

Singleton Vaginal Breech Delivery at Term: Maternal and Perinatal Outcome

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Abstract

Objectives: To determine fetomaternal outcome in patients undergoing planned vaginal breech delivery at term.

Methods: It was a descriptive cross sectional study conducted at Lady Aitchison hospital, Lahore for one and a half year from July 2012 to December 2013. All patients presenting with term breech presentation were included. Fetomaternal outcome in terms of successful vaginal delivery, maternal complications of operative delivery, PPH, wound infection and fetal complications of apgar score of less than five minutes, nursery admission, trauma during delivery (bone fracture, intra cranial hemorrhage) and perinatal mortality was studied.

Results: 375 patients delivered as breech presentation during the study period. Out of 375 patients, 155 patients were selected for vaginal birth. Out of these, 65% had successful vaginal delivery, rest had emergency caesarean section due to fetal distress, cord prolapse,

dysfunctional labour. 6.4% patients had wound infection and 3.2% had PPH. Booking status was significantly important in patients who had successful vaginal delivery as 80% were booked ($p = 0.001$). There was no maternal mortality in these patients. Perinatal outcome was good in 87% of patients. 20 fetuses had Apgar score less than 7/min and required nursery admission. Two babies expired due to birth asphyxia and rest were discharged home in satisfactory condition.

Conclusion: Although delivery of breech remains a dilemma, the plan of delivery should be individualized. Proper selection of cases with proper antenatal and intrapartum care can result in successful breech vaginal delivery without compromising fetomaternal wellbeing and curtailing the percentage of caesarean being done for this malpresentation.

Introduction

In October 2000, the term breech trial was published in "The Lancet"¹, concluding that policy of planned caesarean section leads to better neonatal outcome as compared to vaginal births in breech. Publication of the trial revolutionized the management of term breech deliveries. The number of caesarean section increased worldwide reaching to 80% at some places.²⁻⁴ Guidelines from U.K⁵ and USA⁶ endorsed the policy of caesarean section for all term breech patients. The global reaction to trial has been exceptional because obstetricians face a dilemma when it comes to breech delivery especially in primigravida. The unintended result of this policy has been an increase in maternal mortality and morbidity especially in resource poor countries.^{7,8} In addition, the obstetricians are losing skills of vaginal breech delivery safely. Many authors⁹⁻¹¹ have criticized term breech trial and expressed concerns

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over declining rate of vaginal breech delivery. Several authors have presented evidence that if strict selection criteria are followed before and during labour, vaginal breech delivery is a safe option without associated increase in perinatal morbidity.^{12,13}

The route of delivery in singleton term breech continues to be debated. Vaginal breech delivery is still being done successfully in places where expertise is available especially in developing countries where women resist caesarean section and often present late in labour to avoid it. In addition, where women want more children and where follow-up of caesarean section is poor, vaginal breech delivery remains a valid option.

Although caesarean section rate of breech is high in our setup, vaginal breech delivery is still practiced in appropriately selected cases. We aimed to study perinatal and maternal outcome in patients undergoing vaginal breech birth so that safety of vaginal breech delivery is determined.

Methods

It is a Cross sectional descriptive study conducted in Gynae unit, Lady Aitchison Hospital, Lahore for One & half years (July 2012 – Dec 2013).

Inclusion Criteria for Vaginal Breech Delivery was Gestational age 37 – 41 weeks, estimated fetal weight less than 3.8 kg, flexed head, adequate liquor, reactive CTG, spontaneous labour.

Fetal Outcome was measured in term of apgar score of five minutes, nursery admission, birth trauma (bone fracture, intra cranial hemorrhage) and mortality at birth or within 7 days.

Maternal Outcome was measured in the form of successful vaginal birth, maternal mortality, operative delivery, PPH, wound infection.

Exclusion criteria for vaginal breech delivery was Contracted pelvis, primibreech, maternal disease like hypertension and diabetes, intrauterine growth retardation, footling breech, couple not willing for vaginal breech delivery, previous caesarean section, previous sub fertility, and malformed baby or intrauterine death.

Data Collection

All patients at term with breech presentation, presenting in labour room and OPD were assessed. A detailed history and examination were carried out. Fetal weight

estimation was done clinically & by ultrasound. Pelvis was assessed clinically. Informed consent was taken after mentioning risk and benefits associated with both modes of delivery. Those fulfilling the criteria and willing for vaginal breech delivery were included in the study and were admitted to labour room when presenting in labour. Record of the progress of labour was made on partogram. No augmentation or induction was done. When patient was fully dilated, she was shifted to delivery room. She was encouraged to bear down. Delivery was assisted for delivery of shoulders & head was mostly delivered by Mauriceau Smellie veit maneuver. In some cases, outlet forceps was used for delivery of head. Delivery was conducted by registrar experienced in conducting assisted breech delivery. Pediatrician and anesthetist were present. Patients had emergency caesarean section if there was delay in progress indicated by partogram, fetal distress or cord prolapse. Babies requiring Neonatal intensive care (NICU) admission were followed up for 1 week. Fetal and maternal outcome were studied and entered on Performa.

Results

Total number of births during the study period was 9857. Out of total 9857 births attended during study period, 375 presented with breech at term, Out of these, 155 patients fulfilled the inclusion criteria and were enrolled for vaginal delivery as study subjects. The average age among the breech was 30 years and all were multipara Out of these, 65% delivered vaginally without any complication and rest had Emergency caesarean Section. Commonest indication for Emergency Caesarean Section was dysfunctional labour (44%) followed by fetal distress (30%), footling breech (18%) and cord prolapse (7.4%). Maternal complications of operative delivery, wound infection and PPH were seen in 34%, 6% and 3% patients respectively. There was no maternal mortality in these patients (Table 1). Booking status was significantly important as the successful vaginal breech deliveries were 79.5% amongst the elective ANC provided booked patient as compared to 46.2% unbooked patients. The success rate were statistically significant ($P = 0.001$) (Graph 1).

Regarding fetal outcome, 87% of fetuses had good outcome with no complication. 20 fetuses had Apgar score less than 7 and required nursery admission. Two babies had cord prolapse during labour. They had emergency caesarean section but both expired, due to

birth asphyxia, rest were discharged home. One baby had fracture of humerus during delivery and was sent home in satisfactory condition (table 2).

Discussion

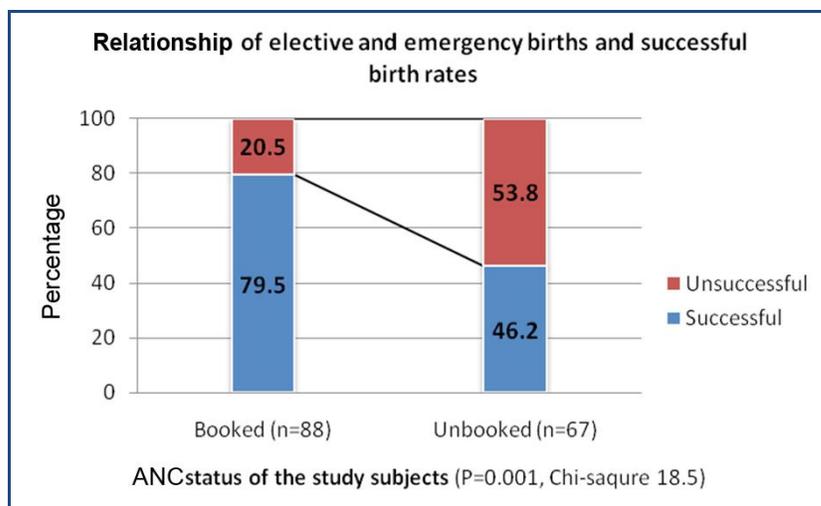
The number of caesarean section is increasing worldwide with an increase in complications like hemorrhage, sepsis and abnormal placentation with consequences of hemorrhage, obstetrical hysterectomy, ruptured uterus and maternal death in subsequent pregnancy.¹⁴ Elective caesarean section for breech has been criticized for this very reason. Several studies have documented increased mortality and morbidity in mothers undergoing elective caesarean section.¹⁵⁻¹⁸ In a WHO study,¹⁹ odds of maternal mortality and severe morbidity in patients delivered by elective caesarean section was 3.4 and 2.3 times higher as compared to those delivered vaginally. All these problems are intensified in resource poor settings where woman are already a neglected part of the society. They want to avoid caesarean section at all and often lose their lives taking a trial of scar at home.

Out of 155 patients selected for vaginal delivery, 65% delivered successfully without any maternal complications. Naheed F²⁰ reports 74% success, Burgos J²¹ 57% and Broche De²² reports 77% success rate of vaginal delivery with no adverse maternal effects. These studies have emphasized that proper selection of cases & adherence to strict protocol results in successful outcome.

Booking status is also an important parameter in determining successful outcome as is shown to be statistically significant in our study. Booking helps in timed assessment by a consultant and appropriate time for counselling. Antenatal care is especially important in our setup where large number of deliveries is being conducted at rural setup. This finding reinforces the need of training of midwives in identification and proper referral of breech cases to proper facilities. Studies^{23,24} have shown patients without antenatal care had two fold increased perinatal morbidity. Emergency

caesarean sections were performed in 54 (35%) of patients selected for vaginal deliveries reasons being dysfunctional labour, fetal distress, footling breech & cord prolapse. These patients had maternal complications of wound infection and PPH but were managed well and there was no maternal mortality. Similar proportion of emergency caesarean section is reported from Norway²⁵ with satisfactory maternal outcome.

Reversing the clock of vaginal delivery towards caesarean section in breech presentation was based on perinatal outcome. After Term breech trial publication,



Graph 1:

Table 1: Maternal complication out of total vaginal trials (n = 155).

Outcome	Frequency	Percentage	95% CI Limits
No complication	101	65.16	57.38 to 72.21
Complication lead to CS	54	34.84	27.79 to 42.62
Wound infection	10	6.45	3.54 to 11.47
PPH	5	3.23	1.39 to 7.33

Note: The denominator for percentage in each cell is total vaginal trials (155).

Table 2: Fetal complication out of total vaginal trials (n=155).

Outcome	Frequency	Percentage	95% CI Limits
Apgar at 5 min= < 7	20	12.90	8.51 to 19.09
Nursery admission	20	12.90	8.51 to 19.09
Mortality	2	1.29	0.35 to 4.58
Birth trauma	1	0.65	0.11 to 3.70

the same team of researchers have published three follow-up studies examining maternal and fetal outcomes at 2 years after birth.²⁶⁻²⁸ They concluded that the risk of death or neurodevelopmental delay was no different in planned caesarean section and planned vaginal delivery group. 17 out of 18 children with serious morbidity in original study were normal at 24 months follow-up.

Since then, lots of studies have compared the perinatal outcome in pretext of mode of delivery. Studies^{2,3,4,29,30,31} have reported better neonatal morbidity in the form of low apgar scores, neonatal intensive care admissions, birth trauma in breech born by elective caesarean section and recommend caesarean section for breech. On the contrary, several authors have reported good neonatal outcomes in patients undergoing vaginal breech birth.^{12,13,32,33,34} Our study reports good fetal outcome in 87% of babies. 20 babies had low Apgar and required NICU admission but only 2 deaths occurred due to birth asphyxia, the rest were discharged within 1 week. One baby had birth trauma of fracture of humerus and was dealt accordingly. Proper selection of cases with strict intrapartum monitoring minimized neonatal complications. Regarding birth trauma risks to babies in vaginal breech delivery, studies^{35,36} have shown that absolute risk of birth trauma is comparable to birth trauma in cephalic vaginal deliveries who had shoulder dystocia or instrumental delivery.

Netherlands Study³⁷ of 35,453 term breeches concluded that caesarean section rate from 50% to 80% resulted in decreased perinatal mortality from 0.35% to 0.18%. 8500 Elective caesarean sections were done to prevent probable 19 perinatal deaths. It means 175 extra caesarean section were done to prevent 1 perinatal death. This is a very important realization in a developing country like ours with high perinatal mortality rate, where a caesarean section in a patient with breech presentation will give her a scarred uterus, and a subsequent trial of vaginal delivery by an untrained TBA can end up in a grave catastrophe, even maternal death. It is estimated that for every infant saved by Caesarean section, one woman will experience uterine rupture during subsequent pregnancy. So, neither elective caesarean section nor vaginal birth for breech is completely risk free. Recent meta analysis³⁸ has concluded that none of the available evidence is strong enough to completely abandon vaginal breech delivery. Guidelines from UK,³⁹ Canada⁴⁰ have been revised stating that planned vaginal delivery may be reasonable in properly selected women and should be

offered. There is need to develop our national guidelines setting eligibility criteria for vaginal breech birth to guide best practice. Repeated drills and hands on training should be part of basic skill training programs to reinforce breech delivery techniques as new doctors are losing art of breech delivery. Recent Cochrane database review⁴¹ has endorsed that short term perinatal morbidity is decreased in planned caesarean section but at the expense of increased maternal morbidity. There is no long term neurodevelopmental delay in vaginally delivered breech babies. It emphasizes that decision regarding mode of delivery should be according to woman's specific health care settings, especially in resource poor countries. It should be individualized according to wishes of patient after explaining her all the risks and benefits. Although mode of breech delivery remains a dilemma, it should be individualized and policy should be according to cultural, economic background.

Conclusion

Proper selection of cases, strict ante and intrapartum protocols are important determinant for successful vaginal breech delivery without compromising fetal maternal well being. Feto maternal morbidity can be significantly reduced with planned booked breech deliveries emphasizing the importance of antenatal care. It is important to develop national guidelines defining the eligibility criteria level to guide safe practice in vaginal breech delivery, hence curtailing the percentage of caesarean being done for this malpresentation.

Disclosure of Interest

No conflict of interest exists.

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