Original Research Article

Outcome of breech deliveries in nulliparous women

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Abstract

Background: Compared to cephalic presentation with respect to fetal morbidity and mortality, breech delivery management was a high risk.
Aim: To evaluate the outcome of breech deliveries in nulliparous women.
Materials and methods: This was a retrospective study conducted from October 2012 till September 2015 .The study was conducted at Government hospital Nizabmabad and CKM hospital, Warangal. The selection criteria were gestational age ≥ 32 weeks which was validated by ultrasound examination performed before 20 weeks gestation when calculated from last menstrual period, a singleton with breech presentation and normal fetal heart beats in nulliparous women. Adequate pelvis, frank or complete breech, estimated weight of foetus lesser than 3500 grams, no other obstetric complication were the inclusion criteria.
Results: During these 3 years survey, 12000 deliveries were done. Out of which, 3000 were nulliparous, and there were 400 cases of breech presentation, and there was an incidence of 3.33%. A total of 250 women met the inclusion criteria and had undergone delivery by VBD or by Caesarean section. There were 120 caesarean deliveries, of which 56 (46.66%) were elective and 64 (53.33%) were emergencies. The main indication for emergency CS was acute foetal distress accounting to 42 (65.63%) cases. The main indication for elective CS was foetal birth weight ≥3500 grams accounting to 25 (44.64%) cases. Out of 130, 15 (11.54%) neonates had poor APGAR score (<7) at the 5th minute of birth. In elective caesarean section, none had poor APGAR score at 5th minute. In emergency, caesarean section, 6 (9.38%) had a poor APGAR score at the 5th minute. Out of the 6 cases, the indication for the emergency caesarean section was acute foetal distress, 2 in 35 years old patients carrying foetus of 3300 grams and 3200 grams, others had cord prolapsed. In APGAR score between

the group of elective and emergency caesarean section, there was a statistically significant difference in the mean 5th minute.

Conclusion: It can be concluded from this study that in cases of inadequate pelvis, foetal weight ≥3500 grams or ≤1800 grams, footling breech presentation, post term pregnancies, vaginal breech delivery is unsafe.

Key words

Breech deliveries, Nulliparous women, Outcome.

Introduction

3-4% of term pregnancies are constituted by breech presentation. Compared to cephalic presentation with respect to fetal morbidity and mortality, breech delivery management was a high risk. Adverse fetal outcomes during pregnancy, labour, delivery, and the post-partum are associated with breech delivery [1]. Adverse outcomes are more frequent among nulliparous women than in multiparous women. Among nulliparous women, it is for this reason that some obstetricians opt for routine caesarean section in all cases of breech presentation. Since the cost of caesarean section in developing countries is not affordable by all pregnant women, such an approach could not become universally acceptable [2, 3]. Non negligible maternal morbidity is associated with caesarean section. Because of these reasons, trial of vaginal delivery could be offered in nulliparous women with fetus in breech presentation. In our study, criteria to determine mode of delivery are as follows: provided no other obstetric complication were present, if the pelvis was adequate, the breech being frank or complete and the estimated fetal weight 3500g, then a trial of vaginal breech delivery (VBD) was offered. All cases of vaginal breech delivery were monitored closely; monitored electronically fetal heart rates, blood pressure and temperature were taken every 2 hour. At 4cm dilatation, a partogram was opened [4, 5]. The most commonly used delivery is caesarean delivery and has led to a lack of experience of vaginal breech delivery and which lead to significant increase in maternal morbidity in future pregnancies. Till Hannah et al proposed to reduce mortality and morbidity, all breech should be delivered abdominally, vaginal breech deliveries were previously the method of delivery.

Materials and methods

This was a retrospective study conducted from October 2012 till September 2015. The study was conducted at Government hospital Nizabmabad and CKM hospital, Warangal. The selection criteria were gestational age ≥ 32 weeks which was validated by ultrasound examination performed before 20 weeks gestation when calculated from last menstrual period, a singleton with breech presentation and normal fetal heart beats in nulliparous women. Adequate pelvis, frank or complete breech, estimated weight of foetus lesser than 3500 grams, no other obstetric complication were the inclusion criteria. The foetal heart rates, blood pressure as in partogram in active phase were monitored closely in all women. In cases of dystocia without underlying factors like uterine fibroids were augmented with oxytocin. Vaginal examination was performed every 2 hours once. In cases of failed attempts at vaginal breech delivery, such as poor progress, acute foetal distress and cord prolapsed, emergency caesarean was performed. APGAR score was used to evaluate the neonatal well being. Mother's age, gestational age, delivery mode, birth weight, APGAR scores at 5th minute, maternal outcome and use of episiotomy were the data which were collected from each case.

Results

During these 3 years survey, 12000 deliveries were done. Out of which, 3000 were nulliparous, and there were 400 cases of breech presentation, and there was an incidence of 3.33%. A total of 250 women met the inclusion criteria and had

undergone delivery by VBD or by Caesarean section. Mean age of this study population was 24.5 ± 5.8 years with a range of 16-40 years. The gestational age ranged from 30 to 45 weeks with a mean of 39.1 ± 2.6 weeks. The breech was frank in 120 (48%), complete in 100 (40%) and footling in 30 (12%).Out of the 250 cases, 200 cases underwent VBD trial delivery, and 130 (65%) of the cases had undergone successful VBD. VBD occurred in 120 (60%) women without episiotomy and in 80 (40%) women had large mediolateral episiotomy. Foetal birth weights ranged from 1300 to 4000 grams with a mean of 2800 ±720 grams. In the group delivered by caesarean section, foetal weight was higher (**Table – 1**).

There were 120 caesarean deliveries, of which 56 (46.66%) were elective and 64 (53.33%) were emergencies. The main indication for emergency CS was acute foetal distress accounting to 42 (65.63%) cases. The main indication for elective CS was foetal birth weight ≥3500 grams accounting to 25 (44.64%) cases (**Table – 2**).

Out of 130, 15 (11.54%) neonates had poor APGAR score (<7) at the 5th minute of birth. In elective caesarean section, none had poor APGAR score at 5th minute. In emergency, caesarean section, 6 (9.38%) had a poor APGAR score at the 5th minute. Out of the 6 cases, the indication for the emergency caesarean section was acute foetal distress, 2 in 35 years old patients carrying foetus of 3300 grams and 3200 grams, others had cord prolapsed. In APGAR score between the group of elective and emergency caesarean section, there was a statistically significant difference in the mean 5th minute. There were brachial plexus injuries in 4 cases and fracture of humerus in 4 cases, all other 242 cases when leaving the hospital were healthy (**Table – 3**).

Table – 1: Distribution of birth weight groups by route of delivery.

Birth weight (gms)	VBD, No. (%)	CS, No. (%)	Total, No. (%)
1500-2000	15(11.54%)	10(8.33%)	25(10%)
2001-2500	60(46.15%)	15(12.5%)	75(30%)
2501-3000	50(38.46%)	27(22.5%)	77(30.8%)
3001-3500	4(3.08%)	38(31.66%)	42(16.8%)
3501-4000	1(0.77%)	30(25%)	31(12.4%)
Total	130	120	250

Table – 2: Indications and types of caesarean section in breech presentation.

Indications	Elective CS, No. (%)	Emergency CS, No. (%)
Foetal weight ≥3500 grms	25 (44.64%)	--
Stationary Labour	--	15 (23.44%)
Maternal age >32 years	16 (28.57%)	--
Acute Foetal distress	--	42 (65.63%)
Cord Prolapse	--	7 (10.94%)
Footling Breech presentation	15(26.79%)	--
Total	56 (46.66%)	64 (53.33%)

Table – 3: Distribution of APGAR score at the 5th minute by route of delivery.

APGAR score at 5th min	VBD, No. (%)	CS, No. (%)		Total No. (%)
		Elective	Emergency	
<7	15 (11.54%)	0	6 (9.38%)	21 (8.4%)
≥7	115 (88.46%)	56 (100%)	58 (90.63%)	229 (91.6%)
Total	130	56	64	250

Discussion

From literature survey, many studies have been reported which showed breech deliveries in nulliparous women. Hassan S.O. Abduljabbar, et al. [6] conducted a retrospective study performed at King Abdulaziz University Hospital from January 2002 to August 2014, for all cases of breech. Data collated from the chart Age, gravidity, gestational age, and method of delivery, vaginal versus cesarean section. Duration of labor, baby weight, gender, Apgar score, and admission to NICU, fetal and maternal complication recorded. The results were a total number of delivery (55853) in 13 years, admitted to the obstetrical service at KAUH from January 2002 to August 2014, 604 patients diagnosed as breech give a rate of 1.108%. Age of patients ranges from 17 to 42 years. The gravidity range from 1 to 15). Gestational age in weeks ranges from 28 to 42. 132 patients were primigravida, and 380 were multigravida (25.9%). 124 delivered vaginally (24.2%). When we compare the mean of maternal age, gravidity and gestational age and fetal weight between the group delivery by C/S and those delivered vaginally gestational age, and fetal weight was statistically significant with p-value < 0.001. When comparing the booking status, the gender, and the neonatal outcome whether the baby stillbirth, admitted to nursery or NUIC, it was found that vaginal delivery with poor outcome (SB and admission to NICU) statically significant with p-value <0.001. The fetal complication contributes to (16.8%). The maternal complication occurred in (14.8%). It can be concluded from this study that the rate of breech presentation in our institution is lower than what is reported word wide. Not all obstetrician chose cesarean as a mode of delivery and about a quarter of breech presentation delivered vaginally a proper protocol for vaginal delivery should be available in every hospital limitation this study is a retrospective study and further randomized controlled studies are needed. Nkwabong Elie, et al. [7], conducted a study to evaluate nulliparous breech delivery so as to determine prognostic factors for an unsafe vaginal delivery (VD). This retrospective and descriptive study was carried out in the University Teaching Hospital Yaoundé– Cameroon, from January 1, 2005 to December 31, 2009. Files of 126 women with singletons in breech presentation and normal fetal heart beats at a gestational age C32 weeks were reviewed with a trial of VD ordered in 104. The parameters recorded were mother's age, gestational age, mode of delivery, birth weight, 5th minute Apgar scores, neonatal outcome, and use of episiotomy. The results showed that 84 (66.7 %) had a successful VD. Failure of VD or poor Apgar score after VD were observed if fetal weight C3,500 or 1,800 g, footling breech, maternal age 28 or 19 years, post term, and rigid cervix. This study concluded that elective cesarean section should be systematic if the unsafe circumstances above mentioned are present. Augustine Onyeabochukwu Duke, et al. [8], conducted a retrospective study of singleton breech term delivery at the federal medical centre, Owerri between January 1, 2007 and December 31, 2011. Singleton breech term deliveries were identified from the labor ward register and the hospital numbers extracted to retrieve the case notes from the medical records department of the hospital. Some data were collected and analysed. The results were that there were a total of 9624 deliveries during the study period, out of which 328 (3.4%) were singleton breech presentation at term. Term singleton breech was commoner in multiparous 200 (61%) than in primiparous 128 (39%) women. Extended (Frank) breech was the commonest type of breech presentation (60.4%) followed by flexed (complete) breech (36.0%) and footling breech (3.6%) was the least common. Assisted vaginal breech delivery was conducted in 66.2% of cases while 27.4% were delivered by emergency caesarean section and 6.4% of cases were delivered through elective caesarean section. There were one maternal and 24 perinatal death. Twenty one (87.5%) of perinatal deaths those occurred in unbooked mothers. Although assisted vaginal breech delivery for singleton breech term delivery was commonly performed in our centre, elective

caesarean delivery gives the better neonatal outcome for fetuses presenting breech. Dr Pradeep M R, et al. [9], conducted a study on route of delivery for term breech presentation either by abdominal route or vaginally is a dilemma in obstetric practice. To asses mode of delivery influencing on neonatal outcome, we conducted a prospective study done in department of obstetrics and gynecology at mandya institute of medical sciences f or one and half years. Out of 273 term breech presentations 134 met our criteria. 72.3% had successful assisted breech delivery. Vaginal breech delivery was associated with significantly low Apgar score (<7) at birth, compared to caesarean births. There is no significant difference in neonatal mortality or maternal mortality between two groups. Assisted breech delivery can be a route of choice in selected patients in a low resource set up. Dr Raxita D. Patel, et al. [10]; conducted a study to evaluate breech delivery so as to determine prognostic factors for an unsafe vaginal delivery (VD) in nulliparous women. This retrospective study was carried out in the S.C.L. General Hospital from April 2010 to March 2013. 230 Nulliparous women with singleton breech presentation and normal fetal heart rate at a gestational age ≥ 32 weeks were reviewed with a trial of VD ordered in 184. The parameters recorded were mother's age, mode of delivery, birth weight, 5th minute Apgar scores, neonatal outcome and use of episiotomy. The results showed that 128 (69.56%) had a successful VD. Failure of VD or poor Apgar score after VD observed if fetal weight ≥ 3,500gms or ≤ 1,800gms, footling breech, maternal age > 28, post term and rigid cervix. Elective cesarean section should be systemic if the unsafe circumstances above mentioned are present.

Conclusion

It can be concluded from this study that in cases of inadequate pelvis, foetal weight ≥3500 grams or ≤1800 grams, footling breech presentation, post term pregnancies, vaginal breech delivery is unsafe. Elective caesarean should be offered to women with above unfavourable conditions. Arrangement should be made for rapid emergency caesarean section in cases of failure of progress, cord prolapse and acute foetal distress are unpredictable, whenever trial of VBD is offered.

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