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# Manual Aid in the Vaginal Delivery of Spontaneous Twin Cephalic-Complete Breech Pregnancy: A Case Report

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***ABSTRACT***
*Multiple gestation, particularly those involving a combination of breech and cephalic presentations, presents a complex obstetric challenge. This case report describes the successful vaginal delivery of a twin pregnancy with mixed presentation at 36/37 weeks of gestation. A 28-year-old woman, G2P1A0, presented in active labor with a cervical dilation of 4 cm. The first twin was in cephalic presentation, while the second was in breech. Following the NICE guidelines for twin delivery with a cephalic-presenting first twin, a vaginal delivery was planned. The first baby was delivered spontaneously. For the second, breech-presenting twin, an amniotomy was performed, followed by a Manual Aid for Breech Delivery, resulting in a safe vaginal birth. Both infants had satisfactory Apgar scores, and the third stage was managed without significant postpartum haemorrhage. This case demonstrates that with careful monitoring and skilled intervention, vaginal delivery is a viable and safe option for twin pregnancies with a cephalic-breech combination, potentially avoiding the need for cesarean section. The successful outcome underscores the importance of preparedness for breech extraction and holistic management during the intrapartum and postpartum periods.*

***Keywords :*** *Spontaneous Twin Pregnancy, Cephalic-Complete Breech, Manual Aid*

## INTRODUCTION

Multiple gestation, which includes pregnancies with both breech and cephalic presentations, is a challenging obstetric situation that requires special attention in labor management. Globally, the incidence of twin pregnancies has increased over the past decades, with rates varying from 6 to 20 per 1,000 births depending on geographic region and maternal demographics (Santana et al., 2016, 2018). The prevalence of multiple pregnancies with breech presentation varies; studies indicate that the frequency of breech presentation at 35-36 weeks of gestation is approximately 4.9%, decreasing to 1.7% beyond 40 weeks (Fitiri et al., 2024). In the context of multiple gestation, the risk of breech presentation can be higher, with approximately 40% of second twins being in a breech position (Priyanka et al., 2022).

The mode of delivery for twin pregnancies, particularly those with breech presentation of the second twin, remains a subject of ongoing debate in obstetric practice worldwide (Bogner et al., 2018; Reitter et al., 2018). According to the World Health Organization (WHO), cesarean section rates for twin pregnancies have increased substantially, with some institutions reporting rates exceeding 75% for twin deliveries (Jonsson, 2015). However, the National Institute for Health and Care Excellence (NICE) guidelines advocate for vaginal delivery in appropriately selected cases where the first twin is cephalic, suggesting that this approach can be safe and may reduce maternal morbidity associated with cesarean section.

Etiological factors in multiple gestation often involve structural anomalies, maternal factors such as uterine shape, and imbalances in amniotic fluid volume (Naz, 2015). Several studies suggest that the presence of two or more fetuses can alter the intrauterine space, thereby contributing to breech presentation (Bogner et al., 2018).

Regarding the mode of delivery, spontaneous vaginal delivery remains a viable option, even

with a breech presentation, provided appropriate conditions are met. One study states that with active management, such as internal version and breech extraction, the need for cesarean section can be reduced (Lindroos et al., 2018; Tasnim et al., 2016). Thus, spontaneous vaginal delivery for a second twin in breech position is also permissible and safe under certain conditions, with favorable success rates (Mei-Dan et al., 2018).

Despite evidence supporting vaginal delivery in selected twin pregnancies with breech presentation of the second twin, there is growing concern about the declining skills in breech delivery management among obstetricians, which has contributed to increasing cesarean section rates. This trend is particularly pronounced in resource-limited settings where cesarean section carries higher maternal risks. The urgency of documenting successful vaginal breech deliveries in twin pregnancies lies in preserving clinical skills, providing evidence-based alternatives to routine cesarean section, and improving maternal outcomes in diverse healthcare settings.

The novelty of this case report lies in the detailed documentation of the decision-making process, technical execution of Manual Aid for breech delivery in the context of twin pregnancy, and successful outcome despite maternal anemia and other risk factors. This case provides a practical clinical example that can serve as a learning tool for training obstetricians and midwives in resource-limited settings where cesarean section may not always be immediately available or may carry higher risks than vaginal delivery.

The objective of this case report is to describe the successful management of vaginal delivery in a twin pregnancy with cephalic-breech presentation using Manual Aid technique. The benefits of this report include: (1) providing clinical evidence that vaginal delivery can be safely achieved in appropriately selected twin pregnancies with breech presentation of the second twin; (2) demonstrating the practical application of Manual Aid technique in twin breech delivery; and (3) contributing to the body of knowledge that supports skill preservation in breech delivery management. The implications extend to clinical practice guidelines, training curricula for obstetric care providers, and informed counseling for women with twin pregnancies regarding delivery options.

## METHOD

This is a descriptive case report of a single patient with twin pregnancy presenting with cephalic-breech presentation who underwent vaginal delivery with Manual Aid for the breech-presenting second twin.

The subject was a 28-year-old woman (G2P1A0) at 36/37 weeks of gestation with twin pregnancy, presenting with spontaneous labor. Inclusion criteria for vaginal delivery included: (1) first twin in cephalic presentation, (2) spontaneous onset of labor, (3) gestational age ≥36 weeks, (4) adequate pelvis on clinical assessment, (5) estimated fetal weight <3500 grams for each twin, and (6) absence of absolute contraindications to vaginal delivery. The patient was managed at [Hospital Name], [City], in April 2025.

Data were collected retrospectively from the patient's electronic medical record, including: (1) demographic information and obstetric history; (2) antenatal care records including ultrasound reports and laboratory results; (3) intrapartum monitoring records including vital signs, fetal heart rate tracings, cervical dilation progress, and labor interventions; (4) delivery records documenting presentations, techniques used, and timing of events; and (5) maternal and neonatal outcomes including Apgar scores, birth weights, and postpartum complications. Photographic documentation of ultrasound findings was obtained with appropriate privacy

protections.

Data were analyzed descriptively and presented in narrative form with supporting tables and figures where appropriate. The case presentation follows a chronological sequence from presentation through postpartum period. Clinical decision-making processes and interventions are explained with reference to current evidence-based guidelines.

Written informed consent was obtained from the patient for the use of her medical information for educational and publication purposes. All identifying information has been removed to protect patient confidentiality. This case report was conducted in accordance with the ethical principles of the Declaration of Helsinki. Given the retrospective, observational nature of this single case report, formal ethical committee approval was not required per institutional policy; however, the case was reviewed and approved for publication by the clinical department.

## RESULT AND DISCUSSIONS

### Case Presentation

The patient (28-year-old) is gravida 2, para 1, abortus 0 (G2P1A0) at a gestational age of 36/37 weeks. She was diagnosed with a Twin Pregnancy, consisting of a Cephalic Presentation and a Transverse Lie, and had entered the first stage of labor. The contractions had been managed by a local midwife at 07:33 WIB, where examination revealed cervical dilation of 4 cm. Consequently, the midwife referred the patient to the hospital. The patient denied any past medical history of hypertension, hyperthyroidism, heart disease, diabetes mellitus, asthma, or allergies.

Her Last Menstrual Period (LMP) was on August 16, 2024, with an Estimated Date of Confinement (EDC) of May 23, 2025. She was not using any contraception prior to this pregnancy. During the antenatal period, she had 6 check-ups with an Independent Practice Midwife (BPM) and 3 consultations with an Obstetrics & Gynecology Specialist. From her previous obstetric history, she delivered her first child 7 years ago at term, with a birth weight of 3200 grams. That delivery was a spontaneous vaginal delivery assisted by a BPM, resulting in a live female infant who remains alive and well.

An ultrasound examination on April 9, 2025, confirmed the twin pregnancy (**Figure 1.**). The Estimated Fetal Weight (EFW) for the first baby was 2022 grams and for the second baby was 1910 grams. Laboratory blood tests from April 26, 2025, revealed several findings, including anaemia (Hb 9.3 gr/dL), leucocytosis (13.37 x $10^3/\mu L$), and an elevated neutrophil percentage (84.3%). Additionally, low Blood Urea Nitrogen (BUN) and Creatinine levels were found, as well as ionized calcium slightly below the normal range.

On examination, the patient was in good general condition and was compos mentis (GCS E4V5M6). Vital signs were as follows: Blood Pressure 120/80 mmHg, Pulse 88 beats per minute, Respiratory Rate 20 breaths per minute, and Body Temperature 36.7°C. Her weight was 69 kg with a height of 152 cm, resulting in a Body Mass Index (BMI) of 29.86 $kg/m^2$. Physical examination of the head, neck, heart, lungs, and extremities revealed no significant abnormalities.

The abdomen was distended longitudinally with striae gravidarum. Leopold's maneuvers indicated a longitudinal lie with a cephalic presentation. The Uterine Fundal Height was 38 cm. The first Fetal Heart Rate (FHR) was 133 beats per minute and the second FHR was 141 beats per minute. The first fetal head was engaged at the pelvic inlet, while the second fetal head was located at the uterine fundus. The patient was in active labor with positive contractions. An internal examination revealed cervical dilation of 4 cm, 50% effacement, cephalic presentation,

and intact amniotic membranes. Labor contractions had commenced on April 26, 2025, at 08:45 WIB.

Based on a comprehensive evaluation, the patient's diagnosis was G2P1A0 at 36/37 weeks of gestation with a twin pregnancy, cephalic/breech presentation, in the active phase of the first stage of labor. The management plan included close monitoring of her general condition, uterine contractions, fetal heart rates, vital signs, and cervical dilation, along with preparation for a vaginal delivery.

The delivery proceeded spontaneously with different presentations for each fetus. Second Stage for First Baby commenced at 11:40 WIB with a cephalic presentation. A live female infant weighing 2100 grams, measuring 43 cm in length, with an Apgar score of 7-8, was delivered at 11:50 WIB. The amniotic fluid was clear, and no congenital abnormalities were noted.

Second Stage for Second Baby commenced at 12:00 WIB. A vaginal examination confirmed a breech presentation. Following an amniotomy, the second baby was born alive at 12:10 WIB. This live female infant, weighing 2200 grams, measuring 43 cm, with an Apgar score of 6-7, was delivered with the assistance of Manual Aid for Breech Delivery. Both babies were delivered with a spontaneous medial perineal tear measuring 5 cm in length.

The third stage was brief; the placenta was delivered spontaneously and completely at 12:15 WIB. A single, monochorionic placenta for both twins was secured, weighing 500 grams. Postpartum haemorrhage was 250 cc with good uterine contraction. A second-degree episiotomy was repaired (sutured) using chromic catgut suture.

During the fourth-stage monitoring until 12:30 WIB, the uterine fundus was located 2 fingerbreadths below the umbilicus, uterine contraction remained good, and an additional 50 cc of bleeding was recorded. Overall, this twin delivery was conducted without complications and was managed by the same operator.


**Figure 1. Ultrasound findings of twin fetus on April 9, 2025**

**Discussion**

Twin pregnancies present unique challenges in obstetric management, requiring careful consideration of multiple factors including fetal presentation, gestational age, maternal conditions, and available resources. According to the latest guidelines from the National Institute for Health and Care Excellence (NICE), for twin pregnancies with the first twin in a cephalic position, vaginal delivery is preferred, provided there are no significant complications (Gibson et al., 2019). The NICE guidelines specifically state that the presentation of the second twin should not be an absolute contraindication to vaginal delivery, as experienced operators can safely manage breech extraction or internal version with breech extraction when necessary. In this case, despite certain risks and conditions such as maternal anemia (Hb 9.3 g/dL) and leukocytosis, the delivery proceeded without serious complications. Both infants were born alive with adequate Apgar scores, indicating that the obstetric interventions applied were appropriate (Ylilehto et al., 2024).

***Analysis of Success Factors***

Several key factors contributed to the successful vaginal delivery in this case. First, appropriate patient selection was crucial—the first twin was in cephalic presentation with an engaged fetal head, the gestational age was favorable at 36/37 weeks, and estimated fetal weights were within manageable ranges (2022g and 1910g respectively). These selection criteria align with evidence-based recommendations for vaginal twin delivery. Second, operator skill and experience in breech delivery techniques were essential. The attending obstetrician possessed competency in Manual Aid for breech delivery, a skill that is unfortunately declining in many settings due to rising cesarean section rates. Third, maternal pelvic adequacy was confirmed through clinical assessment, with the patient's previous successful vaginal delivery of a 3200g infant providing reassuring evidence of adequate pelvic capacity. Fourth, continuous fetal monitoring throughout labor allowed for timely intervention if fetal compromise had occurred. Finally, the availability of immediate cesarean section capability provided a safety net, though ultimately it was not required.

***Technical Analysis of Manual Aid Procedure***

The Manual Aid (MA) procedure was crucial in managing the breech presentation of the second twin. Following the delivery of the first twin at 11:50 WIB, a 10-minute interval was allowed before initiating the second stage for the second twin at 12:00 WIB. This interval allowed for uterine recontraction while avoiding prolonged inter-twin delivery time, which has been associated with increased neonatal morbidity. Several studies suggest that inter-twin delivery intervals of 10-30 minutes are generally safe, with increased risks beyond 30 minutes (Lindroos et al., 2018; Mok and Lo, 2022).

The decision to perform amniotomy for the second twin was made to facilitate controlled descent and prevent complications such as cord prolapse. Once breech presentation was confirmed by vaginal examination, the Manual Aid technique was employed. This technique involves controlled delivery of the breech with gentle traction coordinated with maternal expulsive efforts, delivery of the lower extremities, followed by assisted delivery of the shoulders and finally the head using either Mauriceau-Smellie-Veit maneuver or forceps to the aftercoming head if needed. The entire procedure from amniotomy to delivery took 10 minutes, resulting in a live infant with Apgar scores of 6-7, which is acceptable for breech delivery.

Safety measures during the procedure included continuous fetal heart rate monitoring,

ensuring adequate uterine contractions to facilitate descent, maintaining maternal hydration and positioning for optimal pelvic diameters, having experienced nursing staff prepared for neonatal resuscitation if needed, and maintaining readiness for emergency cesarean section should complications arise. The successful execution of MA without maternal or fetal trauma demonstrates that with appropriate training and preparation, this technique remains a valuable skill in modern obstetric practice.

***Management of Maternal Anemia and Associated Challenges***

The patient's preexisting anemia (Hb 9.3 g/dL) presented a significant concern in the context of twin delivery, given the increased risk of postpartum hemorrhage. Anemia in pregnancy is associated with increased maternal morbidity, reduced tolerance to blood loss, and potential complications including need for blood transfusion, maternal fatigue, and delayed recovery. In this case, several strategies were employed to mitigate risks: first, the patient was counseled regarding the increased risk and the importance of immediate postpartum monitoring; second, intravenous access was secured early, and blood products were made available if needed; third, active management of the third stage was planned, including administration of oxytocin immediately following placental delivery; fourth, meticulous attention was paid to uterine tone throughout the fourth stage; and finally, the patient was monitored closely for signs of hemodynamic instability.

The total estimated blood loss of 300 cc (250 cc plus 50 cc during fourth stage) was within acceptable limits, likely due to the combination of good uterine contractility, active management, and the relatively rapid delivery process. The leukocytosis (13.37 x $10^3/\mu L$) with elevated neutrophils (84.3%) observed in the laboratory results could represent either physiological changes of late pregnancy and labor, or subclinical infection. The absence of fever, foul-smelling discharge, or maternal tachycardia suggested that infection was unlikely. Nevertheless, postpartum monitoring included surveillance for signs of endometritis or other infectious complications.

Had significant postpartum hemorrhage occurred in this anemic patient, the management protocol would have included: immediate uterine massage and bimanual compression, bolus oxytocin administration followed by continuous infusion, examination for retained placental fragments or genital tract trauma, consideration of additional uterotonics (methylergonovine, carboprost, or misoprostol), aggressive fluid resuscitation, urgent blood transfusion with consideration of massive transfusion protocol if bleeding continued, and surgical intervention (including B-Lynch suture, uterine artery ligation, or hysterectomy) if medical management failed. The patient's anemia would have necessitated a lower threshold for blood transfusion and more aggressive early intervention.

In multiple gestations, medical personnel must be attentive to risks associated with fetal lie and presentation, particularly when there is a shift between cephalic and breech positions, as occurred with the second twin. The management of this delivery mode is crucial, as several studies indicate that the success of vaginal delivery in twin pregnancies can be influenced by fetal position (Zhang et al., 2025; Ylilehto et al., 2024). Recent evidence suggests that planned vaginal delivery for twin pregnancies with a cephalic first twin results in similar neonatal outcomes compared to planned cesarean section, while offering advantages in terms of maternal morbidity and recovery time. A large randomized controlled trial, the Twin Birth Study, found no significant differences in neonatal death or serious neonatal morbidity between planned vaginal delivery and planned cesarean section when the first twin was cephalic. The management performed,

consisting of amniotomy and manual aid for the second twin delivered in a breech position, also reflects the importance of adequate preparation and medical knowledge in managing such situations (Zhang et al., 2025; Ylilehto et al., 2024).

This intervention is often necessary in situations where instrumental assistance is not feasible and the fetus is in a less favorable position. The use of MA techniques to assist breech delivery is well-established and accepted in clinical practice, particularly in twin pregnancies where complexity is increased. Several studies show that MA can increase the likelihood of a successful birth and reduce the risk of complications for both the mother and the infant ("The Use of Simulation in Midwifery Clinical Education", 2023; Wesnes et al., 2017). Training programs using simulation have been shown to improve provider confidence and competence in performing breech delivery, suggesting that institutions should invest in maintaining these skills among obstetric care providers.

During the third stage of labor, the placenta was delivered spontaneously, with an estimated postpartum blood loss of 250 cc. Postpartum hemorrhage is a potential complication, especially in twin deliveries (Biswas et al., 2018; Shibata et al., 2025). However, in this instance, uterine contraction was adequate, and management via a second-degree episiotomy was performed to address perineal laceration and minimize the risk of infection while accelerating the mother's recovery process (Shibata et al., 2025). The finding of a monochorionic placenta in this case is noteworthy, as monochorionic twin pregnancies carry additional risks including twin-to-twin transfusion syndrome. However, the similar birth weights (2100g and 2200g) and absence of significant growth discordance suggest that this pregnancy was not complicated by twin-to-twin transfusion syndrome.

During the fourth-stage postpartum monitoring, the mother's condition was stable, with the uterine fundus noted to be two fingerbreadths below the umbilicus and with ongoing uterine contractions. This indicates that postpartum management was effective and demonstrates that post-delivery monitoring in a hospital setting can help identify and manage potential issues that may arise (Altay et al., 2024). A sound knowledge of postpartum monitoring and complication management plays a vital role in ensuring the safety of both the mother and the infant, particularly in high-risk twin pregnancies (Rissanen et al., 2023).

**Implications for Clinical Practice and Policy**

This case report has several important implications for clinical practice and healthcare policy. First, it reinforces the need for ongoing training in breech delivery techniques, including Manual Aid, particularly given the declining exposure to vaginal breech delivery in many training programs. Simulation-based training programs should be implemented to maintain and develop these critical skills among obstetricians and midwives. Second, protocols for management of twin pregnancies should be developed or updated in resource-limited settings, incorporating evidence-based criteria for patient selection for vaginal delivery and clear algorithms for intrapartum management including indications for conversion to cesarean section. Third, counseling for women with twin pregnancies should include balanced information about delivery options, acknowledging that vaginal delivery can be safe and appropriate in selected cases, rather than defaulting to cesarean section. Fourth, quality improvement initiatives should monitor outcomes of twin deliveries stratified by mode of delivery and presentation to identify areas for improvement and ensure that vaginal delivery remains a safe option where appropriate. Finally, healthcare systems should ensure availability of experienced personnel and appropriate resources

(including immediate cesarean section capability) when planning vaginal delivery of twin pregnancies.

**Limitations**

This case report has several important limitations that must be acknowledged. First, as a single case study, the findings cannot be generalized to all twin pregnancies with breech presentation of the second twin. Individual patient characteristics, operator experience, and facility resources significantly influence outcomes. Second, the successful outcome in this case reflects the specific circumstances including operator skill level, appropriate patient selection, and availability of immediate backup options. Outcomes may differ substantially when performed by less experienced operators or in facilities without neonatal intensive care unit (NICU) capabilities or immediate cesarean section availability. Third, this report does not include long-term follow-up of the infants, so we cannot comment on developmental outcomes or late complications. Fourth, the retrospective nature of this case report limits the ability to assess certain aspects of decision-making and intrapartum management that may not have been fully documented in the medical record. Finally, successful outcomes in single cases do not establish causation or prove superiority of one management approach over another—randomized controlled trials and large observational studies remain necessary to establish evidence-based guidelines. Despite these limitations, detailed case reports remain valuable for documenting clinical techniques, preserving institutional knowledge, and contributing to the broader literature on management options for complex obstetric scenarios.

## CONCLUSION

Vaginal delivery was chosen following NICE guidelines for twin pregnancies where the first fetus is cephalic and no absolute indications for cesarean section exist. The main challenge was managing the second fetus in breech presentation, successfully addressed using the well-established Manual Aid (MA) technique. This intervention facilitated a safe vaginal birth for the breech second twin, avoiding forceps, vacuum extraction, or emergency cesarean, with both infants born healthy as indicated by adequate Apgar scores. This case supports that, with careful patient selection, skilled practitioners, proper facilities, and vigilant monitoring, vaginal delivery remains a safe and viable option in cephalic-breech twin pregnancies. Future research should explore standardized training programs and long-term outcomes of Manual Aid use across diverse healthcare settings to enhance skill preservation and optimize delivery methods.

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