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Study of Maternal and Perinatal Outcome in Term Singleton Breech Presentation.

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ABSTRACT

This study aimed to assess the perinatal morbidity and mortality in breech deliveries, to study the correlation of parity and birth weight with perinatal mortality by mode of delivery. Of 289 women in labour in Sree Balaji medical college and hospital, 98 underwent vaginal breech deliveries and 191 delivered by caesarean section. Birth trauma was restricted to vaginal deliveries. The perinatal mortality was significantly higher in vaginal deliveries (8.2%) compared with caesarean deliveries (0.9%). A higher perinatal mortality was recorded among infants >3.5–4 kg birth weight in vaginal deliveries. Caesarean section reduced the perinatal mortality in both nulliparous and parous women in term breech infants.

Keywords: maternal, perinatal, singleten breech

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INTRODUCTION

It has long been thought that vaginal delivery of breech infants is associated with increased neonatal morbidity and mortality compared with elective caesarean delivery. This observation has been a topic of considerable debate over the past few years, and retrospective studies of the subject have yielded conflicting data. The controversy over appropriate management of breech presentation, as well as considerable disagreement regarding appropriate candidates for a trial of vaginal breech delivery, has made it a difficult phenomenon to study prospectively. Only 3 prospective, randomized controlled studies have examined maternal and newborn outcomes associated with breech vaginal delivery. The first 2 were published more than 20 years ago and found minimal increased risk to the fetus in a carefully selected group of vaginal breech deliveries. In these 2 older studies, however, maternal morbidity was significantly increased (49%) with caesarean delivery, thus influencing decisions to undergo a trial of labour for breech presentation. More recently, in the Term Breech Trial, Hannah et al. conducted a large, multicentre, prospective, randomized controlled trial of vaginal breech delivery as compared with planned caesarean delivery. They found a lower rate of perinatal and neonatal mortality and serious neonatal morbidity (1.6% for planned caesarean delivery compared with 5.0% in planned vaginal birth) with no significant differences in maternal morbidity or mortality. This study prompted the American College of Obstetricians and Gynecologists to recommend planned caesarean delivery for term singleton breech presentation [1-7].

AIMS AND OBJECTIVES

- To know the incidence of term singleton breech presentation in Sree Balaji medical college and hospital.
- To study the etiological factors responsible for breech presentation
- To study the mode of delivery.
- To study the incidence of caesarean section in breech presentation.
- To study the maternal and perinatal morbidity and mortality.
- To evaluate various intrinsic factors like maternal age, parity, type of breech and mode of delivery on the fetal outcome.

METHODS

This prospective study was conducted over a 12-month period (from June 2011 to June 2012) on women attending the delivery room with a live singleton term breech presentation at the maternity and child hospital in Sree Balaji medical college and hospital. Of the 3650 deliveries during the study period, 289 were breech presentation. Women with obstetric problems and medical illnesses were excluded from the study. All women were examined by the same obstetrician, and medical and neonatal data were obtained, including maternal age, parity, educational level, date of last menstrual period, previous caesarean section, previous admission to neonatal intensive care unit (NICU), history of infertility and maternal illnesses. All women were informed about the study before they gave consent to participate. All of the women who were eligible for the study consented to participate.

Abdominal examination was performed for fetal presentation, engagement and fetal size. Pelvic examination was performed under full aseptic techniques, to assess cervical dilatation, type of breech and state of amniotic membranes, to exclude cord prolapse or presentation and to assess the pelvis. Ultrasound was done to confirm gestational age, estimate fetal weight, exclude congenital malformations of the fetus, exclude twin pregnancy and locate the placenta. A trial of breech vaginal delivery was done only for those patients who had the inclusion criteria for breech vaginal delivery. Those who did not meet these criteria delivered by caesarean section without trial of labour.

The inclusion criteria for a trial breech delivery were: a clinically adequate pelvis, a frank or complete breech with estimated fetal weight < 4 kg with a flexed head and the informed consent of the mother. Labour was allowed to progress and the fetal heart rate was continuously monitored by electronic fetal heart monitoring with regular abdominal and pelvic examination. The method of delivery was assisted or spontaneous breech delivery by the most experienced obstetrician. Conversion to caesarean section was considered appropriate whenever the need arose, e.g. lack of progress of labour and fetal distress. The

indications for caesarean section were: primigravida aged > 35 years, conception after infertility, previous difficult vaginal delivery, macrosomia, cephalopelvic disproportion and breech with footling presentation. All neonates were examined following delivery by the paediatric resident. Perinatal outcome was assessed including Apgar scores at 1 minute and 5 minutes, admissions to NICU, as well as birth traumas and deaths. The overall perinatal mortality rate was calculated according to the formula: $[\text{no. of still births} + \text{no. of 1st-week neonatal deaths}]/\text{no. of total births} \times 100$. Perinatal mortality in relation to parity and birth weight were compared by route of delivery.

RESULTS

A total of 289 women were included in this study, 98 (33.9%) who delivered vaginally and 191 (66.1%) who had an caesarean section. There was higher incidence of caesarean deliveries among the nulliparous group than the parous group. Neonates of vaginal deliveries had a higher incidence of Apgar score < 7 at 1 and 5 minutes. NICU admittance was significantly higher in the vaginal compared with the caesarean delivery group. All the cases of birth trauma were in vaginally-delivered infants. There were 7 infants with brachial plexus lesion, 3 with birth asphyxia and 1 with a fractured clavicle. The overall perinatal mortality rate was 2.07% (6/289). Neonatal deaths in the first week occurred significantly more often among infants delivered vaginally (3/98, 3.06%) than by with caesarean delivery (1/191, 0.5%). There were no stillbirths in either group. The cause of 1st-week neonatal death was birth asphyxia in both vaginal and caesarean deliveries.

Neonatal mortality was higher in both nulliparous and parous woman when comparing vaginal and caesarean deliveries. Among the nulliparous, a higher rate of neonatal mortality was recorded for vaginal deliveries (6.8%) compared with caesarean deliveries (1.2%). For the parous neonatal deaths in the vaginal delivery group (3.9%) while there were no neonatal deaths in the caesarean delivery group. Among the infants with birth weight 2.5–3.5 kg, there were 1 neonatal deaths for those delivered vaginally while there were no neonatal deaths among caesarean deliveries. In the infants with birth weight 3.5–4 kg, there were 2 neonatal death for vaginal deliveries and 1 for those delivered by caesarean.

DISCUSSION

According to Cheng and Hannah who reviewed 24 studies in 1993, vaginal delivery is associated with higher perinatal morbidity and mortality rates than planned caesarean delivery. They suggested that, until more evidence was available, a planned caesarean delivery should be strongly considered for persistent breech presentation at term. A study by Bingham et al. concluded that a policy of selected vaginal delivery will result in 4 perinatal deaths for every 1000 patients delivered. Other studies suggested a potential increased risk of neonatal morbidity and mortality after a trial of labour and vaginal delivery and that there was greater neonatal survival in association with caesarean section.

Although there is a growing tendency worldwide to perform elective caesarean section for infants presenting in the breech position, a trial of vaginal delivery is still allowed in selected breech cases in our Sree Balaji medical college and hospital. In this prospective study the perinatal outcomes of 191 women delivered by caesarean section were compared with those of 98 women delivered vaginally. We found that, even applying appropriate inclusion criteria for a trial of labour, vaginal breech deliveries seemed to be associated with significantly greater neonatal risks. The overall neonatal outcomes were better in the caesarean section group compared with the vaginal delivery group. In this study, the rate of caesarean section for term breech presentation was 66%. It should be noted that caesarean section was clinically indicated and not on the patient's request.

Parity and birth weight were also evaluated. There were more nulliparous in the caesarean section than the vaginal delivery group. Birth weight is an important factor affecting the caesarean section rate in breech delivery, with more infants weighing >3.5–4 kg in the caesarean section than vaginal delivery in our study. The present study confirmed that Apgar score < 7 at 5 minutes occurred significantly more often among vaginal deliveries. Also, our study documented a significantly higher rate in NICU admission for vaginal breech deliveries. Our results indicate that major neonatal morbidity was increased with vaginal breech deliveries. The most striking was risk of brachial plexus injury; this was a major cause of injury associated with breech vaginal deliveries in our study. Clearly our study supports the view that vaginal breech delivery is associated with birth trauma more often than caesarean deliveries. When comparing vaginal and caesarean deliveries, the present

study has confirmed a significant association between mode of delivery and neonatal mortality. A significantly higher neonatal death was reported among vaginal breech deliveries.

Our study sustains the general opinion that nulliparous women are at greater risk than parous women in vaginal breech delivery. In those who delivered vaginally, the neonatal mortality rate was higher in nulliparous women compared with that in parous women. It suggests that the firmer tissues of primigravidas present greater hazards of trauma and asphyxia to the fetus. It is important to inform nulliparous patients who refuse elective caesarean section and undergoing a trial breech vaginal delivery that morbidity and mortality seems to be increased in women in their first pregnancy. The neonatal mortality following vaginal breech delivery increased when fetal weight was 3.5-4 kg. This is explained that macrosomic baby is more liable to birth trauma and asphyxia and such infants should be delivered by caesarean section to avoid these adverse perinatal outcomes [8-14].

CONCLUSION

Vaginal breech delivery is associated with significantly increase in perinatal morbidity and mortality (more evident in nulliparous women and in infants with expected birth weight 3.5–4 kg), when compared with caesarean breech delivery. Caesarean section for singleton term breech is recommended as a mode of delivery in all nulliparous and for those infants with expected birth weight 3.5–4 kg.

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