

Management of Breech Presentation in Contemporary Times

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Abstract

Introduction: Incidence of breech presentation goes on decreasing as the pregnancy advances. It is risky due to the various detrimental outcomes, especially for the baby. Vaginal Deliveries in such cases require skill and maneuvers. To reduce maternal and fetal morbidity and mortality most of these cases result in Caesarean Delivery. The ideal management of breech presentation remains a matter of intense debate. A study was undertaken to find out the management in contemporary times.

Materials and Methods: This retrospective observational study was conducted by going through the records for one year. The labour room and operation theatre records were collected, compiled, analyzed and compared with literature.

Results and Observations: 4553 deliveries occurred during the period of one year; among these 159 were breech cases. Of all the breech cases only 5 delivered vaginally; one case had neural tube defect. No planned breech vaginal delivery occurred. Complications were noticed among cesarean cases. Only one case had undergone external cephalic version.

Discussion: To prevent neonatal morbidity and mortality; the obstetricians have been resorting to elective cesarean for breech presentation. The rate of vaginal delivery has steadily declined in the last few decades. It is possible that the unfavorable outcome in fetuses that remain in the breech presentation may be linked to antenatal or underlying disorders that may be associated with breech and not solely due to mode of delivery. All efforts should be made to diagnose breech presentation before the onset of labour to reduce the incidence of emergency cesarean. External cephalic version should be offered if not contraindicated. Vaginal delivery of breech presentation still remains an option and should be individualized.

Keywords: Breech Presentation; External Cephalic Version; Cesarean Delivery

Introduction

Breech presentation is when the baby's podalic pole presents first, instead of the cephalic pole. It is a phenomenon that occurs in 3 - 5% [1] of term pregnancies (37 - 42 weeks of gestation), a higher percentage occurs in preterm pregnancy; 7% at 32 weeks and 25% at 28 weeks [2]. Incidence of breech presentation goes on decreasing as the pregnancy advances. During the course of pregnancy, the fetus

moves continuously in the amniotic sac and may attain breech presentation, which later changes to cephalic as pregnancy progresses. However, in some cases, factors such as uterine anomalies, polyhydramnios, oligohydramnios, multiple gestations, placenta praevia, fetal neuromuscular disorders and laxity of maternal abdominal wall contribute to the fetus remaining in breech till the time of delivery [3,4].

Breech presentation is a high-risk pregnancy due to the various detrimental outcomes, especially for the baby. It could be the cause of genital trauma - operative or non-operative; to the mother, physical and mental impairment in the baby and at times intrapartum death resulting in fresh stillbirth. Vaginal Deliveries (VD) in such cases require skill and maneuvers to ensure safety of the baby. To reduce maternal and fetal morbidity; and mortality most of the breech presentation cases usually result in Caesarean Delivery (CD).

The ideal management of women with term breech presentation remains a matter of intense debate [5]. The rate of vaginal delivery has steadily declined in the last few decades [6]. In the year 2000, the Term Breech Trial (TBT) Collaborative Group concluded perinatal and neonatal mortality or serious neonatal morbidity was significantly lower in the planned CD group than in the planned VD group [7] which marked an apparent turning point in this controversy. Based on the short-term outcomes presented in the TBT study, the Royal College of Obstetricians and Gynaecologists (RCOG) and the American College of Obstetricians and Gynecologists (ACOG) [8] recommended over the next few years that all women with persistent singleton breech presentation at term should undergo a planned CD. An important and almost immediate impact on the practice was also observed in some countries that previously had a high proportion of VD [9]. However, despite its undeniable strengths, a number of weaknesses have been identified in this study. Using multiple logistic regression analyses, the TBT group also reported [10] that the risk of maternal morbidity was lowest following vaginal birth and highest following CS after active labour. However, as rightly pointed out by Joseph, *et al.* [11], the availability of clinical skills has declined in some of these countries, raising concerns from a resident education and training.

A retrospective observational study was conducted at two large medical institutes over a period of one year, to assess the mode of management and delivery in breech presentation and find out the reasons on which decision about mode of delivery was based.

Materials and Methods

This retrospective observational study was conducted by going through the records maintained from July 1, 2020, to June 30, 2021, in two medical institutes. The labour room and operation theatre records, records maintained at Medical Record Department (MDR) were collected, compiled, analyzed and compared with literature. Since it was purely an observational study hence no interference was made in the management of cases. The demographic data like age, parity and social status etc. were recorded along with period of gestation, admission whether in labour or as an antenatal case, mode of delivery, type of caesarean section emergency or elective and indication for doing CS. The birth weight and status at birth of babies were recorded and compared with data available in literature.

Results and Observations

Total of 4553 deliveries occurred during the period of study of one year, among these there were 159 breech cases; thereby indicating the incidence of breech of 3.4 per cent similar to the incidence reported in literature by different studies¹. Of all the breech cases only 5 delivered vaginally; four were multiparous and one was primigravida. One case had neural tube defect – meningomyelocele and hydrocephalus and delivered after decompression of head (Figure 1-3).



Figure 1: Breech showing meningocele with trapped after coming head.



Figure 2: CSF being aspirated from hydrocephalic head.



Figure 3: Newborn with hydrocephalus and meningocele.

Among the 159 cases of breech presentation, 118 cases were multiparous and 41 were primigravida indicating breech presentation is more common in multiparous women than in primigravida. 116 women were between the age bracket of 20 and 30 years, 43 were above 30 years. 133 cases delivered at term and 26 delivered preterm varying from 33 to 36 weeks.

From the data presented above, 96.8% breech cases delivered by CS and only 3% delivered vaginally. Those who delivered vaginally were emergency admissions. No planned breech vaginal delivery occurred. Of the 154 CSs; 95 were emergency CS and 59 were elective CS. Indication mentioned in operation theatre record was 'Breech Presentation' alone without any associated factor; details or reasons for resorting to CS were not mentioned at all.

Those who delivered vaginally were discharged after 48 hours and those who delivered by CS were discharged after 6 to 10 days. 18 cases had postoperative fever, 12 had wound infection and one had wound gaping (Figure 4) requiring secondary suturing. Blood loss in all sections varied from approximately 300 ml to 800 ml, two cases had more than a 1000 ml and required blood transfusion. Birth weight of the babies is shown in table 1. 128 newborn babies were admitted to NICU for observation and shifted with mother after 24 hours. 29 had neonatal asphyxia and remained in NICU for a varying period of 4 to 11 days; one baby expired due to multiple complications. There was one fresh stillbirth due to neural tube defect (Figure 1), one baby had diaphragmatic hernia and expired after surgery.



Figure 4: Wound gaping.

S No	Birth Weight	No (%)
1	Less than 2 Kg	16 (10)
2	2 to 2.5 Kg	41 (25.7)
3	2.5 to 3 Kg	92 (57.8)
4	More than 3 Kg	10 (06)
	Total	159 (100)

Table 1: Birth weight of babies.

Only one case had undergone ECV for breech presentation, but that case also had to be delivered by CS because of developing fetal distress when she went into labour.

Discussion

Breech presentation is not common at term. Breech delivery is risky both to mother and baby; risk is especially more to the baby. Over the years to prevent neonatal morbidity and mortality; the obstetricians have been resorting to CS especially elective CS. This turns around away from vaginal delivery occurred after TBT [7]. Preference for CS over VD may be because of surgeon’s convenience, patient’s apprehension, risk of medical litigation and defensive practice. CS deliveries appear to be quicker and safer but have their own complications like excessive bleeding, infection, increased recovery time, longer hospital stay, thromboembolism, anesthesia complications and

wound complications as noticed in our study (Figure 4) along with extra cost [11]. In our study the cases those underwent CS stayed in hospital much longer than those who underwent VD, CS cases had more complications including blood transfusion.

Multiparity, previous breech delivery, normal fetal weight, adequate maternal weight, term gestation and good pelvic dimensions are some factors to consider while opting for a vaginal delivery [5]. The rate of vaginal delivery has steadily declined in the last few decades [6]. The rate of VD was extremely low in our study and no effort was made to assess the case and specify the reason for which CS was being performed. The indication mentioned was 'Breech Presentation' in all cases which indicates that all breech cases were delivered by CS.

After the TBT in 2000 it was concluded that perinatal and neonatal mortality or serious neonatal morbidity was significantly lower in the planned CS group than in the planned vaginal birth group [2], which marked an apparent turning point in this controversy [7]. Based on the short-term outcomes presented in the TBT study, the Royal College of Obstetricians and Gynaecologists (RCOG) and the American College of Obstetricians and Gynecologists (ACOG) recommended over the next few years that all women with persistent singleton breech presentation at term should undergo a planned CS delivery [8]. An important and almost immediate effect on the practice of CS was also noticed in some countries that previously had a high proportion of vaginal breech deliveries [9]. A number of weaknesses have been identified in TBT; there was lack of adherence to strict criteria for vaginal birth and non-optimal methods of labour management [12-14]. Using multiple logistic regression analyses, the TBT group also reported [10] that the risk of maternal morbidity was lowest following vaginal birth and highest following CS especially when done after active labour.

Hartnack Tharin, *et al.* [15] found that the rate of CS for term breech deliveries increased from 79.6 to 94.2% between 1997 and 2008 in Denmark, while intrapartum or early neonatal mortality decreased from 0.13 to 0.05%, which was significant but lower than the difference reported in the TBT. Vlemmix, *et al.* [16] stated that after publication of the TBT, the elective CS rate increased from 24 to 60%, and overall perinatal mortality and short-term morbidity decreased. Some authors [17] estimated that 338 CS deliveries would need to be performed to prevent one perinatal death. The incidence of severe maternal morbidity was estimated at 6.4/1000 during an elective CS compared with 3.9/1000 during an attempted vaginal delivery. Whereas some suggested that TBT recommendations should be withdrawn [12], while others still consider that the results of the TBT are generalizable [11,18]. TBT guidelines were partially reversed [19]. However, as rightly pointed out by Joseph, *et al.* [11] that availability of clinical skills has declined, raising genuine concerns about resident education and training.

Some studies have raised a very pertinent question if the mode of delivery is the only deciding factor about the perinatal outcome in breech presentation. It is possible that the increased risk observed in fetuses that remain in the breech presentation at term is closely linked to antenatal or underlying disorders that may be associated with the breech presentation and is not solely due to the mode of delivery [20]. Bjellmo, *et al.* [21] showed in their study that unfavorable perinatal outcome was most likely explained by a combination of antenatal risk factors for neonatal death than by the birth process alone.

The Royal College of Obstetricians and Gynaecologists proposed comparable pre-established criteria for the management of breech presentation, recommending that "women should be informed that a higher risk of planned vaginal breech birth is expected where there are independent indications for CS section and in circumstances such as a hyperextended neck on ultrasound, high estimated fetal weight (more than 3,800 g), low estimated weight (less than tenth centile), footling presentation and evidence of antenatal fetal compromise" and further mentioned that the role of pelvimetry was unclear" [22]. But some believe in the role of pelvimetry especially while deciding about mode of delivery [23,24].

In the Finnish Medical Birth Register [25], 1270 women (43.6%) were selected as candidates for vaginal breech delivery, and the selection quality was confirmed by the low conversion rate of vaginal to CS breech delivery (11.4%). This rate was higher (36.1%) than in the TBT [26]. Another alternative to the routine CS in breech presentation is external cephalic version (ECV) at around 36 weeks to limit the increase in elective CS rate for cases of breech presentation. All efforts should be made to diagnose breech presentation before the onset of labour to reduce the incidence of emergency CSs primarily for breech presentation [27].

Case being eligible for ECV is a limiting factor, Bin YS., *et al* [28] showed that 22.3% of 32,321 singleton breech pregnancies were considered ineligible due to oligohydramnios, antepartum haemorrhage or abruption, previous CS or pelvic abnormality, placenta previa, placenta accreta, or an infant with major congenital anomalies. Other contraindications include severe intrauterine growth restriction, abnormal umbilical artery Doppler index and/or nonreassuring fetal heart rate, fetuses with a hyperextended head and significant fetal or uterine malformations; rhesus alloimmunization. If CS or rapid delivery is indicated for another obstetric condition, ECV is also contraindicated like placenta previa, severe preeclampsia, and placental abruption [29]. Suggested policy for reduction of CS for breech presentation will be screening for breech presentation at 36 weeks of gestation followed by timely ECV after careful evaluation of potential underlying antenatal risks and contraindications to ECV. Screening for breech presentation using universal late pregnancy ultrasonography will be preferable so as not to miss any breech presentation case.

One must thoroughly consider the experience of the health care team/the availability of clinical skills required for conducting a vaginal breech delivery and carefully select women who are eligible for planned vaginal delivery after fulfilling all criteria. Breech presentation is a condition for which personalized obstetrical care is particularly needed both antenatally and during labour. Expertise in the conduct of vaginal breech delivery is becoming less common due to fewer vaginal breech deliveries being offered throughout the world over.

Consideration of complications is important when assessing indications for CD in developing countries and these should be weighed against the benefits of operation. The risk of uterine rupture is increased by up to 35 times for women in labor who have had a previous CD [30]. Placenta accreta is three times more common in women with previous CD [31].

Vaginal delivery of breech presentation still remains an option and the systematic review by Berhan., *et al.* [32] supports “the practice of individualized decision-making on the route of delivery.” Indications for CD should always be carefully evaluated and this is especially important in resource-poor settings. Skills training for assisted vaginal breech delivery should be strengthened and maintained.

Conclusion

- Breech presentation is a high-risk pregnancy, this is risky for the mother and baby both, more risky to baby.
- Risk is maximum when breech presentation is diagnosed first time during labour.
- To avoid above situation; all antenatal cases should undergo detailed clinical examination and ultrasonography to detect breech presentation and any other associated risk factor with breech presentation.
- All cases of breech presentation should be offered ECV if there is no contraindication.
- The cases where breech presentation is still persisting; should be assessed in detail if vaginal delivery can be attempted.
- All other cases should preferably undergo elective CS.
- The training of staff for conduct of assisted breech delivery be strengthened by intensive skill development in skill lab.
- The mother should be involved in decision making at every step and her decision should be honored and accepted.
- The above plan will reduce the incidence of CS for breech presentation per se.

Disclosure

Author reports no conflict of interest in this work.

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