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Outcome of breech delivery: caesarean section versus vaginal delivery at Patan Hospital, Patan Academy of Health Sciences

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ABSTRACT

Introductions: Obstetricians have long debated the role of caesarean section as a potentially safer mode of delivery for the fetus with breech presentation. However, the experience of the health care provider remains a critical element in the decision to pursue a vaginal breech delivery, and it may still be a viable option. The aim of this study is to determine the incidence of breech delivery at Patan Hospital and compare maternal and neonatal outcomes subjected to either vaginal or caesarean section.

Methods: This was a five-year retrospective study of breech deliveries covering the year 2010 to 2014. Patient's charts were retrieved from the medical record section and reviewed.

Results: There were 896 breech deliveries out of a total 44,842 deliveries giving an incidence of 1.99%. One hundred thirteen (12.61%) of breech deliveries were through vaginal route while 431 (48.10%) and 352 (39.28%) were through emergency and elective caesarean sections respectively. There were 154 (17.18%) preterm breech deliveries including 27 (17.5%) preterm intrauterine death. Among term pregnancy, there were 3 neonatal deaths not associated with mode of delivery. None of the term infant had neurological morbidity comprising neonatal seizures, brachial plexus injury, chephalohematoma. Maternal blood loss was significantly higher in caesarean section group.

Conclusions: In well-selected cases, the neonatal outcome following assisted vaginal breech delivery and caesarean section may not be different.

Keywords: breech delivery; maternal and perinatal outcome

INTRODUCTIONS

The 'term breech trial' for the term fetus with breech presentation and neonatal outcome concluded that planned caesarean section is better than planned vaginal birth.[1] However, vaginal breech delivery is a viable option in experienced hands with rigorous hospital protocol and thorough patient counsel.[2] Proper case selection, vigilant intrapartum monitoring and proper technique can lead to successful vaginal breech delivery.[3]

The purpose of this study was to evaluate the feasibility of vaginal delivery in singleton breech presentation. This study evaluates neonatal and maternal morbidity following vaginal and caesarean delivery for breech presentation.

METHODS

This retrospective study was conducted at department of Obstetrics and Gynecology, Patan Hospital, Patan Academy of Health Sciences, Lalitpur Nepal. Medical records of singleton term breech from January 2010 to December 2014 were reviewed. The diagnosis was made at the antenatal clinic or on presentation in labor. The study variables included obstetric history, mode of delivery (vaginal, elective or emergency caesarean), gestational age, mother's hospital stay, fetal birth weight, Apgar scores, stay in neonatal intensive care and neonatal outcome of child.

RESULTS

There were 896 singleton breech presentations out of 44,842 (1.99%) pregnancies. Mean age of mothers with breech presentation was 28.62 years (SD 5.7 years). The highest frequency of breech presentation was in women aged 21-35 years. The caesarean section for breech was 873 (87.4%), elective 352 (39.28%) and emergency 431 (48.10%). Vaginal deliveries were 113 (12.61%). (Table 1, 2).

Table 1a. Frequency of caesarean and vaginal delivery in singleton breech presentation (n=896)

		Caesarean			Vaginal
		n(783) (%)	EM (431) (%)	EL (352) (%)	n(113) (%)
Parity	Primipara	424 (47.3)	174 (19.4)	250 (27.9)	43 (4.8)
	Multi para	359 (40)	257 (28.7)	102 (11.4)	70 (7.8)
ANC	Booked	412 (46)	172 (19.2)	240 (26.8)	44 (4.9)
	Un-Booked	368 (41.1)	257 (28.7)	111 (12.4)	62 (6.9)
	No ANC	2 (0.2)	2 (0.2)	-	8 (0.9)
Gestation	Weeks^{days}	-	30 to 36^{+4}	35 to 36^{+5}	24^{+3} to 36^{+5}
Pregnancy	Preterm	86 (9.6)	80 (8.9)	6 (0.7)	68 (7.6)
	Preterm IUFD	-	-	-	27 (17.5)
	Term	697 (77.8)	351 (39.2)	346 (38.6)	45 (5)

Table 1b. Indications for caesarean delivery

	EM CS	EL CS	N (%)
Fetopelvic disproportion	227	247	474(68)
Oligohydramnios	40	9	49(7)
Intrauterine growth restriction	14	9	23(15.2)
Previous cesarean section	11	42	53(7.6)
Footling breech or incomplete breech	6	-	6(0.8)
Non progression of labor	8	-	8(1.1)
Fetal distress	5	-	5(0.7)
Decreased fetal movement	5	-	5(0.7)
Placenta previa	5	-	5(0.7)
Undiagnosed breech	4	-	4(0.5)
Maternal disease-	3	24	27(3.6)
Bad obstetric history	-	2	2(0.3)
Bicornuate uterus	-	2	2(0.3)
In-Vitro Fertilization conception	-	3	3(0.4)
Other reasons	23	8	31(4.2)

Note: Em=emergency, EL= elective, CS=caesarean section

Table 2. Mode of delivery and perinatal outcome in term in singleton breech pregnancy

	CS	VD
5 minute Apgar < 7	9	2
Transfer to NICU	1	0
Transfer to Nursery	24	3
Small for gestational age	110	4
Fetal birth injury	0	0
Fetal anomaly	1	1
IUFD	0	0

Note: CS- Caesarean section, VD- vaginal delivery

Table 3. Pattern of maternal morbidity

Morbidity	**Caesarean section**	**Vaginal delivery**
PPH	4	1
Genital tract trauma	0	0
Prolonged hospital stay	3	0
Blood transfusion	5	0
Relaparatomy	1	0
Episiotomy	0	28

Out of 742 term breech deliveries 114 (15.4%) were small for gestational age (SGA) and did not require ICU (Table 2). Three (2.6 %) SGA infants delivered by caesarean section developed sepsis. Out of 896 neonates, 31 (3.5%) infants were born with Apgar score < 7 at 5 minutes, which included 20 (2.2%) preterm and 11 (1.2%) term babies. Among 11 term, 1 (9%) infant was delivered by elective caesarean section, 8 (72%) by emergency caesarean section and 2 (18%) vaginally. Out of 8 infants delivered by emergency caesarean

section, 1 (0.3%) had an Apgar score < 4 after five minutes (serious morbidity). Caesarean section was done for fetal distress (fetal heart sound dropped to 50 beats per minute). The baby was intubated, resuscitated, transferred to NICU but expired in few hours due to severe asphyxia. One (0.3%) with no antenatal checkup, delivered by emergency caesarean section for fetal distress, expired within few minutes due to fetal anomaly. Twenty seven (3%) infants were transferred to the nursery. One (0.1%) infant with anomaly delivered by assisted breech delivery expired after four days. Rest of the infant were discharged after few days of observation. None of the term infant had neurological morbidity comprising neonatal seizures, brachial plexus injury, cephalic hematoma. Three (0.3%) perinatal deaths were recorded not as a result of mode of delivery. There was no significant association between mode of delivery and Apgar scores, (Table 3).

Regarding maternal outcome, 5 (0.6%) women in the caesarean section group had blood loss > 1000 ml. One (0.1%) patient underwent re-laparotomy for hemoperitoneum. No serious maternal complication was noted.

DISCUSSIONS

The incidence of breech delivery at term of 1.99% found in this study is comparable to 2.1 to 3.1% reported in Southwestern Nigeria[4] but higher than 1.4% reported in Calabar, South South Nigeria.[5] In sub Saharan Africa, the incidence ranges from 2.4% in Zambia to 2.7% in Gabon.[6] One of the major benefits of assisted vaginal breech delivery is its effect on reducing the caesarean section rate and the associated, morbidity and mortality. While some authors recommend that all breech presentations should be delivered by caesarean section,[7] others stress the importance of maintaining obstetricians' knowledge of how to conduct vaginal delivery.

In this study, the rate of caesarean section for breech was 87.4%. There was increase in caesarean rate after the results of multicentre term breech trial, 2000 which recommends planned caesarean section as the route of choice for better neonatal outcome at term[1]. Serious maternal morbidity showed no difference between the two groups. Subsequent follow-up data on a subset of survivors failed to show long-term differences in death and neuro-developmental delay between the two groups at 2 years of age.[8] However, because of the small number of patients involved, those long-term outcomes are not suitable endpoints.[8] In our study, there were 3 perinatal deaths not as a result of mode of delivery. There was no significant association between mode of delivery and Apgar scores.

While Reilberg et al. report a policy of routine planned caesarean section, which has been followed by improved neonatal outcomes,[9] Schutte et al. assert that planned caesarean section for breech presentation does not guarantee improved outcome for the child instead may increase risks to the mother.[10] The Dutch Maternal Mortality Committee registered and evaluated four maternal deaths following planned caesarean section for breech presentation from 2000 to 2002 – 7% of the total direct maternal mortality in that period. RCOG (2006) guidelines recommend vaginal breech delivery should be undertaken in a unit with theatre facilities and experienced clinicians.[11]

In our study, vaginal delivery of term breech infants was associated with low perinatal morbidity. More infants in the emergency caesarean group had an Apgar score < 7 and were transferred to the nursery for observation. However, only one infant was admitted for more than four days. According to follow-up data, none of the infants (including the infant with serious morbidity) have long-term sequelae due to mode of delivery. In contrary to the findings of the TBT and several retrospective studies, we found no excess risk for neonatal mortality or serious morbidity in the vaginal delivery group versus the caesarean section group. As the rate of caesarean section was much higher at our

institution, comparisons were difficult to make.

Most authors concluded that cesarean section is associated with increased short term maternal morbidity. However, in our study, we found no significant differences between the groups except for higher blood loss in the surgery group, which was of no clinical significance. The long-term effects of caesarean section on the risk of pregnancy and delivery complications are well documented, which may involve a risk for both mother and child.[12-13]

Various data suggest that vaginal breech delivery still remains a viable option in selected patients.[14,15] Selective vaginal breech deliveries may be safely undertaken in units having a tradition of vaginal breech deliveries. The overall neonatal morbidity was small (1.2%).[16,17] Data also indicates that for every infant saved by a caesarean section, one woman will experience an uterine rupture in subsequent pregnancy.[18] These observations are true in developing countries like Nepal where poverty, lack of education, inadequate health resources and no antenatal follow ups are main problem. In our country, majority of the population belongs to rural areas where women are attended mostly by untrained birth attendants during labor. Keeping in view the above facts, caesarean section should not be the treatment of choice in breech cases.

CONCLUSIONS

Neonatal outcome did not depend on mode of delivery. Pre-delivery assessment, vigilant labor monitoring and by improving skills, vaginal delivery of singleton fetuses in breech presentation remains a safe option that can be offered to a woman in a tertiary care centre.

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