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Original Research Article

Retrospective analysis of breech deliveries in tertiary care center

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ABSTRACT

Background: Breech presentation is the commonest malpresentation accounting for 3-4% of all deliveries at term. The most common cause for breech presentation is preterm delivery. The safest route of delivery for breech had long been a topic of debate and after the results of term breech trial mode of delivery has become abdominal route even in teaching institutions.

Methods: This is a retrospective cross sectional study conducted at department of obstetrics and gynaecology, Government medical college, Kozhikode, for a period of 2 years from 01 January 2016 to 31 December 2017. Mothers with gestational age between 28 weeks to 41 weeks with singleton live fetus with breech presentation who had either vaginal or caesarean delivery were included. The case notes were retrieved from the medical records department.

Results: A total of 823 breech deliveries occurred during the study period. Of the total mothers 429 were primies and 394 were multies. Common causes identified were prematurity, intrauterine growth restriction, uterine and fetal anomalies. Mode of delivery was caesarean in more than 80% of cases.

Conclusions: Incidence of breech presentation was 3.2% during the study period. Increasing incidence of caesarean delivery is seen in breech presentation. Persistent breech presentation at term is most commonly seen in patients with associated oligamnios, intrauterine growth restriction, and uterine anomalies.

Keywords: Breech, Oligamnios, Intrauterine growth restriction

INTRODUCTION

Breech presentation represents a challenging vaginal delivery condition, and it is the commonest malpresentation accounting for 3-5% of singleton fetuses at delivery. Breech presentation results from uterine anomalies, cornuofundal insertion of placenta, placenta previa, oligohydramnios, fetal growth restriction, prematurity, short umbilical cord, fetal anomalies like hydrocephalus, and swellings in front of the neck.¹⁻³

Even though breech presentation is usually associated with placenta previa, placenta previa is seen in only very small percentage of breech presentations. The commonest cause is prematurity (around 22%) as each fetal pole is of similar bulk earlier in pregnancy. Near term the incidence decreases due to spontaneous version to vertex

presentation.⁴ It is a high risk pregnancy with adverse fetal outcomes in labour and delivery if it persists as breech presentation. Adverse outcomes in breech deliveries are mainly due to preterm delivery, preterm premature rupture of membranes, intra uterine growth restriction, oligohydramnios.⁵ Though caesarean section for breech is not recommended universally caesarean can reduce the perinatal mortality and morbidity compared to vaginal delivery.⁶

The current obstetrical decisions regarding vaginal delivery of breech fetus has been greatly influenced by results of term breech trial collaborative group of Hannah in the year 2000. Before this study vaginal breech deliveries were the method of delivery. Hannah's study proposed all breech should be delivered abdominally and caesarean delivery was associated with a lower risk of perinatal mortality compared with planned vaginal

delivery.⁶ Contrary to this, the presentation and mode of delivery study (PREMODA) did not show any differences in corrected neonatal mortality rates and neonatal outcomes according to delivery mode.⁷ Proper patient selection, labour management protocol, fetal monitoring and conduct of labour by an experienced obstetrician and neonatologist, vaginal breech deliveries also can be as safe as abdominal delivery.

Objective of this study was to analyze the common obstetrical characteristics that are associated with breech presentation and fetal outcome at a tertiary care center.

METHODS

This study was conducted at department of obstetrics and gynaecology, Institute of maternal and child health (IMCH), Government medical college, Kozhikode for a period of 2 years from 01 January 2016 to 31 December 2017. The incidence of breech deliveries, maternal and perinatal outcome were analyzed. The study was a retrospective cross sectional study. Patients with gestational age between 28 weeks and 41 weeks, with breech presentation admitted at the department of obstetrics and gynaecology, were included in this study. Informations were collected from the hospital medical records library, IMCH. Details regarding age, gestational age, parity, and mode of delivery, sex, weight of baby, maternal risk factors, fetal complications, Apgar and neonatal intensive care unit (NICU) admission were collected.

Data was analyzed using statistical package for social sciences (SPSS) 16.0 statistical software-405.

RESULTS

In this retrospective study 823 cases were studied for a period of 2 years from 01 January 2016 to 31 December 2017. The incidence of breech was 3.2%. From Figure 1 we see that 84.6% of cases belong to the age group between 20-35 years. 9.8% were in the age group less than 20 years and 5.6% belong to age group above 35 years.

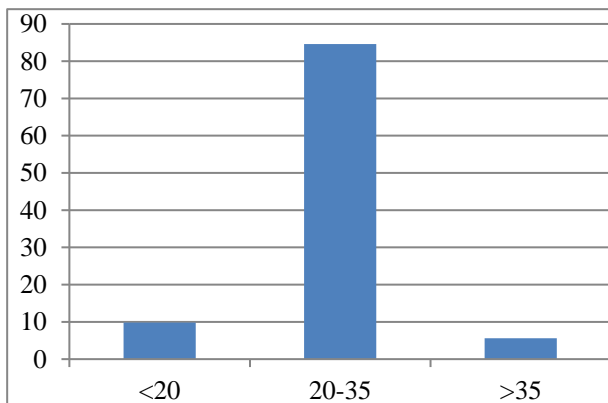


Figure 1: Distribution of breech presentation according to maternal age.

Of the total mothers 52.1% were primies, 46.3% were multies, and 1.6% were grandmulties (Figure 2).

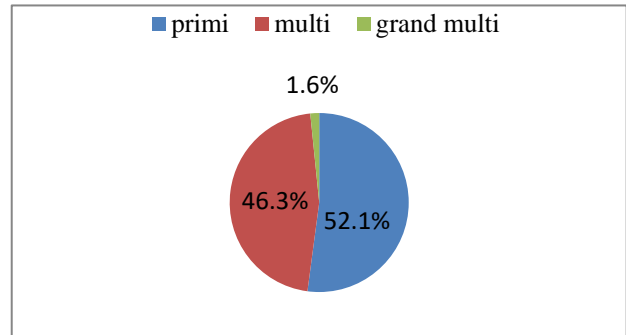


Figure 2: Distribution of breech presentation according to parity.

According to gestational age 64.2% cases belong to gestational age between 37-40 weeks, 36.4% between 28 to 37 weeks and 9.5 % above 40 weeks (Figure 3).

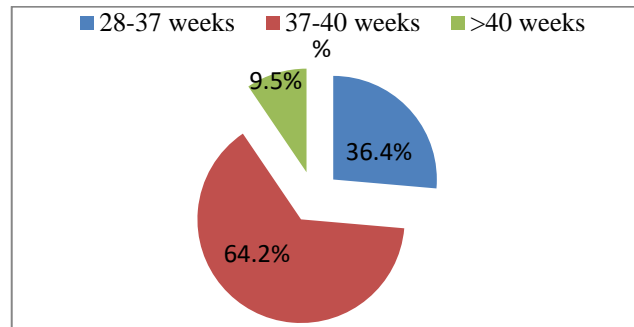


Figure 3: Distribution of breech presentation according to gestational age.

Common causes identified are prematurity in about 26.7%, intra uterine growth restriction in 11.6%, oligamniosin 8%, uterine anomalies in 5.83% and 7.9% were associated with fetal anomalies (Figure 4 and 5).

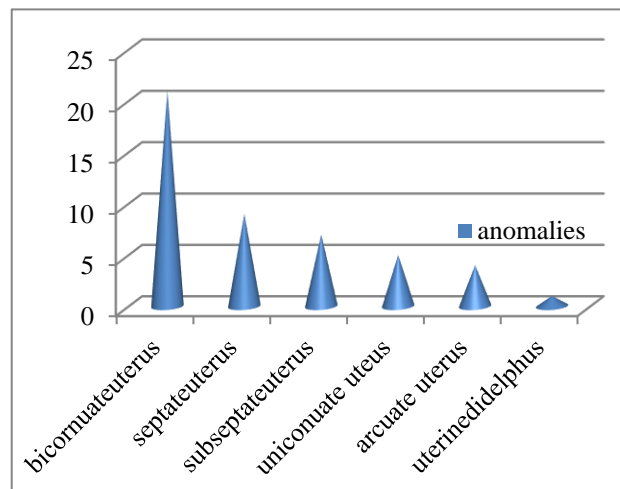


Figure 4: Uterine anomalies in breech presentation.

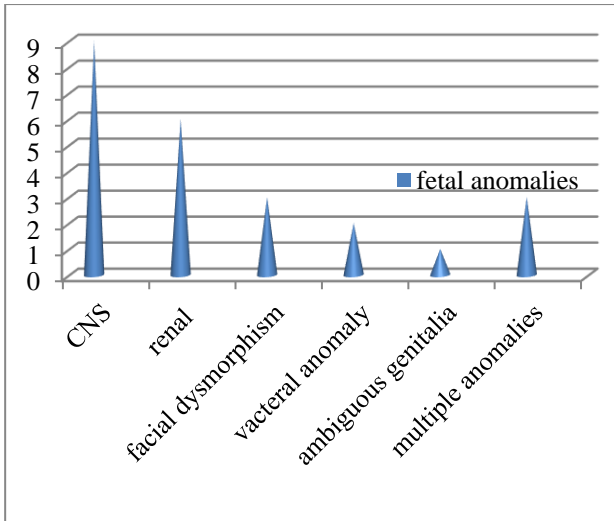


Figure 5: Fetal anomalies in breech presentation.

81.6% cases delivered by caesarean section, assisted breech deliveries were of 17.7% and 0.6% cases of breech extraction. Of the total caesarean 26.7% cases done as elective caesarean and 73.2% as emergency. 33.3% cases were done for primie breech. Other indications for caesarean section were complicated breech, previous caesarean, breech with premature rupture of membranes etc. Of the total 146 assisted breech deliveries 58.9% was in multies and 41% in primies. Gestational age wise 41% of assisted breech delivery belonged gestational age

between 37 to 41 weeks, 34% between gestational age of 28 weeks to 34 weeks, 23% between 34 to 37 weeks (Table 1).

The antepartum complications identified were preterm premature rupture of membranes (4.7%), premature rupture of membranes (2.67%), preterm delivery (26.4%), placenta previa (2.9%), oligamnios (8.6%) and intrauterine growth retardation (11.6%). Cord prolapse occurred in 5 (0.6%) cases. There were 4 cases of caesarean hysterectomy done for associated adherent placenta. Postdated pregnancy in 9.5%. Medical complications associated with the cases studied were gestational diabetes mellitus (11.5%), gestational hypertension (9.9%) and anaemia (0.72%). There was slight high incidence of postpartum haemorrhage following caesarean. Out of 11 cases of postpartum hemorrhage (PPH) (1.3%) 9 cases were following lower segment cesarian section (LSCS) and only 2 were after vaginal breech delivery. All cases were of atonic PPH except one case following assisted breech delivery with 3rd degree perineal tear. Complications apart from PPH in LSCS were extension of uterine incision in 3 cases.

There was higher incidence of female fetuses. 57.4% among the total babies were females and 42.6% male babies. 55.8% of babies belong to the group of weight with 2.5 to 3.5 kg, 8.5% babies with weight more than 3.5 kg, 28.9% with weight between 1.5 and 2.5 kg, 6.8% with less than 1.5 kg (Figure 6).

Table 1: Distribution of mode of delivery in breech presentation.

Types of delivery	Caesarean section, 672 (81.7%)		Vaginal delivery, 151 (18.3%)	
	Elective N (%)	Emergency N (%)	Assisted breech delivery N (%)	Breech extraction N (%)
	180	26.7	492	73.2
			146	17.7
				5
				0.6

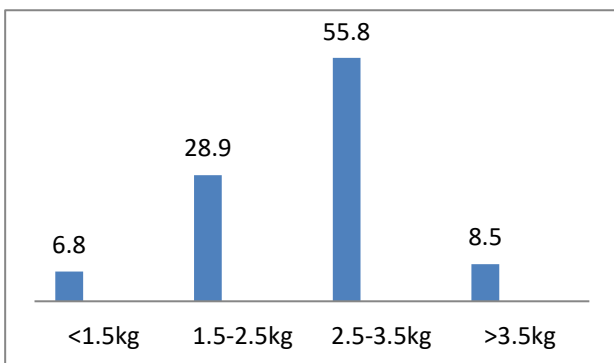


Figure 6: Distribution of fetal weight in breech presentation.

Incidence of neonatal care unit admission was about 21.7% of which 17% of the babies stayed for more than 7 days (Table 2).

Of the total babies 9.1% babies had Apgar less than 7 and 90.8% babies had more than 7. Of the total 75 babies with less than 7 Apgar score 86.6% were with weight less than

2.5 kg. Among this 50.6% with weight less than 1.5 kg that belonging to very low birth weight (Table 3).

Table 2: Distribution of neonatal unit stay of babies.

No. of days	No. of babies	Percentage
Nil	644	78.2
<7	39	4.7
>7	140	17

Table 3: Distribution of Apgar scores in breech babies.

Apgar	Frequency	Percentage
<7	75	9.1
>7	748	90.8
Total	823	100

There were total 8 cases of neonatal deaths. Of that 3 deaths were due to congenital anomalies, 1 due to cord prolapse, 1 due to abruption, 3 due to severe preeclampsia with very low birth weight.

DISCUSSION

This study included all the cases of antenatal women admitted beyond 28 weeks of gestation with singleton live fetus with breech presentation. As a routine mode of delivery was caesarean section unless the patient in advanced labour on admission to labour room, or a multigravida with average size fetus, uncomplicated breech, and patient requesting for vaginal delivery. Incidence of breech was 3.2% which remained similar to the incidence in most of the studies and it is in agreement with the incidence of breech presentation at term.^{8,9} We have observed an increased association of breech presentation with intrauterine growth restriction and oligohydramnios in this study.^{10,11} Causes identified for breech presentation in this study were primiparity, prematurity, low birth weight, intrauterine growth restriction, oligohydramnios, female sex of the baby, previous caesarean section, congenital anomalies of uterus, leiomyoma, and fetal congenital anomalies.¹¹⁻¹³ Kalogiannidis et al and Vendettelli et al described that in previous caesarean delivery there is twofold increased incidence of breech presentation.^{14,15} Decreased fetal movements due to intra uterine growth restriction and reduced liquor lead to persistence of breech presentation.¹⁶

52.1% cases were primies. Hehir et al also got similar observation.¹⁷ The reasons for increased incidence of breech in primies have been thought to be due to tight abdominal wall due to good rectus muscle tone in nulliparous women. Majority of the patients belonged to the age group between 20-35 years.^{18,19} Advanced maternal age there is increasing incidence of breech presentation.

Most of the cases belonged to gestational age between 37 to 40 weeks. For this increased incidence at this gestational age may be because of early admission for elective termination after 39 weeks. Persistent breech presentation at term is an indication for caesarean, and there is no routine external cephalic version done at our center. Majority of babies are of average birth weight. One third of babies belonged to the weight below 2.5 kg.²⁰ This may be due to the association of intra uterine growth restriction (11.6%), oligamnios (8.8%) and anomalies of uterus.²¹ There is increased incidence of female fetus in this study. Similar observation was also seen in studies by Talas et al and Luterkort et al.^{22,23} Zeitlin et al also had similar observation. Even though exact aetiology is not known for female predominance, several theories are put forward like shorter umbilical cord, and differences in utero motor activity.²⁴ Antenatal complications encountered were preterm labour, intrauterine growth restriction and oligohydramnios.

This study shows a very high caesarean rate.^{25,26} Similar to many other studies caesarean rate is almost identical in both primies and multies. Majority of the assisted breech deliveries were in multies and most of them were preterm deliveries. There was slight increased incidence of

postpartum haemorrhage following caesarean section. Incidence of gestational diabetes (11.5%) and gestational hypertension (9.9%) in this study were almost similar to the institutional incidence during the period which was 13.5% and 10.4% respectively.²⁷ In breech presentation as per se there is no increased incidence of medical complications.

Babies got admitted to NICU were predominantly those who belonged to extreme premature babies and those with severe IUGR. There was not much significant difference in the neonatal morbidity and mortality among the vaginal and caesarean delivery groups. Obstetric risk factors rather than intrapartum events are said to be having a greater role in adverse neonatal outcome.^{28,29}

Congenital anomalies of fetus were often associated with breech presentation. Common association were with central nervous system and renal anomalies. Similar observation was seen in this study also.³⁰

CONCLUSION

Incidence of vaginal delivery for breech is decreasing over the years in our institution mainly due to the fear of medical litigation for poor perinatal outcome. LSCS for breech is done routinely because of the lack of experienced obstetricians also. External cephalic version should be attempted under ultrasound guidance in selected cases. Vaginal breech delivery should be a planned one after proper selection of cases, counselling of the patient, and getting written informed consent.

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Ethical approval: The study was approved by the Institutional Ethics Committee

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