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Original research article

Fetomaternal Outcome in Breech Delivery

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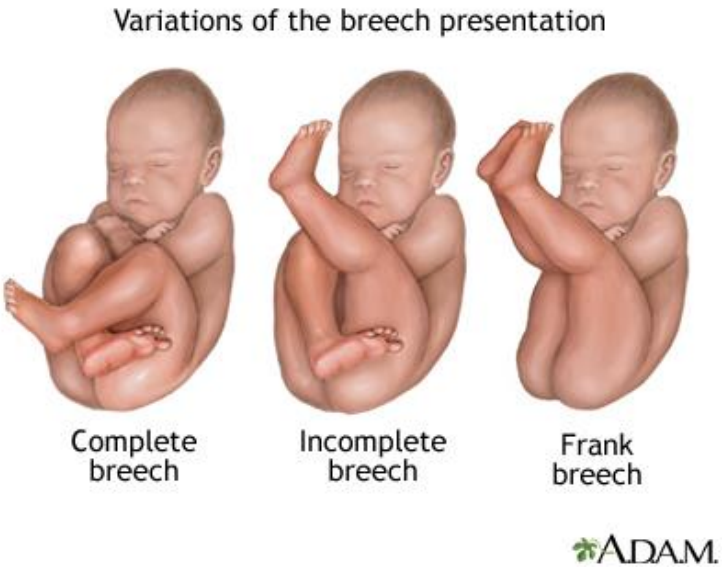
Abstract
Breech is the most common abnormal presentation where podalic pole presents at the pelvic brim. The overall incidence of breech presentation is 3 – 4 %. Breech delivery is known as "PRASAV VIKAR "in the Vedas and it is challenging problem in obstetrics even today. Management of breech in labour is the most controversial and complicated part in developing countries like India because of different obstetrics and neonatal units compared to western parts. The aim of the study was to find out the incidence of maternal and fetal outcome in breech presentation in Sir T hospital Bhavnagar in past 1 year. The present retrospective study was carried out in Department of obstetrics and Gynecology from 1st May 2021 to 30th April 2022. Total 110 cases were included in this study. The demographic data like age, parity, antenatal care, period of gestation at the time of delivery, birthweight, presence of antenatal complications and mode of delivery were included. The incidence of breech was found to be 6.35% out of total deliveries. Majority of the cases were in between 20 – 30 years of age. Perinatal morbidity was seen to be higher in babies delivered vaginally as compared to caesarean delivery. Breech delivery is a high-risk pregnancy with adverse fetal outcome during pregnancy and labour, though cesarean is for breech presentation is not universally recommended, but it can reduce the perinatal morbidity and mortality. The mode of delivery in breech presentation should be specified based on the type of breech, stage of labour, fetal wellbeing and availability of skilled obstetrician.
Keywords: Breech presentation, parity, period of gestation, birthweight, antenatal complications, fetal complications, contraception.

Introduction

Breech presentation refers to the fetus in the longitudinal lie with the buttocks or the lower extremity entering the pelvis first.[1]
1.**Frank breech**: The fetus has flexion of both hips and the legs are straight with the head near the fetal face.
2. **Complete breech**: It has the fetus sitting with flexion of both hips and legs in flexed position.
3.**Incomlete breech**: It can have any combination of one or both hips extended also known as footling presentation or knee presentation.

The incidence of breech presentation at term among singleton pregnancies is 3 – 5 %. Increased rate of maternal and perinatal morbidity is associated with it regardless of mode od delivery. Complications like genital tract injuries, premature delivery. umbilical cord prolapses, and birth trauma are more common. Vaginal breech deliveries with a 10-fold higher risk of intrapartum fetal death as compared to vaginal cephalic delivery [2,3]. The ACOG and RCOG recommends that the risk and benefits of both modes of delivery should be discussed with the patients, they also suggest that an external cephalic version should be offered with breech at term if there are no contraindications.

Some obstetricians advocate cesarean section for all primigravida patients with breech presentation at term with a view to lower the perinatal mortality and morbidity.[4] Some have different views regarding management of breech presentation. For us obstetricians the interest of the baby as well as mother are equally important. In an effort to reduce maternal morbidity one should not jeopardize the long-term neonatal outcome. So, one should be liberal about cesarean section. Recurrent breech: in previous 1 breech delivery -9% risk increases, previous 2 breech delivery -25% risk increases and in previous 3 breech delivery -30% risk increases.[5]



Material and Methodology:

Study design: Retrospective study

Study population and duration: May 2021 to April 2022, Study carried out in pregnant women with breech presentation in department of obstetrics and gynecology at Sir T hospital Bhavnagar. Total number of deliveries were 3240 out of which 206 were breech.

Sample size: study was carried out on 110 cases of breech presentation analyzing their case sheets.

Inclusion Criteria:

- All pregnant women with age 16years to 45 years of age.
- All pregnant women between 37 - 42 weeks
- All pregnant women with singleton breech.

Exclusion criteria:

- Multigestational pregnancy.
- Pregnancy with comorbidities like hypertension, diabetes, thyroid disease.
- Pregnancy with intrauterine fetal death.

- **Results:**

There is total 3240 deliveries over the study period of 1 year. In that 206 breech deliveries occurred over this period, among them 126 were term breech deliveries accounting of 3.8% of total deliveries. Out of 126 breech deliveries 84 women delivered through cesarean section and 42 of them delivered vaginally. 16 women were excluded as they had diagnosed intra uterine fetal death at presentation. Therefore 110 women meeting the criteria were taken for the analysis. For 66 women, vaginal delivery was unplanned ,36 women presented in second stage of labour and 7 were presented in advanced stage of labour.

Table 1:

Characteristics	Frequency	Percentage
Age (years)		
<20 years	8	9.5
20 – 30 years	64	76.2
>30 years	12	14.3
Parity		
Primipara	43	67.18
Multipara	21	32.8
Antenatal care		
Registered	32	39.1
Unregistered	50	60.9
Period of gestation at time of delivery		
37-40 weeks	69	82.1
40-42 weeks	23	17.9
Birthweight		
<2500gm	23	34.84
>2500gm	43	65.1
Antenatal complications	12	16.7

Antenatal care is very important to identify and treat maternal conditions to improve maternal and fetal outcome. Majority of the pregnant patients belong to reproductive age group of that is between 20-30 years of age, and then lies the age group of >30 years. [5,6] Majority of patient are Primigravida as compared to multigravida patients [5]. A 100 percent fetal salvage following cesarean section compared with the perinatal loss associated with vaginal delivery even in a small series such as this, warrants liberalization of cesarean section in the management of breech presentation in primigravida.[6,7]

Majority of patients have unregistered their pregnancy, as they belong to rural slums and are very poor and illiterate, and their follow up for antenatal visits is difficult as they live on daily wages. So, they directly come when there is labour pain or have some major complain which is unbearable for the patient which hampers their daily lives. Majority of the patients delivered between 37-40 weeks.as beyond that there are complications like entrapment of head etc. Majority of patients give birth to a full-term baby with more than 2500 gm comparing with preterm delivery [6]. Breech presentation is associated with placenta previa, congenital anomaly of uterus, oligohydramnios.

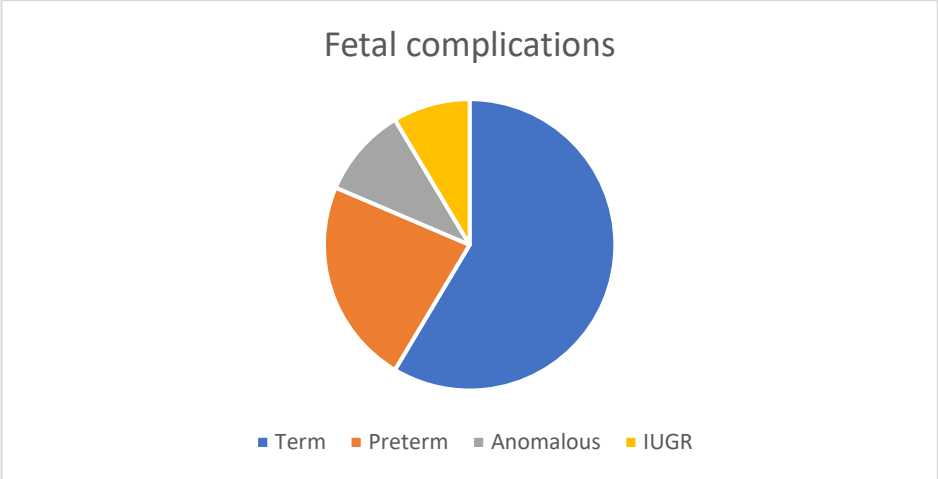
In our institute all deliveries are conducted under supervision. There was no spontaneous delivery, majority were assisted breech vaginal deliveries, in which majority were delivered by cesarean route and less were delivered by breech extraction. Vaginal deliveries are common in frank breech presentation. Cesarean were common amongst complete breech and footling presentation not by vaginal route mainly because of prematurity, difficult in delivery of head, cord prolapse and cord compression associated with it, other indications of Cesarean delivery were placenta previa, oligohydramnios, previous cesarean section, cord prolapse with breech presentation [7]. In only 1-2 cases of footling presentation breech extraction was done as it was a case of multigravida with very preterm presentation. Multigravida patients with average size baby weight and adequate clinical pelvimetry was given trial of normal vaginal delivery [7]

Discussions:

This retrospective study is aimed at determining the short term maternal and perinatal outcome of breech delivery at Sir T hospital. Nearly 80% of women are unregistered, and the appropriate mode of delivery could not be planned for them beforehand, this led to many unplanned vaginal breech deliveries which in part is responsive for the high rate of adverse perinatal outcome. [8] Entrapment of aftercoming head is a specific intrapartum emergency associated with breech vaginal delivery and it reflects either incompletely dilate cervix or cephalopelvic disproportion, this complication occurs more common in preterm than term deliveries. [09,10] Higher rate of adverse events was noted in women with age >30 years and gestational age >40 weeks and birth weight less than 2500gm weight. Mortalities were higher among those with gestation more than 40 weeks and baby weighing less than 2500 gm as compared to baby with more than 2500gm weight.

Table 2:

Labour details and maternal complications	**Percentage (%)**
Stage of labour at presentation	1
Not in labour	
Latent stage of labour	7
Active stage of labour	21
Second stage of labour	20
Premature rupture of membrane	36
Need of episiotomy	25
Cord prolapses	53
Entrapment of aftercoming head	4
Need of cervical incision	4
Postpartum hemorrhage	3
Total labour duration (hours)	2
Duration of second stage of labour(minutes)	7.6
Duhressens incision	10.5
Congenital malformations	12.1



Graph 1:

Cerebral trauma and anoxia are implicated as serious hazards associated with delivery of the aftercoming head. Breech extraction was associated with a prohibitively high perinatal wastage. Intravenous oxytocin was employed to augment labour of a very small and very selective group of patients with no associated perinatal loss.

There are many antenatal complications associated with breech delivery. Mainly patients present in active stage of labour followed by latent stage of labour. they are already in that phase of labour where an obstetrician can easily decide whether trial of vaginal delivery can be done or it needs elective cephalic version or elective cesarean section. [10] Many patients came with premature rupture of membranes where there is severe oligohydramnios or anyhydromnios, which can lead to chorioamnionitis, in that scenario emergency cesarean is the best way to save mother from further infection and fetus from perinatal morbidity and mortality. In many patients were trial of labour can be given, need of episiotomy is must, to avoid shoulder entrapment and head entrapment. [9,10] In many patients were there is a chance of cord entrapment like in footling presentation emergency cesarean section is done. In urban areas where there is no skilled obstetrician, they give a vaginal trial in high-risk breech which leads to entrapment of head, then they refer to higher center for the same in mean time already the baby has sufficed enough damage and hypoxia leading to fetal death.

Hysterostomatotomy or Duhressens incision were used for urgent indications for immediate delivery where the cervix is incompletely dilated and, in some cases, where cesarean section has become contraindicated because of the risk to the mother due to prolonged labour, ruptured membranes and potential infections. [11] In former years it was limited to elderly primigravida and in eclampsia. It is permissible only in those cases where termination of labour is in the interest of either the mother, the fetus or both. The cervix must be adequately effaced though it is improperly dilated and conditions, must be such that the subsequent operation for delivery would be properly performed if the cervix were already fully effaced and dilated. It is an operation for the specially trained practitioner's to be carried out only in a suitable environment such as well-equipped maternity hospital.

Maternal indications:

1. Maternal exhaustion as a result of prolonged labour associated with primary or secondary uterine inertia and malpresentation of the head.
2. A true Bandls contraction ring.
3. Preeclampsia with slow labour.

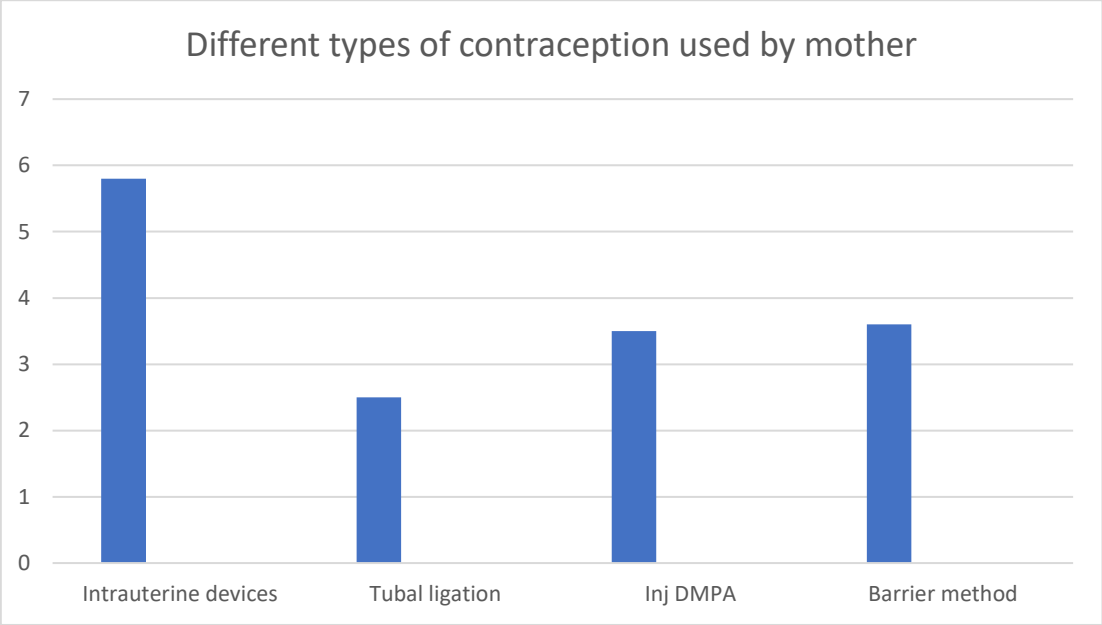
4. Labor coming to a standstill in ana elderly primipara.
5. Previous cesarean section with thin uterine scar.

Fetal indications: In any case where evidence of fetal distress is present and where prolapsed cord is found.

Contraindications: It is generally agreed that placenta previa is an absolute contraindication for the operation since fatal uncontrollable hemorrhage may result.
Injuries to baby's legs or arms such as dislocated or broken bones can happen. Umbilical cord problems like twisted or flattened umbilical cord during delivery which can cause nerve or brain damage due to lack of oxygen and uteroplacental insufficiency. In cesarean section 2 cases of atonic PPH occurred, in cases of vaginal delivery there were 2 cases of traumatic PPH occurred for which vaginal exploration was done. In one case of vaginal delivery rupture uterus occurred for which emergency laparotomy was done. So that maternal morbidity higher in patients delivered by vaginal delivery than patients delivered by cesarean. But there are studies saying that vaginal delivery has low maternal and perinatal complications than cesarean section.

Some of the factors which may contribute to breech presentation are:
1. Multigestational pregnancy which makes it harder for each baby to get into right position.
2. There is too much or too little amniotic fluid
3. The uterus is not normal in shape or has abnormal growths such as fibroids. Most of the time, the uterus is shaped like an upside-down pear. If its shape differently, there might not be enough room for a full-grown baby to move into position.
4. Placenta previa
5. The baby is preterm. This means they are less than 37 weeks gestation and may not have turned to a head first position.
6. Fetal has a birth defect that causes them to not turn head down.

With increasing weight cesarean section rate increases. Incidence of preterm and hence low birth weight baby is higher amongst the breech presentation [11]. Asphyxia was more common in vaginally delivered babies than in babies delivered by cesarean. It is mainly because of prematurity, difficulty in delivery of head, cord prolapse and cord compression associated with vaginal delivery .in babies delivered by cesarean section the APGAR score was good hence this concludes that elective cesarean section gives better perinatal outcome. [11,12] In majority of cases of low APGAR score cause of death was respiratory distress syndrome and prematurity while in case of better APGAR score cause of death was septicemia. [11] Congenital anomaly in form of anencephaly was present in one of the cases which died soon after delivery. Overall incidence of congenital anomaly was 12.1 percent. Other anomalies associated with breech presentation are hydrocephalus, meningomyelocele etc. Breech presentation at term was associated with a borderline significantly higher risk of cerebral palsy than vertex presentation.[13] Breech presentation is associated with higher incidence of congenital anomalies so it must be ruled out by ultrasonography examination at 18-20 week as. Higher rate of perinatal mortality seen in case of breech presentation as it is associated with higher complication rate, especially if delivered vaginally. Most common cause for fetal death was prematurity and birth asphyxia.[14]



Graph 2:

Contraceptive methods have a range of benefits other than the primary purpose of pregnancy prevention. Contraception reduces pregnancy related morbidity and mortality, reduces the risk of developing certain reproductive cancers, and can be used to treat many menstrual related symptoms and disorders. Research indicated that family planning, including planning, delaying and spacing pregnancies, is linked to improve birth outcomes for babies , either directly or through healthy maternal behaviors during pregnancy. A large and growing body of literature explores the health benefits related to services received at family planning clinics .Majority of the women had used intrauterine contraceptive device like copper T for birth spacing followed by barrier method, injectable contraceptives and tubal ligation .Because not all women have equal access to the many benefits of contraception and other health services ,there is more work to be done in implementing programs and policies that advance contraceptive access and improve health outcomes for all women.[15]

Conclusions:

Vaginal breech deliveries demand special skills, this is important for low-income countries like ours where the facility of cesarean section is limited. Pelvic size, fetal weight, type of breech, fetal maturity, parity, degree of extension of fetal head and available neonatal facilities should be considered while taking the judgment for route of delivery. Women should be informed of the benefits, including reduced perinatal mortality and risks both for the current and for future pregnancies of planned cesarean section for breech presentation [15]. Moreover, it is explicated that the decision should be contingent upon the expertise of the healthcare providers and that the planned term breech vaginal delivery may be reasonable under hospital specific protocol. This study aimed to find out the short term maternal and perinatal outcomes of term breech delivery.

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