CODEN [USA]: IAJPBB ISSN: 2349-7750

INDO AMERICAN JOURNAL OF
PHARMACEUTICAL SCIENCES

http://doi.org/10.5281/zenodo.2532599

Available online at: http://www.iajps.com *Review Article*

MANAGEMENT OF BREECH DELIVERY

Areej Abdulrhman Alotaibi[1], Fatma Mohammed Al-Shehab[2], Mohamed Emad Ghorab[3], Fahad Abdullah Alhamdan[4], Najla Abdullah Alsubyani[3], Bayan Ali Alqarni[4], Hadeel Abdullah Alziyadi[5], Hajar Rida Almoqbel[6], Ruba Abdulrahman Saleh[4], Zainab Mohammed Al Faraj[7]

[1] Tabuk University,[2] Arabian Gulf University,[3] Batterjee Medical College,
[4] Ibn Sina National College,[5] Taif University,[6] Imam Abdulrahman Bin Faisal University,
[7] Maternity and Children Hospital - Dammam

Abstract:

Background: *Breech presentation is referred to the fetus in the longitudinal lie with the buttocks or lower extremity when initially enters the pelvis. Breech presentation is about 3%– 4% of every single fetal presentation at term. A higher percentage of breech presentations happens with less advanced gestational age.*

Methodology: *We conducted this review using a comprehensive search of MEDLINE, PubMed, and EMBASE, January 1985, through February 2017. The following search terms were used: breech, prevalence of breech pregnancy, classification of breech, management of breech, external cephalic version*

Aim: *In this review, we aim to study the prevalence and types of breech, and the best way to manage it.*

Conclusion: *The most secure mode of delivery in case of breech presentation has for quite some time been a debate in obstetrics. It is advised to carry out elective cesarean section as opposed to vaginal delivery for singleton term breech pregnancies when there is fetal trouble, macrosomia, footling breech presentation, clinically insufficient maternal pelvis, growth-restricted child, placenta previa or fetal anomaly incompatible with vaginal delivery, or if an expert clinician is absent or the physician lacks sufficient expertise for VBD.*

Keywords: *breech, elective cesarean, breech delivery, external cephalic version*

Corresponding Author:
Areej Abdulrhman Alotaibi,
Areej-A1@Hotmail.Com – 0569987449

QR code

Please cite this article in press Areej Abdulrhman Alotaibi et al., ***Management of Breech Delivery.,*** *Indo Am. J. P. Sci, 2018; 05(12).*

INTRODUCTION:

Breech presentation is referred to the fetus in the longitudinal lie with the buttocks or lower extremity when initially enters the pelvis. The categories of breech presentation are three and they include frank breech, complete breech, and incomplete breech. In a frank breech, the infant has flexion of the two hips, and the legs are straight with the feet close to the fetal face in a position that represent a pike. The complete breech type has the fetus sitting with flexion of the two hips and the two legs in a tuck position. At last, the incomplete breech can have any positions combined with the two hips extended, also called footling (one leg extended) breech, or double footling breech (the two legs extended). Breech presentation is about 3%– 4% of every single fetal presentation at term. A higher percentage of breech presentations happens with less advanced gestational age. At 32 weeks, 7% of unborn infants are breech, and 28 weeks or less, 25% are breech. The management of term breech is exceptionally controversial and varies between various institutions and even among various clinicians in a similar institution **[1]**.

Vaginal breech deliveries (VBDs) are related with a 10-fold increase in perinatal mortality when compared to vaginal cephalic deliveries (VCDs). The most secure mode of delivery in case of breech presentation has for quite some time been a debate in obstetrics. It is advised to carry out elective cesarean section as opposed to vaginal delivery for singleton term breech pregnancies when there is fetal trouble, macrosomia, footling breech presentation, clinically insufficient maternal pelvis, growth-restricted child, placenta previa or fetal anomaly incompatible with vaginal delivery, or if an expert clinician is absent or the physician lacks sufficient expertise for VBD. Evidence abounds that unlike VBD for singleton term pregnancies, elective cesarean section diminishes perinatal mortality and morbidity, and maternal morbidity (urinary incontinence and postpartum perineal pains) in developed countries **[2]**.

METHODOLOGY:

- **Data Sources and Search terms**

We conducted this review using a comprehensive search of MEDLINE, PubMed, and EMBASE, January 1985, through February 2017. The following search terms were used: breech, prevalence of breech pregnancy, classification of breech, management of breech, external cephalic version

- **Data Extraction**

Two reviewers have independently reviewed the studies, abstracted data, and disagreements were resolved by consensus. Studies were evaluated for quality and a review protocol was followed throughout.

The study was approved by the ethical board of King Abdulaziz University Hospital

Epidemiology

3% to 4% of all term pregnancies present as breech. The incidence of breech is higher is less advanced gestational age. This is evident since at 32 weeks gestational age, 7% of fetuses are breech, while at 28 weeks or less, 25% can present as breech**[1]**.
Particularly, with history of one breech delivery, the recurrence rate for subsequent pregnancy for breech was nearly 10%, and for a following third pregnancy, it approached 27%. Previous cesarean delivery has also been described as a risk factor to increase the incidence of breech presentation by two times**[1]**.

Causes and associated conditions

Clinical conditions that are associated with breech presentation comprise those that affect the vertical polarity of the uterine cavity or may modify fetal motility. Such conditions include prematurity, congenital anomalies, multiple gestations, aneuploidies, uterine leiomyoma, Mullerian anomalies, and placental polarity such as in placenta previa are the most common factors leading to breech presentation. Additionally, a prior history of breech presentation at term leads to a higher risk of recurrent breech presentation at term in the following pregnancies **[3]**.

Conditions that modify vertical polarity or the uterine cavity, or hinder the ability of the fetus to turn to the vertex presentation in the third trimester are listed as **[4-6]**:

- Mullerian anomalies, including Septate uterus, bicornuate uterus, and didelphys uterus
- Placenta conditions such as placenta previa as the placenta is occupying the inferior portion of the uterine cavity, obstructing the presenting part from engaging
- Large uterine myomas located in the lower uterine segment, mostly those which are intramural or submucosal because they prevent engagement of the presenting part.
- Prematurity is a major risk factor
- Aneuploidies and fetal neuromuscular disorders often lead to hypotonia of the fetus, leading to ineffective movement
- Congenital anomalies, for example, fetal sacrococcygeal teratoma, fetal thyroid goiter
- Polyhydramnios makes the fetal lie unstable,

thus unable to engage
- Oligohydramnios prevents the fetus from turning to vertex due to less fluid
- Laxity of the maternal abdominal wall: Uterus falls forward, the fetus is unable to engage in the pelvis.

The risk of cord prolapse differs based on the type of breech. The highest risk of prolapse occur with incomplete or footling breech 15% to 18% respectively, whereas complete breech carries a lower 4% to 6% risk. Frank breech is uncommon to cause prolapse **[7]**.

Classification of Breech

Types of breech rely upon how the infant's legs are lying. They are classified as **[8]**:

•A frank breech (also called an extended breech) is when the child's legs are up next its abdomen, with its knees straight and its feet beside its ears. This is the most widely recognized type of breech.

•A complete breech (flexed breech) is the point at which the infant appears as if it is sitting crossed-legged with its legs bent at the hips and knees.

•A footling breech is the point at which either of the child's feet are delivered first rather than the pelvis. This is more typical in infants conceived prematurely or before their due date.

Additionally, to the above-mentioned, breech births in which the sacrum is the fetal denominator can be categorized by the position of a fetus. Therefore, sacro-anterior, sacro-transverse and sacro-posterior positions all exist, however, left sacro-anterior is the most presentation. Sacro-anterior results in an easier delivery when compared to other forms **[8]**.

Complications of breech

Taken from a study which was done in Scotland on breech deliveries, there were likely around 11 (28.0 per 10,000 births) delivery related perinatal and neonatal deaths in women who had a vaginal breech delivery. The risk of death (24.3 per 10,000 births) was the same between women having a prelabor cesarean delivery, yet only roughly 50% of these losses were because of asphyxia. There were four (8.1 per 10,000 births) perinatal and neonatal deaths in the individuals who had an after-labor emergency cesarean delivery and two of these were because of asphyxia. There were seven (3.5 per 10,000 births) perinatal and neonatal deaths in females who had an arranged cesarean delivery. The total risk of asphyxia perinatal death was 25.5 per 10,000 deliveries for women who had a vaginal breech delivery, 12.2 per 10,000 deliveries for women who had an after-labor emergency cesarean delivery, and 4.1 per 10,000 deliveries for females who had an after-labor emergency cesarean delivery **[9]**.

A study in Jima Hospital demonstrates that the total perinatal mortality (intrapartum and early neonatal deaths) in the arranged vaginal delivery in term singleton breech was as high as 253 (0.3%). therefore, the risk of perinatal mortality was extensive in arranged vaginal deliveries, 1 of every 300 deliveries. The total rates of birth injury in the arranged vaginal deliveries was as high as 1 out of 150 (0.7%); the absolute risk of APGAR score <7 was extensive in the arranged vaginal deliveries groups (2.4%). The absolute risk of neonatal asphyxia in the arranged vaginal deliveries was as high as 3.3% **[10; 11]**.

Evaluation of breech

Diagnosis of a breech presentation is made through an abdominal exam using the Leopold maneuvers in combination with the cervical exam, while ultrasound is the confirmatory test.

The Leopold maneuver is used during physical exam in order to palpate hard, round, mobile structure located at the fundus, indicating the head. The inability to palpate a presenting part in the lower abdomen above the pubic bone raise suspicion of a breech presentation of the fetus **[12]**.

Upon cervical examination, findings indicating breech includes the lack of a palpable presenting part, and sometimes a lower extremity may be palpated, usually a foot. In case of the engaged breech, fetal buttocks may be felt as the soft tissue. If the patient is in labor, care must be taken as sometimes the soft tissue of the fetal buttocks may be mistaken as caput of the fetal vertex. I any signs raises a concern, and ultrasound must be performed **[12]**.

The fetal presenting part and lie should be visualized and documented upon performing ultrasound. After diagnosis is confirmed, precise details about the specific type of breech, estimated fetal weight, placental location, the degree of flexion of the fetal head, amniotic fluid volume, and fetal anatomy review should be documented **[13]**.

Management

At the point when an infant is born with bottom first there is more risk that the birth won't be straight forward and that the child can be harmed. For instance, when the infant's head goes through the mother's pelvis the umbilical cord can be compressed which prevents delivery of oxygenated blood to the

infant. Because of this and other risks, babies in breech position are generally delivered by a planned cesarean section in developed countries **[14]**.

Cesarean section lessens the risk of damage or death for the child yet increases danger of harm to the mother compared to vaginal delivery. It is ideal if the infant is in a head down position, so they can be delivered vaginally with lesser risk of harm to both mother and infant. The following section is taking a tool at external cephalic version or ECV which is a technique that can enable the infant to turn from a breech position to a head down position.

Vaginal birth of a breech child has its dangers however cesarean sections are not constantly accessible or possible, a mother may arrive in hospital at a late stage of her labor or may decide not to have a cesarean segment. In these cases, it is imperative that the clinical aptitudes expected to convey breech babies are not lost so moms and children are as protected as possible. Compared with created nations, arranged cesarean areas have not delivered as great outcomes in creating nations - it is proposed this is because of more breech vaginal conveyances being performed by experienced, talented specialists in these settings **[15]**.

Vaginal birth of a breech infant has its dangers yet cesarean sections are not constantly accessible or conceivable, a mother may arrive in hospital at a late stage of her labor or may decide not to have a cesarean section. In these cases, it is critical that the clinical skills needed to deliver breech babies are not lost so that mothers and infants are as safe as can be. Compared with developed nations, arranged cesarean sections have not created as great outcomes as developing nations - it is proposed that this is because of more breech vaginal deliveries being performed by experienced, skilled professionals in these settings **[15]**.

External Cephalic Version

Turning the infant, actually known as external cephalic version (ECV), is when the infant is turned delicately by squeezing the mother's abdomen to push the infant from a bottom first position, to a head first position. ECV does not always work, but rather it improves the mother's odds of giving birth of her infant vaginally and keeping away cesarean section. The World Health Organization advises that women ought to have an arranged cesarean section only if an ECV has been attempted and did not work **[14]**.

women who have an ECV when they are 36– 40 weeks pregnant commonly have vaginal delivery and less inclined to have a cesarean area than the individuals who don't have an ECV. Turning the infant before this time makes a head first birth almost certain however, ECV before the due date can elevate the danger of early or premature birth which can create issues the baby **[14]**.

There are therapies that can be used which may influence the accomplishment of an ECV. Medications called beta-stimulant tocolytics assist the woman's muscles to relax so the pressure amid the ECV does not need to be extensive. Giving the woman these medications before the ECV enhances the odds of her having a vaginal delivery due to the infant is more likely to turn and keep head down. Other therapies, for example, using sound, pain relief medications such as epidural, increasing the fluid around the infant and elevating the quantity of fluids to the woman before the ECV could all effect its success yet there is not sufficient research to make this clear **[16]**.

Turning techniques mother may be able to practice at home are referred to Spontaneous Cephalic Version (SCV), this is when the baby can turn with no medical help. Some of these methods include; a knee to chest position, the breech tilt and moxibustion, these can be done after the mother is 34 weeks through pregnancy. Despite the fact that there is not much proof to help how well these methods function, it has worked for some mothers **[14]**.

Procedure of ECV

Tocolysis to facilitate ECW at term

1. Beta stimulants, including salbutamol, ritodrine, hexoprenaline or terbutaline are commonly used tocolytics. These are normally taken intravenously. possible complications on the mother and infant include tachycardia (increase in heart rate) **[14]**.
2. Calcium channel blockers, such as nifedipine, can be given orally. These medications can be accompanied with hypotension (fall in blood pressure) **[14]**.
3. Nitric oxide donors, for instance intravenous nitroglycerine or sublingual glyceryl trinitrate/nitroglycerine spray have been documented as alternative tocolytics **[17]**.

Vibroacoustic stimulation to facilitate ECV at term

This method is where the fetus is stimulated by usage of sound applied to the mother's abdominal area to provoke the fetus to move out of the midline position. It has been demonstrated in one small trial, which can be found in this review **[18]**.

Regional analgesia to facilitate ECV at term

Regional analgesia involves spinal and epidural anesthesia. Epidural analgesia is a medication that is mixed into the epidural space. Spinal analgesia is when a medication is infused into the cerebro-spinal fluid. In a retrospective cohort study, ECV at term was effective in 59% of 32 women with epidural analgesia, and 24% of 37 women without. In an uncontrolled trial, ECV under epidural analgesia was fortunate in nine (56%) of 16 women in whom beginning endeavors had failed. The frequent adverse effects of these analgesics include hypotension and headaches **[19]**.

Amnioinfusion to facilitate ECV at term
An amnioinfusion is when saline is infused into the amniotic sac to expand the volume of fluid to enable the baby to turn easily. Amnioinfusions should be possible transabdominally or transvaginally. In an uncontrolled trial, six women with failed ECV had a successful recurrent attempt following transabdominal amnioinfusion with 700 ml to 900 ml warmed saline. According to research, no randomized trials to decide the viability of this intervention have been reported **[20]**.

Systemic opioids to facilitate ECV at term

Systemic opioids may assist ECV by relaxing the mother and decreasing her sense of discomfort amid procedure **[20]**.

Twin breech
In twin pregnancies, it is very usual for one or the two fetuses to be in the breech position. Regularly twin fetuses do not get the opportunity to turn around due to being born prematurely. If the two babies are in the breech position and the mother has started labor birth early, a cesarean section might be the best alternative. Around 30-40% of twin pregnancies result in just a single infant being in the breech position. If so, the infants can be born vaginally. After the first infant who is not in the breech position is delivered, the baby who is presented in the breech position may turn itself around, if this does not occur another method may perform called the breech extraction. The breech extraction is the method that includes the obstetrician getting the second twin's feet and pulling him/her into the birth canal. This will help the delivery of second twin vaginally. However, in the event that the second twin is larger than the first, complications with delivering the second twin vaginally may emerge and a cesarean section ought to be performed. At times, the first twin (the twin nearest to the birth canal) can be in the breech position with the second twin being in the cephalic position (vertical). At the point when this happens, dangers of entanglements are higher than normal. Specifically, a drastic complication known as locked twins. This is when the two infants interlock their chins amid labor. At the point when this happens a cesarean section ought to be performed instantly **[21]**.

CONCLUSION:
The most secure mode of delivery in case of breech presentation has for quite some time been a debate in obstetrics. It is advised to carry out elective cesarean section as opposed to vaginal delivery for singleton term breech pregnancies when there is fetal trouble, macrosomia, footling breech presentation, clinically insufficient maternal pelvis, growth-restricted child, placenta previa or fetal anomaly incompatible with vaginal delivery, or if an expert clinician is absent or the physician lacks sufficient expertise for VBD.

REFERENCES:

1. **Hickok DE, Gordon DC, Milberg JA, Williams MA, Daling JR (1992):** The frequency of breech presentation by gestational age at birth: a large population-based study. Am J Obstet Gynecol, 166: 851-852.
2. **Hannah ME, Hannah WJ, Hewson SA, Hodnett ED, Saigal S, Willan AR (2000):** Planned caesarean section versus planned vaginal birth for breech presentation at term: a randomised multicentre trial. Term Breech Trial Collaborative Group. Lancet, 356: 1375-1383.
3. **Zubor P *et al.* (2013):** Repetitive breech presentations at term. Case Rep Obstet Gynecol, 2013: 628572.
4. **Chandler TM, Machan LS, Cooperberg PL, Harris AC, Chang SD (2009):** Mullerian duct anomalies: from diagnosis to intervention. Br J Radiol, 82: 1034-1042.
5. **Moh W, Graham JM, Jr., Wadhawan I, Sanchez-Lara PA (2012):** Extrinsic factors influencing fetal deformations and intrauterine growth restriction. J Pregnancy, 2012: 750485.
6. **Gasim TG (2008):** Preterm singleton breech delivery in a teaching hospital of saudi arabia: vaginal versus cesarean delivery. J Family Community Med, 15: 65-70.
7. **Dilbaz B, Ozturkoglu E, Dilbaz S, Ozturk N, Sivaslioglu AA, Haberal A (2006):** Risk factors and perinatal outcomes associated with umbilical cord prolapse. Arch Gynecol Obstet, 274: 104-107.
8. **Konar, Hiralal (2014):** Dc dutta's textbook of obstetrics (7th ed.): Mcgraw-Hill. p. 376.
9. **Pasupathy D, Wood AM, Pell JP, Fleming M, Smith GC (2009):** Time trend in the risk of delivery-related perinatal and neonatal death

associated with breech presentation at term. Int J Epidemiol, 38: 490-498.

10. **Berhan Y, Berhan A (2014):** Perinatal mortality trends in Ethiopia. Ethiop J Health Sci, 24 Suppl: 29-40.
11. **Berhan Y, Haileamlak A (2016):** The risks of planned vaginal breech delivery versus planned caesarean section for term breech birth: a meta-analysis including observational studies. BJOG, 123: 49-57.
12. **Nassar N, Roberts CL, Cameron CA, Olive EC (2006):** Diagnostic accuracy of clinical examination for detection of non-cephalic presentation in late pregnancy: cross sectional analytic study. BMJ, 333: 578-580.
13. **Fontenot T *et al.* (1997):** Radiographic evaluation of breech presentation: is it necessary? Ultrasound Obstet Gynecol, 10: 338-341.
14. **Hutton EK, Hofmeyr GJ, Dowswell T (2015):** External cephalic version for breech presentation before term. Cochrane Database Syst Rev: CD000084.
15. **Hofmeyr GJ, Hannah M, Lawrie TA (2015):** Planned caesarean section for term breech delivery. Cochrane Database Syst Rev: CD000166.
16. **Cluver C, Gyte GM, Sinclair M, Dowswell T, Hofmeyr GJ (2015):** Interventions for helping to turn term breech babies to head first presentation when using external cephalic version. Cochrane Database Syst Rev: CD000184.
17. **Belfort MA (1993):** Intravenous nitroglycerin as a tocolytic agent for intrapartum external cephalic version. S Afr Med J, 83: 656.
18. **Johnson RL, Elliott JP (1995):** Fetal acoustic stimulation, an adjunct to external cephalic version: a blinded, randomized crossover study. Am J Obstet Gynecol, 173: 1369-1372.
19. **Carlan SJ, Dent JM, Huckaby T, Whittington EC, Shaefer D (1994):** The effect of epidural anesthesia on safety and success of external cephalic version at term. Anesth Analg, 79: 525-528.
20. **Benifla JL, Goffinet F, Bascou V, Darai E, Proust A, Madelenat P (1995):** [Transabdominal amnio-infusion facilitates external version maneuver after initial failure. Six successful attempts]. J Gynecol Obstet Biol Reprod (Paris), 24: 319-322.
21. **Kelsick F, Minkoff H (1982):** Management of the breech second twin. Am J Obstet Gynecol, 144: 783-786.