

EFFICACY OF EXTERNAL CEPHALIC VERSION IN PATIENTS PRESENTING WITH BREECH PRESENTATION AT TERM

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ABSTRACT

Objective: To determine the efficacy of external cephalic version in patients presenting with breech presentation at term.

Materials and Methods: The descriptive cross sectional study was carried out at in department of gynecology & obstetric, Sohar Hospital, Ministry of Oman From 7th Nov 2018 to 6th May 2019 over 57 patients with fetus with a breech position or side-lying (transverse) position into ahead-down (vertex) position. ECV was applied and efficacy was noted in term of normal vaginal birth. Data were analyzed in SPSS version 20

Results: A total of 57 patients with recur breech presentation at term were included in the study. Average age of the patients was 27.29 years + 7.39SD. The efficacy of external cephalic version in term of fetal live birth through normal vaginal delivery was observed in 34 (59.65%).

Conclusion: We concluded that ECV is effective in term of normal vaginal birth at term in patients with breech or transverse into a head-down (vertex) position.

Keywords: Breech, Efficacy, Term, ECV, Cephalic

INTRODUCTION

Breech presentation complicating up to 4% of all term deliveries has been an obstetrical challenge as usual management options were either breech vaginal births or caesarean sections; both being associated with significant foetal & maternal risks. Once popular in 1970, External cephalic version (ECV) has resurfaced as valuable manoeuvre with an aim of not only reducing the incidence of breech at term but also to avoid foetal and maternal risks. This procedure should be offered to all the women with breech at term having no contraindications to the procedure or vaginal birth.

This is manipulative trans-abdominal conversion of fetus from non-cephalic to cephalic presentation.

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Breech incidence at term is 3% to 4% and even higher than this for preterm deliveries.¹ Vaginal breech delivery is associated with 3 to 4 times increased incidence of perinatal mortality. Infants born by breech vaginal delivery may have lower APGAR score than normal, birth injuries, mental retardation, cerebral palsy and learning disabilities; although proportion of complications attributable to prematurity and route of delivery is not clear.²

Successful external version to cephalic presentation helps women preclude need for caesarian section; one of the important contributory factors to post-partum morbidity. The rapid rise in frequency of caesarean section in US in past 20 years is mainly attributed to rise in rate of primary caesarean sections.^{3,4} The 3rd most important indication for caesarean after previous caesarean and labour dystocia is breech presentation. Out of this 90% being delivered by planned sections.^{5,6} In US 12% of all caesarean deliveries are carried out for breech presentation

excluding previous caesarean sections for breech.⁷
⁸ The high frequency of operative delivery leading to increase in rate of maternal morbidity may be deductible from adherent placenta, uterine rupture and maternal haemorrhage in subsequent pregnancies.^{8,9} The one fifth of all primary caesareans are attributable to breech presentations.^{7,10} Caesarean section is favourable route of delivery in breech presentations in developed and developing countries probably because of better neonatal outcomes compared with breech vaginal birth.^{11,12,13}

External cephalic version is such a method in which the position of the breech fetus is changed to a desirable cephalic position externally by working on women's abdomen. This procedure is used in non-labouring women in order to make the vaginal cephalic birth possible. It is an elective procedure that is most of the time opted by well informed and well encouraged women who believe in it as being safe and desire for vaginal birth.¹⁴ It is rejected and caesarean is favoured by only those women who don't have enough awareness about it and are afraid of it.

Its effectiveness is evident from the fact that it decreases the number of caesarean deliveries by repositioning foetus in cephalic presentation at birth. ECV at term reduces the incidence of non-cephalic presentation at delivery (RR 0.38%, 95% CI 0.18-0.80, risk difference 52 %, NNT 2) ECV helps lower caesarean section rate by reducing incidence of breech presentation (RR 0.55, 95 % CI 0.33-0.91, risk difference 17%, NNT 6). The efficacy of external cephalic version was observed in 82.27%.¹⁵

In a Cochrane review to asses ECV for breech presentation at term, there was more than 50 % decline in non –cephalic births and one third decline in caesarean deliveries (7 trial 1245 women, non-cephalic birth risk ratio [RR] 0.46, 95% confidence interval [CI] 0.31-0.66; and caesarean section RR 0.63, 95% CI, 0.44-0.90). A systemic review of 8 trials including 1308 women demonstrated that ECV at term reduces non-cephalic presentation at delivery (RR 0.42, 95% CI 0.92-0.61). A systemic review demonstrated that doing ECV at term reduces the chance of caesarean deliveries (RR 0.57, 95% 0.40-0.82)¹⁶

The advantage of ECV is to minimize perinatal mortality and morbidity in terms of poor APGAR score, intracranial hemorrhage, cord prolapse/com-

pression, visceral injury, fractures of long boons, brachial plexus injury, hip dislocation, medullary coning and tentorial tears. Another advantage of ECV is to avoid need for elective and emergency caesarean section; associated its own risks.

MATERIAL AND METHODS

The cross sectionanl study was conducted over 57 patients after approval from hospitals ethical and research committee and was conducted in department of gynecology & obstetric, Sohar Hospital, Ministry of Oman From 7th Nov 2018 to 6th May 2019. All those patients who had previous successful ECV when come in labor, were reassert in details in terms of history relevant examination in and untrasonographic evolution to reconfirm her cephalic presentation. The patient who were deliver by C/section for breech presentation due to spontaneous reversion to breach after successful ECV or breech vaginal birth were also included in study to know about the efficacy of ECV. Those patients who underwent induction of labor for prolonged pregnancy after ECV was also included.

Bias was controlled by excluding Patients like Breech presentation in advanced labor, multiple pregnancy, breech presentation with premature rupture of membranes, Uterine anomalies (unicornuate, bicornuate or septate uterus), evidence of nuchal cord in fetus, aberrant amniotic fluid volumes especially Oligohydrannio, fetal Macrosomia, cord presentation and Obesity.

All pregnant women with breech presentation at term meeting the inclusion criteria were enrolled in the study through OPD mainly. The purpose, benefits, risks and complication of the procedure was fully explained to patient and were informed about research and data publication. After taking Informed consent patients were undergone through ECV(procedure of turning a fetus from a breech position or side-lying (transverse) position into a head-down (vertex) position through maternal abdominal wall at non laboring patients to facilitate normal vaginal birth) and efficacy in term of normal vaginal birth was noted.

Data were analyzed in SPSS version 20 . Mean ± standard deviation were calculated for quantitative variables. Frequency and percentages were calculated for categorical variables.

RESULTS

A total of 57 patients presenting with breech presentation at term were included in the study. Average gestational age was 38.74+1.06SD, mean number of gravida and body mass index were 2.09+1.46SD, 1.65+0.89SD and 20.64+2.37SD respectively.

Average age of the patients was 27.29 years+7.39SD with range 16-42 years. Patient’s age was divided in four categories, out of which most common age group for patients with breech presentation was 21-30 years. There were 9(15.8%) patients were of the age less than 20 years. Twenty Nine (50.9%) patients were in the age range of 31-40 years, 17(29.8%) were of age range 30-40 years and 2(3.5%) presented at age more than 40 years of age.

The efficacy of external cephalic version in term of fetal live birth through normal vaginal delivery was observed in 34(59.65%) while in 23(40.35%) patients showed failed procedure. (Figure 1)

Age wise stratification shows that efficacy of external cephalic version in younger age was little bit high as that of old age but it was statistically insignificant with p-value 0.832. The patients having age less than or equal to 20 years of age have efficacy 55.6% while no efficacy was 44.4%, age 21-30 years contain 65.5% efficacy and 34.5% shows no efficacy, 31-40 years age groups gave 52.2% efficacy with 47.1% no efficacy and patients having more than 40 years of age have 50% efficacy while 50% have non efficacy of external cephalic version in patients with a presentation of breech baby . Stratification of efficacy over Type of breech, education, BMI and gestational age also shows that efficacy was high in lower stages but statistically these were also insignificant except gestational age where external cephalic version not showed efficacy in patients presenting gestational age of less than 39 weeks of gestation. (Table 1)

DISCUSSION

External Cephalic Version (ECV) has been practiced since the time of Aristotle (384–322 BC). However, external version eventually fell out of favour as a result of several concerns: firstly, its high rate of spontaneous reversion if performed before 36 weeks of gestation, secondly, possible foetal complications, and thirdly, the assumption that an external version converts only those foetuses to vertex that would have converted spontaneously anyway. By the

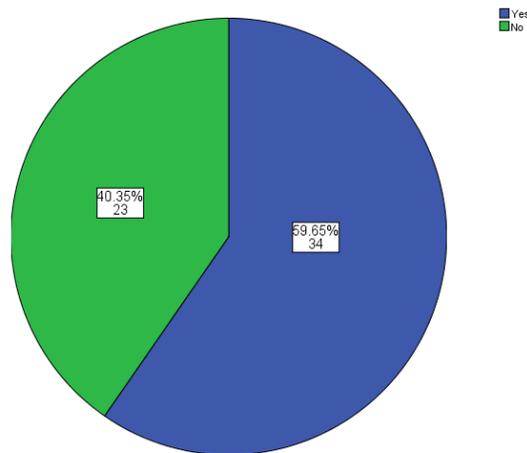


Fig 1: Efficacy of External Cephalic Version

Table 2: Stratification of efficacy over education, gestational age, gravida and body mass index

		Efficacy		p-value	
		Yes	No		
Type of Breech	Complete	16	5	120	
		76.2%	23.8%		
	Incomplete	10	8		
55.6%		44.4%			
Frank	8	10			
	44.4%	55.6%			
Gestational Age (in weeks)	<= 39	20	20	0.23	
		50.0%	50.0%		
	40+	14	3		
82.4%		17.6%			
Gravida	<= 4.00	33	21		0.340
		61.1%	38.9%		
	5.00+	1	2		
33.3%		66.7%			
BMI(K-g/m)	<= 21.00	22	18	0.272	
		55.0%	45.0%		
	22.00+	12	5		
		29.4%			

1960s, breech foetuses were delivered by vaginally. By the 1970s, studies suggested vaginal breech delivery is more hazardous for the baby both in terms of morbidity and mortality.¹⁷

Breech presentation at term occurs in 3-4% of pregnancies and is managed with elective cesarean, assisted vaginal delivery, or external cephalic version (ECV).^{18,19} Breech presentation is the third most com-

mon indication for cesarean and in some hospitals breech presentations are managed exclusively by cesarean delivery.^{20,21}

The success rate of ECV has been reported to range from 25% to 97%. Our success rate of 44% is close to the typical success rate of 50%.¹⁰ The high proportion of vaginal deliveries in the successful ECV group attests to the favourable impact that ECV is likely to have on the caesarean section rate for breech presentation.

Thirty four out of the 57 patients who were followed up after a successful ECV had a normal vaginal delivery in our study. This is in concordance with other studies exhibiting²² successful pregnancy outcome after ECV. However, certain other studies show that pregnancies after a successful external cephalic version at term are not the same as those with cephalic presentation. They are at higher risk of both dystocic labor and fetal distress and therefore require close²³ intrapartum monitoring.

External cephalic version (ECV) is another option for foetuses with breech presentation at term. A meta-analysis of six randomised controlled trials has found it effective in reducing the number of vaginal breech deliveries by 87% and caesarean sections by 64%.²⁴ No significant increase in foetal or maternal mortality or morbidity following ECV has been found, though numbers may have been too small to reliably detect changes in perinatal morbidity or mortality.²⁵

Results vary from 30% up to 80% in different series.²⁶⁻²⁹ Race, parity, uterine tone, liquor volume, engagement of the breech and whether the head is palpable, and the use of tocolysis, all affect the success rate.^{29,30} Published individual success rates may vary because of case selection as well as these factors. The highest success rates are seen with multiparous, non-white women with a relaxed uterus, where the breech is not engaged and the head is easily palpable. Success rates are also higher with increasing liquor volume^{27,31} but, in practice, very high liquor volume may be associated with spontaneous reversion. Maternal weight, placental position, gestation, fetal size and position of the legs make less difference and are probably not independent of other factors.²⁹

In 2016, the American College of Obstetricians

and Gynecologists (ACOG) reported an average ECV success rate of 58% (range, 16% to 100%).³² ACOG noted that, with transverse lie, the success rate was significantly higher.

Other studies have found a wide range of rates 58% in 1,308 patients in a Cochrane review by Hofmeyr and colleagues³³; 47% in a study by Beuckens and colleagues³⁴; and 63.1% for primiparas and 82.7% for multiparas in a study by Tong Leung and colleagues.³⁵ These rates were affected by whether ECV was performed with or without tocolysis, with or without intravenous analgesia, and with or without neuraxial analgesia/anesthesia.

The favourable ECV success rate we achieved could be attributed to the fact that most patients were multiparous. It may also reflect the importance of adhering to strict patient selection criteria for the procedure. The use of ultrasound facilitated ECV and is highly recommended.³⁶

CONCLUSION

In conclusion, ECV trial is effective when compared to a scheduled cesarean for breech presentation provided the probability of successful ECV is high. Improved algorithms incorporating maternal, clinician and procedure intervention factors should be developed to determine the probability a patient will have a successful ECV. Using a reliable and valid scoring system to predict the chance of ECV success can be combined with maternal preferences in clinical decisionmaking. According to our study results this might be an effective treatment option that should be considered but more prospective randomized studies including larger groups are still needed to support this argument.

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