

Vaginal breech delivery seen from a different perspective – a case series

Parto pélvico vaginal visto de uma perspetiva diferente – uma série de casos

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Abstract

Term breech presentation is a common indication for cesarean delivery. However, concern over the implications of planned cesareans on maternal morbidity and complications for future pregnancies as well as the limitations attributed to the Term Breech Trial have shed new light on the vaginal breech delivery, with different approaches being attempted. We report three cases of term vaginal breech delivery in the upright position, one of them requiring Piper's forceps for fetal head delivery. No other relevant complications occurred. As with deliveries in lithotomy position, clinical expertise and case selection are prerequisites for favorable maternal and neonatal outcomes.

Keywords: Breech Presentation; Vaginal Delivery.

INTRODUCTION

Delivery of the term breech fetus has been a controversial issue in modern Obstetrics. The Term Breech Trial (TBT), published in 2001, caused a major change in practice with cesarean section becoming the preferred mode of delivery^{1,2}. However, methodologic limitations found in the TBT and growing concern over the implications of a planned cesarean delivery in future pregnancies have brought back awareness to the vaginal breech delivery³⁻⁶.

Vaginal delivery of the breech fetus is commonly performed in lithotomy position, although most guidelines are not strict concerning positioning⁷⁻⁹. Obstetricians are trained to assist deliveries in this position and, if required, several maneuvers are described to solve potential complications⁹. Yet, new techniques for the vaginal delivery of the breech fetus have been described and attempted, such as the delivery in the upright position described by Frank Louwen^{10,11}. A recent Cochrane

review on maternal position during second stage in women with epidural analgesia considers as upright all positions in which the main axis of the parturient's body is more than 45 degrees from the horizontal plane¹².

We present 3 cases of vaginal breech delivery in the upright position performed at our hospital (Table I).

CLINICAL CASES

Case 1

Thirty-two-year old nulliparous woman admitted in labor at 38 weeks and 3 days. She was healthy and had a pre-pregnancy body mass index (BMI) of 20.6. The pregnancy was uneventful with a fetal growth estimate on the 50th centile at 32 weeks of gestation and there was no external cephalic version trial. At admission she was 6cm dilated, with complete breech presentation and, after discussion of mode of delivery, she opted for a vaginal delivery. She had epidural analgesia. The second stage of labor took place in the operating room under an oxytocin infusion and with the parturient kneeling and with her hands on the elevated head of the delivery bed. An episiotomy was performed. Delivery

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TABLE I. SUMMARY OF THE THREE CASES OF VAGINAL BREECH DELIVERY IN THE UPRIGHT POSITION

Case	Parity	Gestational age (weeks + days)	Induction of labor	Maneuvers needed	Perineal trauma	Birthweight (g)	Apgar score (1st, 5th and 10th minutes)	NICU admission
1	0	38+3	No	Piper's forceps	Bilateral episiotomy	2830	3/9/10	No
2	2	39+4	Yes	None	None	2560	9/10/10	No
3	0	39+5	No	Frank nudge	Episiotomy	2905	9/10/10	No

NICU – Neonatal intensive care unit.

of the fetal body was spontaneous. Triple nuchal cord was identified. The head did not deliver spontaneously and the Frank nudge maneuver, described by Frank Louwen, was tried without success. Assuming head entrapment, the parturient was placed in lithotomy position and the Mauriceau-Smellie-Veit maneuver was performed, but also unsuccessful. The cord was clamped and cut, Piper's forceps were applied and a contralateral episiotomy was performed, leading to successful delivery of the head. Birthweight was 2830g. Apgar score was 3/9/10 at 1st, 5th and 10th minute respectively and the umbilical cord blood acid-base analysis revealed a pH of 7.204 with a base excess of -9.7. Besides postpartum anemia (postpartum hemoglobin 9.6g/dL), there were no other maternal complications. Due to jaundice requiring phototherapy, the newborn was discharged only at the seventh day of life. No other neonatal complications occurred and, at 3 years of age, psychomotor development is normal.

Case 2

Thirty-six-year old multiparous woman with two previous normal vaginal deliveries (birthweight 2850g and 3250g) admitted for labor induction at 39 weeks and 4 days. Previously healthy and with a pre-pregnancy BMI of 17.2, she had an uncomplicated pregnancy with an unsuccessful external cephalic version trial. The estimated fetal weight at 36 weeks was in the 12th centile. At admission, the fetus was in frank breech presentation and the cervix was 1cm dilated. Oxytocin was used for labor induction. She had epidural analgesia and delivered spontaneously in the upright position, on her knees and leaning on the headboard. Delivery took place in a delivery room equipped for emergent cesarean deliveries, but no maneuvers were re-

quired. There was no need for episiotomy and no perineal trauma ensued. The newborn weighted 2560g and Apgar score was 9/10/10 at 1st, 5th and 10th minute, respectively. No maternal or neonatal complications occurred. The baby is currently healthy, presenting normal development at two and a half years old.

Case 3

Thirty-five-year old healthy nulliparous woman admitted in labor at 39 weeks and 5 days with a frank breech fetus. Pre-pregnancy BMI was 19. No pregnancy complications were reported and, at 35 weeks, estimated fetal weight was in the 27th centile. External cephalic version was tried and unsuccessful. At admission she was 5cm dilated and opted for a vaginal delivery. She had epidural analgesia and an oxytocin infusion was started during second stage. Delivery occurred in a delivery room equipped for emergent cesarean deliveries with the woman on her knees and leaning on the headboard. An episiotomy was performed and fetal body was delivered spontaneously. Frank nudge was used for delivery of the head as spontaneous delivery did not occur with maternal pushing. Birthweight was 2905g and Apgar score was 9/10/10 at 1st, 5th and 10th minute, respectively. There were no maternal or neonatal complications. Today, at two years old, the baby is healthy with normal development.

DISCUSSION

We report three cases of successful vaginal breech delivery in the upright position, only one of them requiring change in position for delivery of the head.

Although it is currently standardized, vaginal delivery did not always take place with the woman in

lithotomy position^{13,14}. Recent magnetic resonance imaging (MRI) pelvimetry studies have shown that the kneeling-squat position can significantly increase maternal pelvic diameters¹⁵. Such position is comparable to the McRoberts' maneuver, known to flatten the sacral promontory and used to solve shoulder dystocia in cephalic vaginal deliveries¹⁶. Besides changing pelvic dimensions, maternal upright positioning, such as sitting, squatting, standing or staying on all fours with the upper body elevated, promotes the effect of gravity on fetal descent, creates a straighter passage for the fetus and decreases aortocaval compression¹⁰.

Based on these arguments, Frank Louwen developed a new technique to perform vaginal breech deliveries, having the woman assume an upright position^{10,11}. Maneuvers for assisting the delivery in the event of extended arms or trapped aftercoming head were described by the author¹⁰. In the latter, the Frank nudge maneuver tried in case 1 and successfully used in case 3, the fetal shoulders are pushed against the maternal symphysis promoting the flexion of the head.

Compared to delivery in lithotomy position, the new technique required less maneuvers to deliver the fetus and was associated with less neonatal morbidity^{10,17}. Second stage of labor was also shorter when the woman delivered in the upright position¹⁰. Vaginal breech deliveries in the upright position had similar neonatal outcomes when compared to planned cesarean deliveries¹⁰.

As with lithotomy position vaginal breech delivery, appropriate case selection and clinicians' expertise in vaginal breech delivery play a major role on a successful outcome^{18,19}. Maternal wish for a vaginal delivery is a quintessential requirement in case selection as is the exclusion of contraindications for vaginal delivery. Most authors recommend assessment of fetal weight, while some also consider performing x-ray or MRI pelvimetry, in which several pelvic measurements, such as the *conjugata vera* and the interspinous diameter have been considered predictors of success^{18,20}. Others defend that, in the lack of contraindications for vaginal delivery, favorable progress of labor is the best predictor of success²¹. An adequate setting is also required. Continuous heart rate monitoring as well as the conditions and team available for an emergent cesarean delivery, should it be needed, are mandatory. Furthermore, a neonatologist should also be available. Regardless of maternal position, all these conditions should be reunited for a safe delivery⁹.

Some peculiarities pertaining to the cases present-

ed must be pointed out. The two authors were always members of the labor ward team assisting all three deliveries. The first author has learned from Frank Louwen the technique and maneuvers required for vaginal breech delivery in the upright position. The second author has vast experience assisting vaginal breech deliveries in the conventional lithotomy position. The fact that case number 1 was the first vaginal breech delivery in the upright position we performed at our hospital might have influenced the management of head entrapment, as it was also the first time dealing with such a complication in this position. All women were highly motivated for a vaginal delivery and gave their consent for delivery in the upright position. They were also informed that a change in position could occur during delivery. Prior to delivery and during the course of labor, the team assessed all cases for contraindications for vaginal delivery and established a plan for effective management of complications that could ensue. No radiologic pelvimetry studies were carried out. All deliveries occurred with continuous fetal heart monitoring. If signal loss was frequent after rupture of membranes, the team resorted to internal monitoring by placing an internal lead in the fetal buttock.

While the three cases presented resulted in good outcomes for both mothers and newborns and delivery in the upright position is frequently entirely spontaneous, it also requires, as with delivery in lithotomy, expertise in management and assistance.

The current text presents a small case series. However, its publication represents an opportunity to support vaginal breech deliveries. Moreover, in the era of patient-centered medicine, when decisions are shared and parturients' preferences matter, this case series presents the use of a new technique in Portugal and its favorable outcomes.

In conclusion, we consider that, in the appropriate setting, vaginal breech delivery, either in lithotomy or upright position and upon careful selection of cases, should be given a new chance.

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