

Maternal and Neonatal Complications in Term Breech Delivered Vaginally

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ABSTRACT

Objective: To evaluate the maternal and neonatal complications in terms of genital tract trauma to mother, perinatal mortality, Apgar score at 5 minutes and neonatal trauma in all singleton term breech cases delivered vaginally.

Study Design: Case series.

Place and Duration of Study: Department of Obstetrics and Gynaecology, Bolan Medical Complex Hospital, Quetta, from May 2005 to March 2006.

Methodology: A 100 consecutive patients with singleton breech presentation, whether booked or unbooked, were admitted and delivered vaginally in hospital during the study period. They were studied for maternal and neonatal complications. Maternal complication included any genital tract trauma during delivery while neonatal complications were perinatal mortality, low Apgar score (less than eight at 5 minutes) and birth trauma.

Results: There were a total 3977 deliveries during this study period, 145 breech presentation (incidence 3.6%). Out of those, 100 were included in the study. All were unbooked cases, 87% were multigravida while 13% were primigravida. An Apgar score of eight was recorded in 87% babies while 10% had an Apgar score of less than eight after 5 minutes. There were 3 still births and one neonatal death. Aggregated perinatal mortality rate was 40/1000 live births. Only one baby had birth trauma (Erb's paralysis) during vaginal breech delivery. Ninety seven (97%) mothers had no complications while only 3 (3%) had complications. Out of these, one had cervical tear and 2 had vaginal tears.

Conclusion: Offering a trial of vaginal breech delivery to strictly selected and well-counselled patients remains an appropriate option without compromising perinatal and maternal outcome. It also decreases the rate of operative delivery for this malpresentation.

Key words: Breech presentation. Extended breech. Vaginal delivery.

INTRODUCTION

Breech presentation was once regarded as advantageous probably because the midwife could pull on the legs to expedite delivery.¹ There are three types of breech presentation-frank breech (most common, 50-70%), complete breech (5-10%) and footling or incomplete breech (10-30%).²

Breech presentation occurs in 3-4% of all deliveries. Predisposing factors for breech presentation include prematurity, uterine abnormalities (e.g. malformations, fibroids), fetal abnormalities (e.g. CNS malformations, neck masses, aneuploidy) and multiple gestations. Abnormalities are observed in 17% of preterm deliveries that have breech presentation and in 9% of term gestations with breech presentation.

Perinatal mortality is increased 2-4 fold with breech presentation, regardless of the mode of delivery. Deaths are most often associated with malformations, prematurity, and intrauterine fetal demise.¹ The risk of perinatal mortality associated with vaginal breech delivery may be 2-5 times higher than planned caesarean section. It is estimated that perinatal mortality for breech presentation at term is about 4-5% for vaginal delivery and 2-4% for caesarean section. The higher perinatal mortality and morbidity associated with breech presentation is due principally to prematurity, congenital malformation, birth asphyxia and trauma.

The management of breech presentation remains an area of intense controversy. Various options are External Cephalic Version (ECV), planned caesarean section and vaginal delivery. There has been an increasing reluctance for vaginal delivery in many centres. ECV may reduce the number of breech presentations and caesarean section while caesarean section has a higher maternal morbidity with small risk of perinatal mortality.

For vaginal breech delivery, estimation of maternal height and clinical assessment of pelvis remains the single most important form of maternal assessment. The value of X-ray pelvimetry in assessment of vaginal

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breech delivery is controversial.³ For vaginal trial of labour, eligibility criteria includes, frank or complete breech at term or near term, proper demonstration of pelvic dimensions, estimated fetal weight of 2500-3800 grams, no hyperextension of the fetal head and no history of uterine scar.⁴

Neonatal outcome can be improved in breech presentation of greater than 34 weeks maturity and sonography done before delivery. The use of magnetic resonance pelvimetry in breech presentation at term did not significantly reduce the overall caesarean section rate. However, it allowed better selection of the delivery route with a significantly lower emergency caesarean section rate.⁵ Neonatal outcome was not compromised by the use of the pelvimetry data.⁵ Proper case selection, vigilant intrapartum monitoring and proper technique can lead to successful vaginal breech delivery without compromising fetomaternal well-being and thus curtailing the percentage of caesarean section.⁶

The aim of this study was to determine the maternal and neonatal complications in terms of genital tract trauma to mother, perinatal mortality, Apgar score at 5 minutes and neonatal trauma in all term breech cases delivered vaginally.

METHODOLOGY

This study was conducted at Bolan Medical Complex Hospital, Quetta, Pakistan, on 100 consecutive singleton term breech cases, whether booked or unbooked, during May 2005 to March 2006.

All women with singleton term breech (37-42 weeks), estimated fetal weight (2500–3800 grams), extended breech, well-flexed fetal head, normal placental site with normal liquor and clinically adequate pelvis were included in the study. Patients with previous caesarean section, contracted pelvis, pre-term (< 37 weeks) and postterm (> 42 weeks gestation), fetal weight < 2500 grams or > 3800 grams, footling breech, hyper extended fetal head and severe intrauterine growth retardation were excluded.

A detailed history of patients regarding present and previous pregnancies was recorded. History of breech presentation in previous pregnancies, their mode of delivery, duration of labour and fetal outcome was recorded in detail. A proforma containing all these details was filled for each patient in the study group. Detailed general physical, systemic and obstetrical examination was done. Ultrasound was performed at the time of admission for the confirmation and type of breech, gestational age, fetal heart rate, estimated fetal weight, position of head, amount of liquor, placental localization and any congenital anomalies. Other investigations including blood group, Rh factor, Hb, random blood sugar, urine analysis, HBsAg and anti-HCV antibody were done.

Trial of vaginal delivery was given to all selected patients by the obstetrician. After the spontaneous onset of labour, progress of labour was monitored carefully and recorded on partogram. External cardiotocography was done for monitoring of fetal heart rate. Oxytocin was used only if there were inefficient uterine contractions.

Progress of labour was monitored. After the full dilatation of cervix, assisted breech delivery was conducted. Duration of labour was recorded. Apgar score at 5 minutes and any birth injury to neonate was noted in the presence of pediatrician. Neonates admitted in nursery were followed up and complications noted. Mother was also examined after delivery for genital tract trauma and managed accordingly.

Statistical analysis of data was carried out using SPSS version 10. Frequency of distribution and percentage were calculated for the Apgar score at 5 minutes, perinatal mortality, birth trauma to the babies and maternal complications.

RESULTS

There were 3977 deliveries by all modes during the study period with only 145 patients with breech (incidence=3.6%). One hundred patients were selected for the study. All cases were unbooked with 87% multigravidas and 13% primigravidas. The highest frequency of breech presentation in women aged 21-35 years with a mean age of 28.62 ± 5.7 years (mean \pm SD).

An Apgar score of eight at 5 minutes was recorded in 87 babies (87%). Ten babies (10%) had an Apgar score of less than eight at 5 minutes while there were 3 still births (3%) (Table I). Perinatal mortality was 4% (stillborn 3%, neonatal death 1%). One case of stillbirth occurred in primigravida with prolonged second stage of labour while the other two occurred in multigravida who presented in second stage of labour with no fetal heart rate and the cause of death was prolonged labour. There was one neonatal death due to meconium aspiration. One baby (1%) had birth trauma, i.e. Erb's paralysis. Ninety seven (97%) mothers had no complications during delivery while 3 (3%) had complications including one cervical and two vaginal tears.

Table I: Apgar score at 5 minutes (n=100).

	Frequency	Percent
00	3	3.0
4.00	1	1.0
6.00	9	9.0
8.00	87	87.0
Total	100	100

DISCUSSION

This study was carried out to know the frequency of

maternal and neonatal complications in term breech delivered vaginally. The aim was to know whether vaginal breech delivery, if performed under selected criterion, could be a safe method. This will not only reduce the escalating caesarean section rates but also give near acceptable results for both maternal and neonatal complications in the setting of a developing country like Pakistan.

Breech presentation creates a mechanical problem in the delivery of fetus. This malpresentation is associated with increased frequency of perinatal mortality and morbidity due to prematurity, congenital anomalies and birth trauma or asphyxia. Some clinicians have recommended a policy of caesarean section for breech presentation at term based on results of non-randomized studies, anecdotal experiences, and medico-legal concerns.⁷ Others, who were experienced with vaginal breech delivery, have continued to recommend planned vaginal birth for selected cases, with the view that vaginal birth would be associated with lower morbidity for the mother, require fewer health-care resources, and would be less costly.⁸

It was observed after the results of the term breech trial in 2000 that there was an increase in elective caesarean section from 25% in 1999 to 64% in 2004. This increase of about 8500 elective caesarean sections in the last 4 years probably prevented 19 perinatal deaths. However, this rise in caesarean section also resulted in 4 maternal deaths that may have been avoidable. Furthermore, in the future, 9 perinatal deaths as a result of the uterine scar and 140 women with potentially life-threatening complications from that uterine scar during their future pregnancies can be expected. Information to the patient should take into account not only the short-term benefits but also the higher long-term risks. Vaginal delivery following strict selection is now preferred.⁹

The incidence of breech presentation was 3.6% in this study which is in accordance with the reported data of 3- 5.3% in local literature^{6, 10, 11} and 3-4% in the United States.¹²

The frequency of breech presentation increases with age and parity. The age range in which multiparous women are concentrated in our community could be attributed to early marriages and lack of family planning. This study at Quetta showed that 87% women were multigravida, while another study was carried out at Sir Ganga Ram Hospital, Lahore (1996-1999), showed 61%.⁶ External cephalic version was not performed in this study because 100% of the women were unbooked and presented in advanced stages of labour.

Perinatal mortality was 4% in this study. This figure was 5% in a study carried out by Hannah and co-workers.⁷ Low socioeconomic factors, illiteracy, lack of antenatal care and multiparity are associated with increased neonatal morbidity and mortality.

In this study, an Apgar score of 8 after 5 minutes was recorded in 87 babies (87%) and 10 babies (10%) had an Apgar score of less than 8 after 5 minutes. While (3%) were stillborn. Low 1-minute Apgar scores and low arterial cord blood pH were significantly more frequent in planned vaginal delivery but not low Apgar scores at 5 or 10 minutes or low venous pH. This aspect does not disqualify selective vaginal breech delivery at term. Various data suggest that vaginal breech delivery still remains a viable option in selected patients.^{13,14}

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%).^{15,16} In this study, only one baby (1%) had birth trauma during vaginal breech delivery, that was Erb's paralysis.

Maternal morbidity in breech vaginal delivery is low and it is significantly higher in the caesarean section.^{17,18} This study showed only 3% maternal morbidity. Two patients had mild vaginal tears and one had cervical tear. They were all managed in labour room and required no hospitalization.

It was observed that about 200 extra caesarean sections are needed to 'save' one baby. However, maternal outcome is impaired, with increased risks of uterine rupture, placenta praevia and placenta increta in subsequent pregnancies. Data also indicates that for every infant saved by a caesarean section, one woman will experience a uterine rupture in subsequent pregnancy.¹⁹ These observations are true in developing countries like Pakistan 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 labour. Keeping in view the above facts, elective caesarean section should not be the treatment of choice in breech cases.

Recently, the results have become available on both the neonatal and the maternal outcome of deliveries after randomization in the term breech trial. At two years, in contrast to the original results in which perinatal death and serious neonatal morbidity were higher in the planned vaginal delivery group, no differences were evident in the combined outcome variable, including death after delivery and neurodevelopment delay.²⁰ Most cases of neonatal death and morbidity in the term breech trial cannot be attributed to the mode of delivery. Moreover, analysis of outcome after 2 years has shown no difference between vaginal and abdominal deliveries of breech babies. It is now concluded that the original term breech trial recommendations should be withdrawn.²¹

Offering a trial of vaginal breech delivery to well-counselled strictly selected patients remains an

appropriate option.²² 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.

CONCLUSION

Selective vaginal breech deliveries may be safely undertaken in units having a set protocol. Vaginal breech delivery is still warrantable in well-counselled strictly selected patients. In this study, there was a majority of unbooked cases in advanced labour which suggest possible direct relationship with lack of education and antenatal checkup. However, these findings would have been modifiable in booked and well-counselled cases.

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