BREECH BIRTH

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1. Core Definition

A **breech birth** refers to a fetal presentation during delivery in which the fetus enters the birth canal with its buttocks or feet positioned first, rather than the typical and preferred orientation of the head first, known as the cephalic presentation. This atypical positioning is considered a significant variation from the norm and requires careful management due to the inherent mechanical and physiological risks it poses to both the mother and the infant. The presentation is determined by the part of the fetus lowest in the maternal pelvis, known as the presenting part. When the fetus is in a breech position, the largest and least compressible part of the body--the head--is the last to be delivered, which significantly increases the complexity and potential danger of the delivery process.

Statistically, breech presentation is relatively uncommon at term, typically affecting only about 3% to 4% of singleton pregnancies; this aligns closely with the estimate that breech occurs in approximately one out of every 25 babies born. Although the incidence is higher in premature births, many fetuses spontaneously turn to the cephalic presentation between 32 and 36 weeks of gestation. When breech presentation persists into the final weeks of pregnancy, specialized medical intervention is almost always necessary to mitigate heightened risks such as cord prolapse, birth trauma, and fetal asphyxia. The core distinction between a normal birth and a breech birth lies in the sequence of delivery, which fundamentally alters the mechanics of fitting the infant through the bony confines of the pelvis.

The risks associated with breech births are primarily attributed to the potential for the cervix and birth canal to close around the infant's neck before the head has fully descended, a phenomenon termed head entrapment. When the buttocks or feet are delivered first, they may not fully dilate the birth canal sufficiently to accommodate the larger, harder head. Furthermore, the umbilical cord is more susceptible to compression early in the delivery process, leading to a sudden decrease in oxygen supply. Consequently, the management of a persistent breech presentation is one of the most critical decision points in modern obstetrics, often leading to a planned cesarean section to bypass the mechanical challenges of vaginal delivery entirely.

2. Etymology and Historical Development

The term **breech** derives from the Old English word *br?c*, meaning trousers or the posterior garment covering the buttocks, and subsequently refers to the presenting of the baby's posterior anatomy. Throughout history, breech presentation has been recognized across cultures as a perilous situation during childbirth, frequently leading to disastrous outcomes for the infant and often the mother. Early documentation, dating back to ancient Egyptian and Greek medical texts,

highlighted the necessity of skilled attendants to manage these difficult deliveries, often involving complex maneuvers which today are seen as predecessors to modern operative obstetrics.

Before the 20th century, the management of breech presentation was dominated by manual techniques designed to assist the delivery of the fetal head, such as the Mauriceau-Smellie-Veit maneuver or the use of forceps to extract the after-coming head. The development of surgical antiseptics and modern anesthesia in the 19th and early 20th centuries slowly made cesarean delivery a safer alternative, though it was initially reserved for the most dire circumstances. The 20th century saw a major shift in practice, driven by accumulating data suggesting better outcomes for breech babies delivered surgically.

The most pivotal development occurred in the late 20th and early 21st centuries following the publication of major randomized controlled trials, notably the Term Breech Trial (TBT) in 2000. This study, despite subsequent critique regarding its methodology and applicability, fundamentally changed global practice by suggesting that planned cesarean section was safer than planned vaginal birth for the term breech fetus. As a result, the rate of attempted vaginal breech delivery plummeted globally, transforming the management of breech presentation from primarily an operative manual skill to one largely managed by surgical intervention, although some institutions still champion highly selective and monitored vaginal breech delivery protocols.

3. Key Characteristics and Types of Breech Presentation

Breech presentation is not a single entity but encompasses several specific fetal orientations, categorized primarily by the flexion of the fetal hips and knees. The specific type of breech presentation dictates the complexity of the delivery and helps obstetricians determine the optimal management strategy. The primary categories are frank, complete, and incomplete (or footling) breech presentations, each carrying unique risks related to labor progression and potential birth trauma.

Frank Breech: This is the most common type, occurring in approximately 50-70% of all breech presentations. In a **frank breech**, the fetus's hips are flexed, but the knees are extended, meaning the baby's feet are positioned near the head. The buttocks are the presenting part. This position may be somewhat more amenable to vaginal delivery, as the buttocks act as a relatively better dilating wedge than the feet, although it still poses significant risks compared to cephalic presentation.

Complete Breech: In a **complete breech**, both the hips and the knees of the fetus are flexed. The feet and the buttocks are positioned near the birth canal, and both may present simultaneously or alternately. This positioning is generally less common than frank breech and often presents a moderate risk, although the bulk of the fetal presentation usually aids in dilation marginally better than a footling presentation.

Incomplete (Footling) Breech: This is the least favorable presentation for vaginal birth. In an **incomplete or footling breech**, one or both of the fetus's feet are positioned below the buttocks, making the foot or feet the presenting part. The risk of umbilical cord prolapse is significantly elevated in footling breech because the small fetal limb does not fully occupy the space in the lower uterus, leaving room for the cord to slip past and become compressed during labor.

Other anatomical and maternal factors contribute to the persistence of breech positioning. Factors that limit fetal mobility, such as oligo- or polyhydramnios (abnormal amounts of amniotic fluid), uterine anomalies (e.g., bicornuate uterus), and pelvic structural issues (e.g., contracted pelvis), increase the likelihood of breech presentation at term. Additionally, parity (first pregnancy versus subsequent pregnancies) and placental location (e.g., placenta previa) can also influence the fetal lie and presentation, indicating that breech is often a secondary consequence of underlying uterine or placental constraints.

4. Management and Correction: External Cephalic Version (ECV)

The management strategy for a breech presentation at term is multi-faceted, ranging from expectant management to external attempts at repositioning, and ultimately, selection of the safest delivery mode. One critical intervention frequently employed to avoid the risks of breech delivery is the **External Cephalic Version (ECV)**. ECV is a non-surgical procedure performed by an experienced obstetrician, typically after 36 weeks of gestation, wherein manual pressure is applied externally to the mother's abdomen to encourage the fetus to flip from a breech to a cephalic presentation.

The success rate of ECV varies but generally ranges between 50% and 60%, and it is more successful in multiparous women (those who have previously given birth) than in nulliparous women (first-time mothers). Before attempting ECV, maternal and fetal monitoring is essential, and the procedure is usually performed in a hospital setting where an immediate emergency cesarean section can be carried out if complications arise. Tocolytic drugs, such as terbutaline, may be administered to relax the uterine muscles, increasing the chance of a successful maneuver and minimizing discomfort for the mother.

However, ECV is not without risk, although serious complications are rare. Potential risks include premature rupture of membranes, placental abruption, and fetal distress requiring emergency delivery. Therefore, strict contraindications exist, such as situations where a cesarean delivery is already mandatory (e.g., placenta previa, severe fetal growth restriction), multiple gestations, or non-reassuring fetal surveillance tests. If ECV is unsuccessful or contraindicated, the primary decision pivots to choosing between a planned cesarean section or a highly monitored, selective trial of vaginal breech delivery, a choice that depends heavily on institutional expertise and specific maternal and fetal parameters.

5. Risks and Complications

A persistent breech presentation significantly increases the risk profile of labor and delivery, which is why it receives such concentrated clinical attention. As noted in the source content, **breech birth** does substantially increase the risk of **birth injury** compared to cephalic presentation. The underlying mechanism for most serious complications is mechanical entrapment and time-dependent hypoxia.

The most severe risks are related to oxygen deprivation. When the umbilical cord prolapses (slips ahead of the presenting part) or becomes compressed during the descent of the fetal body, the oxygen supply is instantly compromised. This risk is particularly high in footling breech presentations. Furthermore, the passage of the fetal torso may take a considerable time, but once the body is delivered, the head must follow rapidly. If the head becomes momentarily stuck (head entrapment), immediate intervention is required to prevent severe fetal hypoxia and resultant neurological damage, including cerebral palsy or death.

Physical trauma is also a significant concern. Maneuvers required during a manual vaginal breech extraction carry risks of fractures (e.g., humerus or clavicle), damage to abdominal organs, or injury to the nerves of the neck and shoulder (e.g., Erb's palsy). Even when delivered via cesarean section, breech presentation is sometimes associated with prematurity or underlying congenital anomalies, which independently contribute to neonatal morbidity and mortality. Therefore, the decision to proceed with any mode of delivery for a breech baby must carefully weigh the risks inherent to the presentation itself against the risks introduced by the chosen intervention.

6. Significance and Impact on Obstetric Practice

The management of breech presentation represents one of the most impactful and debated areas in contemporary obstetrics. Its significance stems from its relative frequency (though low, it is common enough to be a standard clinical challenge) and the potential severity of poor outcomes when mismanaged. The shift toward nearly universal elective cesarean section for term breech delivery in many developed countries following the Term Breech Trial has profoundly influenced obstetric training and practice.

This clinical impact is twofold: firstly, it has led to a significant decrease in birth trauma and perinatal morbidity associated with complicated vaginal breech deliveries. Secondly, it has resulted in a generation of obstetricians with vastly diminished experience in the complex manual skills required for assisting vaginal breech births. This deficit in expertise has created a cyclical dependency on surgical delivery, as few practitioners feel comfortable offering the trial of labor option, even to carefully selected candidates.

Consequently, breech presentation remains a critical topic for public health discussions regarding

resource allocation (cesarean sections require more hospital resources and carry maternal surgical risks) and the maintenance of clinical skills. Healthcare systems must balance the demonstrated safety benefits of elective surgery for the infant against the long-term risks of increased cesarean rates for the mother, including placental issues in future pregnancies (e.g., placenta accreta). The management of breech presentation is thus a barometer for the broader debate regarding the medicalization of childbirth.

7. Debates and Criticisms

The primary debate surrounding breech birth centers on the question of whether a planned vaginal delivery can be safely offered to carefully selected women, or if planned cesarean section should be the default, mandated choice. This debate was amplified by the Term Breech Trial (TBT), which concluded that planned C-section significantly lowered perinatal mortality and neonatal morbidity compared to planned vaginal delivery.

Critics of the TBT, however, point out several methodological limitations, including the lack of standardized protocol for vaginal delivery in some participating centers and the low number of truly skilled breech practitioners involved in the trial. They argue that the TBT essentially compared highly skilled surgical delivery against often poorly managed or inexperienced vaginal attempts, skewing the results against the vaginal route. Advocates for vaginal breech birth emphasize that for specific low-risk cases--such as a mother who has delivered vaginally before (multiparous), a frank breech presentation, and an estimated fetal weight that is neither too large nor too small--a trial of labor under the supervision of highly experienced staff can result in safe outcomes while avoiding the morbidity associated with major abdominal surgery.

Furthermore, the policy of universal cesarean section eliminates the possibility of spontaneous delivery and creates subsequent risks for the mother in future pregnancies, such as uterine rupture or complications related to placental implantation on the prior uterine scar. Therefore, contemporary guidelines in many countries now advocate for a nuanced approach: planned cesarean delivery is recommended in most cases, but a highly selective offering of a planned vaginal breech delivery may be appropriate in specialized centers where skilled personnel and resources for immediate emergency intervention are guaranteed.

Further Reading

ACOG Practice Bulletin No. 222: Breech Presentation
Wikipedia: Breech Birth
The Term Breech Trial: A Challenge to the Practice of Obstetrics