OUTCOME OF INDUCTION OF LABOR IN WOMEN WITH BREECH PRESENTATION

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ABSTRACT

Objective: To determine the success of induction of labor in breech presentation at term in terms of successful vaginal delivery.

Methodology: This descriptive case series was conducted out in Obstetrics department of Lady Reading Hospital Peshawar from April 2021-March 2022. We included all Para 1 - 5 having single alive fetus with frank or complete breech at term, visiting Gynecologic and Obstetrics department of institute, until required sample size is obtained. Ethical approval was obtained and proformas were filled regarding their characteristics.

Results: Our study included 50 women induced for breech presentation at term, 43 (86%) of them delivered via vaginal route and 7 (14%) by emergency cesarean section. Mode of delivery was not associated with age groups and parity. (p value > 0.05). Fetal distress was most common indication for cesarean section (42.9% of cesarean sections).

Conclusion: In carefully selected women with breech presentation Induction of labor (IOL) can yield encouraging results.

Keywords: Breech presentation, Induction of labor (IOL), Mode of delivery

INTRODUCTION

The breech presentation is around 3 % of pregnancies at 37 weeks while 20-30% at 28 weeks of gestation and accounts for 17% of all indications of primary cesarean section. Multiple retrospective and prospective cohort studies guided a mother's choice between caesarean and vaginal birth for breech presentation and led to grade A quality of randomized trials, meta-analysis and systematic reviews. Breech vaginal delivery deemed to be safe and legitimate in long-term outlook for both mother and neonate in carefully selected cases, under well-defined conditions due to well-recognized tragic outcomes even with technically safe delivery and with labor managed in proper obstetric settings.[1]

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Breech vaginal delivery has been widely debated with controversy and critique. Term breech Trial 2001, favoring cesarean delivery for all breech presentation, is a reason for this debate. A critical review of six national guidelines for breech presentation published between 2016 and 2020 showed that American and Australian guidelines are more supportive of Cesarean section than vaginal birth when compared with Canadian, French and United Kingdom guidelines.[2,3]

Cesarean section itself has inherent serious maternal risks of hemorrhage, hysterectomy, need for blood transfusion, sepsis visceral injury, returns to theatre in current pregnancy, while placenta accreta and uterine scar rupture in next pregnancy. Other issues are psychosocial and parenting implications of longer recovery times, resource implications for facilities and finance. It also badly affects learning of new skills with lack of obstetric skills in breech vaginal delivery.[4]

A systematic review compared planned cesarean section with intended vaginal delivery of term breech babies and found reduced risk of the perinatal mortality and short-term child morbidity with planned cesarean section. But We have to think before using costly and invasive skill of cesarean section in our resource-poor setting. [5]

The French and North American associations of obstetricians and gynecologists have well distinct recommendations for breech vaginal delivery. These need adequate maternal pelvis,

flexion of fetal head, expected fetal weight (EFW) ≤ 3800 g, frank breech, patient's informed consent, availability of skilled and experienced clinician, continuous fetal monitoring, cardiotocographic (CTG) interpretation expertise and immediate availability of caesarean facilities. [6,7]

Induction of labor (IOL) for vertex presentation exceeds 20% of all births. The international recommendations of IOL for term breech are varying and discordant. It is specifically assessed by only few studies and no consensus reached over required conditions to recommend it so IOL for breech rarely practiced. The NHS guidelines recommend (IOL) for breech presentation only when woman requests to have it while augmentation advised in carefully selected clinical situations.[8]

Some other studies observed that IOL for breech presentation does not seem to be associated with poorer outcomes than spontaneous labor regarding mode of delivery.[9]

This research aimed to evaluate the success of IOL for term breech presentation in terms of mode of delivery.

METHODS

This descriptive case series was approved for Gynecology and Obstetrics department of Lady Reading Hospital Peshawar, from April 2021 - March 2022, by institutional review board (Ref No 06/LRH/MTI, dated: 14/04/21). Informed consent taken from all 50 participants selected via non - probability technique. Sample size was calculated using Open-epi online calculator. The total population size (total deliveries per years) taken as 6000. Proportion of patients with breech presentation at term is 3% and confidence limit is 5%.[1]

We included all para 1-5 with single alive fetus, frank or complete breech with flexed head after 37 weeks, reassuring clinical pelvic measurements, EFW ≤4000 grams evaluated by ultrasound till required sample size is obtained. The recorded data included gestation at delivery and indication for IOL at admission. Gestational age calculated from last menstrual period and first trimester ultrasound confirmed it. Labor induced for medical and obstetrical indications. Women excluded from the study were with fetal congenital malformations, spontaneous onset of labor, Scarred uterus, twin pregnancies, and fetal growth restriction. Demographic features like age, parity, gestational age noted. Data regarding obstetric history, indications for IOL and delivery route recorded on a predesigned proforma.

Mandatory obstetrical ultra-sound done prior to delivery for estimated fetal weight, fetal attitude. IOL done for unripe cervix with Bishop Score of ≤ 6. Methods of IOL used were prostaglandin E2 vaginal pessary either alone or with balloon catheter combination in case of need. All patients followed until delivery.

Mode of delivery was primary outcome measure. Data was computed for descriptive statistics (mean and standard deviation) like age while frequency and percentages for qualitative variables like parity, mode of delivery. P value of <0.05 considered significant. SPSS version 23 (IBM-SPSSV-23) used for data analysis. Chi square test was used to determine association between categorical variables.

RESULTS

The mean age of sample of 50 patients was 29.58 years ± 7.83 with age range of 19-45 years. About 72 % of women were within age range of 18-35 years. Parity of 1-3 represented 38(76%) of women. Age and parity had no statistically significant association with successful vaginal birth.

Table I: Demographic features

	Frequency	**Percentage**
18-35 years	36	72%
>35 years	14	28%
Para 1-3	38	76%
Para > 3	12	24%
Cesarean deliveries	07	14%
Normal vaginal deliveries	43	86%

Our study included 50 women induced for breech presentation at term, 43 (86%) of them delivered via vaginal route and 7 (14%) by emergency cesarean section. The indications for IOL were diverse like premature membranes rupture, maternal diseases (Diabetes, preeclampsia / pregnancy-induced high blood pressure), planned delivery and fetal conditions

(e.g. reduced fetal movements), preterm pre-labor rupture of membrane (PPROM) being most common indication.

Table II shows indications for cesarean section with fetal distress being most common, observed in 42.9% of cesarean sections. Mode of delivery was not associated with age groups and parity assessed by using chi square test ($p > 0.05$) (Table III).

TABLE II: Indications for c/section

Indications	Frequency	Percentage
Failure to progress	2	28.6%
Fetal distress	3	42.9%
Failed IOL	2	28.6%
TOTAL	7	100%

Table III: Association of successful vaginal birth with age and parity

AGE	Successful vaginal birth			
	YES	NO	TOTAL	p-value
18-35 years	32	04	36	
>35 years	11	03	14	0.62
PARITYT				
1-3	33	5	38	
>3	10	02		0.86

DISCUSSION

This study showed a fairly good vaginal delivery success rate after IOL in carefully selected women with term breech presentation. The study's most important aim is to reduce uncertainty regarding success of induction and trial of breech vaginal delivery as it is a controversial area of research with high obstetric litigation and additional risks to mothers or babies.[10]

Previous consensus for singleton breech fetus at term, in the absence of clinician experience in breech vaginal delivery, was in favor of planned caesarean section and it was accepted by some authors as a general contraindication for labor induction. [2] Safety of IOL for breech presentation with reassuring results have been evaluated only by few studies. A French study revealed common use of IOL by 12.5%, occasional use by 59.7% and never by 27.8% of obstetric units respectively.[11]

Our results are comparable to those of Berthommier L showing that among (184/362, 50.8%) women undergoing a planned vaginal delivery 63% after cervical ripening had successful vaginal birth compared to spontaneous labor (88.8%) or the IOL with a favorable cervix (92.9%) ($p = 0.01$).[12] The expert advisory group of the French National College of Gynecologists and Obstetricians also report successful vaginal birth rate of 70%, after a planned vaginal delivery. [6]

Gaillard T 's observations show vaginal delivery rate of about 67.4% in IOL group portraying it as a safe option for unripe cervix. It is an imperative information helping women with unripe cervix to choose either IOL or planned cesarean delivery. Moreover, no significant difference noticed for neonatal mortality or severe morbidity between planned cesarean (48 [1.2%] vs IOL group 3 [1.4%]) (P=0.75).[13]

Our study results were comparable to Jarniat et al showing vaginal delivery rate of (88.2% versus 91.2%) for spontaneous versus induced labor, with rest cases delivered via emergency cesarean section ($p > 0.05$). [14]

Johanne,s observations show a good turn towards IOL for breech by finding no significant difference for the intrapartum cesarean delivery between spontaneous and induced labors (45.7% vs 48.0% P = 0.64) respectively . [15]

Taner observed reduced chance of maternal complications (OR, 0.31, 95% CI: 0.10–0.92, $p = 0.036$) with spontaneous compared to induced labor while increased risk of both fetal (OR, 9.48, 95% CI: 2.68–33.46, $p < 0.001$) and maternal complications (OR, 7.48, 95% CI: 2.52–22.20, $p < 0.001$) with induced labor Compared to primary cesarean.[16]

A meta-analysis by Fernández-Carrasco found relative risk of perinatal mortality 5.48 (95% CI = 2.61-11.51), birth trauma 4.12 (95% CI = 2.46-6.89) and Apgar results 3.33 (95% CI = 1.95-5.67) times higher for vaginal delivery

group compared to planned cesarean group while relative risk of maternal morbidity was 0.30 (95% CI = 0.13-0.67) times higher for cesarean group.[17]

IOL has become an accepted procedure in breech presentations especially in low-resource countries where it is important to avoid unnecessary operative interventions.

This was a small study group with less cases due to paucity of breech presentation and specified criteria, for both mother and baby, to achieve safe vaginal delivery. It was a study of single unit with uniform clinical routine and experienced staff for handling breech deliveries.

Conclusion: Successful vaginal delivery can be achieved with induction of labor, in majority of patients with breech presentation. Age and parity have no statistically significant association with successful vaginal delivery.

DECLARATIONS

Patients consent for use of data for publication:

Consent form signed by all participants

Authors contributions:

1. Primary Author- Conceived idea, Literature review, Data collection
2. Corresponding Author-Data analysis, Data review
3. Third, fourth and fifth Author – Managed discussion and references, proof reading

Conflicts of Interests:

No conflict of interest

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