background: Breech presentation is the commonest abnormal fetal presentation met with in practice. It has been attended by a high perinatal morbidity and mortality. The clinical art of conducting vaginal breech delivery and obtaining mastery over the same requires many years of skillful training and supervision. The aim of this study is to assess maternal and fetal outcome in breech presentation. **Methods:** The study is conducted in WEST INDIA in a tertiary care centre for a period of 3 years (January 2015 to December 2017). A total of approx 500 antenatal cases with breech presentation with 37 completed weeks of gestation attending antenatal OPD in our hospital were studied. Patients were subjected to detailed history with respect to age, parity, mode of delivery. Antenatal USG scan was done to confirm breech presentation, type of breech presentation, placental location and uterine anomaly. Maternal parameters (genital tract trauma, wound infection, mortality etc) and fetal parameters (birth weight, APGAR, trauma, NICU admission, mortality etc) documented and analysed using statistical methods. A thorough obstetric and systemic examination was done. **Results:** In our study incidence of breech presentation was more common in multigravida patients (55%) as compared to primigravida patients (45%).

Incidence of breech presentation is more common in age group between 21 to 25 years of age accounting for 48%.

In primigravida patients, incidence of cesarean section was more common than multigravida patients, accounting for 62.50% of total LSCS. In multigravida patient vaginal delivery was more common (56.36%), whereas in primiparous women incidence of cesarean section is higher than vaginal delivery (88.88% v/s 11.11%).

Overall maternal morbidity was higher in LSCS than vaginal delivery. Anterior was most common location of placenta, followed by fundal.

Incidence of oligohydramnios in breech presentation in our study was 4 % & 1 % in case of polyhydramnios. Incidence of placenta previa was 3%.

Distribution of parity according to type of breech was complete breech: 7.80% in primigravida and 92.10% in multigravida. In frank breech 71.92% primigravida and 28.07% in multigravida.

Distribution of type breech among mode of delivery was as follow: Most babies delivered vaginally were of frank variety, about 69.44%. Complete breech accounted for 45% of emergency LSCS, 37.5% of elective LSCS, 30.55% of vaginal deliveries.

Most of the babies (47%) were having baby weight in between 2 to 2.5 kg, 37% having birth weight between 2.5 to 3 kg. The perinatal outcome was good in EL LSCS & EM LSCS with an incidence of 100% & 92.5%. The incidence of low APGAR is 2 times higher in vaginal delivery in comparison with cesarean delivery. The incidence of NICU admission is 7.5% with cesarean delivery and 16.66% with vaginal delivery.

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The multigravida patients have good perinatal outcome than primigravida (92.72% vs 82.22%). Perinatal mortality is commonly associated with vaginal breech delivery 8.33%. In our study perinatal mortality was more common in frank breech as compared to complete breech. *Conclusion:* The perinatal morbidity and mortality rate have played a huge role in changing the plan -how to deliver a breech baby. But an important fact is presence of experienced obstetrician.

Vigorous intrapartum monitoring and proper technique of breech delivery have been established as the most important determinant for successful outcome in vaginal breech delivery without compromising fetomaternal well-being and curtailing the caesarean section rate. Parents must be informed about potential risks and benefits to the mother and neonate for both vaginal breech delivery and caesarean delivery. Discussion of risks should not be limited only to the current pregnancy. The risks of a caesarean on subsequent pregnancies, including uterine rupture and placental attachment abnormalities (placenta previa, abruption, accreta), as well as maternal and perinatal sequelae from these complications, should be reviewed as well.

Delivery of breech fetus where labor is supervised by experienced obstetrician and delivery is performed by or under guidance of experienced obstetrician definitely lowers maternal morbidity, perinatal morbidity and perinatal mortality. External cephalic version (ECV) is a safe alternative to vaginal breech delivery or caesarean delivery, reducing the caesarean delivery rate for breech by 50%. ACOG (2016) recommends offering ECV to all women with a breech fetus near term. Adjuncts such as tocolysis, regional anesthesia, and acoustic stimulation when appropriate may improve ECV success rates.

In our study it has been observed that abdominal route of breech delivery is safer though it has its own disadvantages. Caesarean section reduces overall perinatal mortality. But it has also been observed that caesarean section has problems of more hospital stay, and chances of maternal morbidity like in our study wound gap & need of blood transfusion.

There is still a place for vaginal breech delivery in selected cases of breech presentations more so in multiparous women.

Keywords: Breech: Etiology; Risk Factors.

Introduction

Breech presentation is the commonest abnormal fetal presentation met with in practice. It has been

attended by a high perinatal morbidity and mortality. The clinical art of conducting vaginal breech delivery and obtaining mastery over the same requires many years of skillful training and supervision.

Near term, the fetus typically has spontaneously assumed a cephalic presentation. Conversely, if the fetal buttocks or legs enter the pelvis before the head, the presentation is breech. This fetal lie is more common remote from term, as earlier in pregnancy each fetal pole has similar bulk. At term, breech presentation persists in approximately 3 to 5 percent of singleton deliveries. The percentage of breech deliveries decreases with advancing gestational age from 22-25% of births prior to 28 weeks' gestation to 7-15% of births at 32 weeks' gestation to 3-4% of births at term [1]. A rational explanation of why the foetus presents by the breech at term is found in only about 15% of cases.

Factors associated with increased risk of breech presentation may be related to maternal constitution or pregnancy complications. Maternal constitutional factors include nulliparity, grand multiparity, contracted pelvis, high maternal age and uterine anomalies including fibroma. Pregnancy complications include fetal growth retardation, fetal malformations, polyhydramnios, oligohydramnios, placenta praevia, and short umbilical cord. Many of these factors may, regardless of the presentation, be associated with an increased risk of poor fetal outcome. Thus, they may act as confounders when trying to determine the adverse effect of the breech presentation, as such, on fetal outcome. Also, there may be some pregnancy complications, such as intrauterine infections that might result in fetal brain damage that affects fetal movements and thereby increases the risk of breech presentation at term. These complications might be subclinical, which means that it is often difficult to conclude from descriptive studies whether it is maternal constitution, pregnancy complications, or the mode of delivery per se, that is responsible for the increased risk at birth.

External cephalic version in pregnancy is used to reduce the incidence of breech presentation at term. The success rate of external cephalic version varies considerably depending on the skill of the person carrying out the manoeuvre and maternal factors such as parity, liquor volume, engagement and position.

A steadily increasing number of obstetricians are following the advice of Wright, who proposed in 1959 that all breech presentations should be delivered by caesarean section. This widespread practice has

contributed to the very high rate of caesarean sections. The rationale for abdominal delivery is based on the observation that breech deliveries are associated with higher perinatal mortality than cephalic presentations. The proponents of abdominal route argue that the mechanical problems involved with vaginal delivery are determinant factors for high perinatal mortality.

It's been observed that for the fetus weighing more than 2500 grams there is no difference in the perinatal mortality or morbidity between those delivered by abdominal or vaginal route. Nevertheless, there are recent reports that assign a higher relative risk of death to those delivered vaginally, and the general practice is still to deliver most breeches by caesarean section regardless of the estimated fetal weight.

Materials and Methods

The prospective study conducted in WEST INDIA in a tertiary care centres for a period of 5 years (January 2015 to December 2017). A total of 500 antenatal cases with singleton breech presentation with 37 completed weeks of gestation attending antenatal OPD in our hospital were studied.

Inclusion Criteria

All singleton pregnancy, both primigravida and multigravida, with breech presentation >37 weeks of gestation without any known medical complication.

Exclusion Criteria

1. Any presentation other than breech
2. <37 weeks of gestation
3. Multiple gestation
4. IUFD

Observations and Results

Out of 500 cases studied 45% were primigravida with breech presentation and 33% were Para-1, 22% were Para 2 (Table 1).

According to Samina Jadoon et al., 13% cases were primigravida and 87% cases were multigravida [2].

According to Tilhun et al., incidence of breech in primigravida is 42.4% and in multigravida it is 57.6% [3].

According to Karning et al., incidence of breech in primigravida is 46.27% and in multigravida it is 53.73% [4].

According to the study above most of the patients fall in the group of 21-25 years with an incidence of 48%, as the reproductive age group falls in this group (Table 2).

In our study incidence of frank breech presentation (57%) were more than complete breech presentation (38%) (Table 3).

According to Shafaq Zahoor, incidence of frank breech presentation is 65.51%, incidence of complete breech presentation 28.57% and incidence of footling breech presentation is 5.9% [5].

Table 1: Distribution of study group as per parity

Parity	Percent
Primi	45
Gravida 2 (para 1)	33
Gravida 3 (para 2) & above	22
Total	100%

Incidence of breech presentation as per parity

	Primigravida	Multigravida
Samina Jadoon et al	13%	87%
Tilhun et al	42.4%	57.6%
Karning et al	46.27%	53.73%

Table 2: Distribution of study group as per age

Age	Percent
Up to 20 years	9
21 to 25 years	48
26 to 30 years	36
31 to 35 years	5
More than 35 years	2
Total	100%

According to Tilahun et al., incidence of frank breech presentation is 48.30%, incidence of complete breech presentation 43.22% and incidence of footling breech presentation is 6.77% [3].

According to Karning et al., incidence of frank breech presentation is 54.52%, incidence of complete breech presentation 36.07% and incidence of footling breech presentation is 9.11% [4].

According to Fonseca A et al., incidence of frank breech presentation is 10.92%, incidence of complete breech presentation 4.8% and incidence of incomplete breech presentation is 4.1%, rest (80.18%) is unspecified [6].

Table 4 suggests that incidence of LSCS in case of breech presentation was 64% and that of Vaginal delivery was 36% .

According to Collea et al., 49 out of 208 women (23.56%) delivered vaginally and 77% women need cesarean section [7].

Table 3: Distribution of study group as per type of breech

Type of breech	Percent
Frank	57
Complete	38
Footling	5
Total	100%

Incidence of breech as per type of breech

	Frank	Complete	Footling
Shafaq Zahoor	65.51%	28.57%	5.9%
Tilahun et al	48.30%	43.22%	6.77%
Karning et al	54.52%	36.07%	9.11%

Table 4: Distribution of study group as per mode of delivery

Mode of delivery	Percent
Elective LSCS	24
Emergency LSCS	40
Vaginal	36
Total	100%

Incidence of Breech as per Mode of Delivery

	Vaginal Delivery	LSCS
Collea et al	23.56%	77%
Gimovsky et al	44%	56%
Shafaq Zahoor	23.15%	76.84%
Golifier et al	30.64%	69.35%
Karning et al	38%	62%

According to Gimovsky et al., incidence of vaginal delivery is 44% and that of cesarean delivery is 56% [8].

According to Shafaq Zahoor, incidence of vaginal delivery is 23.15% and that of cesarean delivery is 76.84% [5].

According to Golifier et al., incidence of vaginal delivery is 30.64% and that of cesarean delivery is 69.35% [9].

According to Karning et al., incidence of vaginal delivery is 38% and that of cesarean delivery is 62% [10].

The table 5 shows that the incidence of uterine anomaly in this study is 7.81%.

Table 6 suggest that maximum babies with breech presentation were in birth weight group 2 TO 2.5 Kg with incidence of 47% followed by group of 2.5 to 3 Kg with incidence of 37%.

In our study, perinatal mortality was 5% (Table 7).

Table 8 shows that Primi gravida has more incidence of LSCS delivery (40%) & Multigravida has more incidence of vaginal delivery (31%).

Table 5: Incidence of uterine anomaly among LSCS patients

Mode of Delivery		Uterine Anomaly		Total
		Yes	No	
LSCS	%	7.81%	92.18%	100%

Table 6: Distribution of study group as per weight

Weight in grams	Percent
1501 to 2000	5
2001 to 2500	47
2501 to 3000	37
3001 to 3500	9
More than 3500	2
Total	100%

Table 7: Distribution of study group as per perinatal mortality

Perinatal mortality	Percent
Yes	5
No	95
Total	100%

According to Karning et al., 10.16% of primigravidae delivered vaginally whereas as 89.84% underwent cesarean section. The vaginal delivery rate in multigravidae was 3 times greater i.e. 31.5% and cesarean section rate was 68.62% [4].

According to Alarab et al., 15.50% of primigravidae delivered vaginally whereas as 84.50% underwent cesarean section. The vaginal delivery rate in multigravidae was 3 times greater i.e. 32.95% and cesarean section rate was 67.05% [11].

Table 8: Incidence of mode of delivery with parity

Parity	Mode of delivery			Total
	EL LSCS	EM LSCS	Vaginal	
Primi	18%	22%	5%	45%
Gravida 2	3%	10%	20%	33%
Gravida 3 or more	3%	8%	11%	22%

Incidence of breech in relation to mode of delivery and parity

	Gravida	Vaginal Delivery	LSCS
Karning et al	Primi	10.16%	89.84%
	Multi	31.5%	68.62%
Alarab et al	Primi	15.50%	84.50%
	Multi	32.95%	67.05%

In this study the perinatal outcome was good in EL LSCS & EM LSCS with an incidence of 100% & 92.5%.

7.5% cases in EM caesarean section had low APGAR at the end of five minutes & they were shifted to NICU.

16.6% cases in Vaginal delivery had low APGAR (<7) at the end of five minutes & they were shifted to NICU. 8.4% babies were expired.

The incidence of low APGAR is 2 times higher in vaginal delivery in comparison with cesarean delivery. The incidence of NICU admission is 7.5% with cesarean delivery and 16.6% with vaginal delivery (Table 9).

According to Vistad et al, the incidence of NICU admission is 2.9% with cesarean delivery and 10.0% with vaginal delivery [12].

According to Tilahun et al, the incidence of APGAR <7 at 5 minutes is 8.3% with vaginal delivery and 4.6% with cesarean delivery [3].

According to Karning et al, the incidence of APGAR <7 at 5 minutes is 21.42% with vaginal delivery and 9.09% with cesarean delivery [10].

Table 9: Association among study group between perinatal outcome and mode of delivery

Mode of delivery		Perinatal outcome			Total
		Good	Low APGAR	Died	
EL LSCS	%	100	0	0	100%
EM LSCS	%	92.5	7.5	0	100%
VAGINAL	%	75	16.6	8.4	100%

Incidence of Perinatal Morbidity as per Mode of Delivery

	Vaginal Delivery	LSCS
Vistad et al	10.0%	2.9%
Tilahun et al	8.3%	4.6%
Karning et al	21.42%	9.09%

Tables 10 shows that multi gravida patients have good perinatal outcome than primi para.

Tables 11 shows that maternal morbidity is more in LSCS delivery than vaginal delivery.

There was no maternal mortality in our study.

Table 10: Association among study group between parity and perinatal outcome

Parity		Perinatal Outcome			Total
		Good	Low Appgar	Died	
PRIMI	%	82.22	13.33	44.44	100
MULTI	%	92.72	5.4	1.8	100

Table 11: Association among the study group between, maternal complication and mode of delivery

Maternal complication		Mode of Delivery			Total
		EL. LSCS	Em LSCS	Vaginal	
Yes	%	16.66	58.33	25	100
No	%	25	37.5	37.50	100
Total	%	24	40	36	100

Conclusion

Delivery of breech fetus where labor is supervised by experienced obstetrician and delivery is performed by or under guidance of experienced obstetrician definitely lowers maternal morbidity, perinatal morbidity and perinatal mortality. Vigorous intrapartum monitoring and proper technique of breech delivery have been established as the most important determinant for successful outcome in vaginal breech delivery without compromising fetomaternal well-being and curtailing the caesarean section rate. Parents must be informed about potential risks and benefits to the mother and neonate for both vaginal breech delivery and cesarean delivery. Cesarean section

reduces overall perinatal mortality. There is still a place for vaginal breech delivery in selected cases of breech presentations more so in multiparous women.

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