

MATERNAL AND PERINATAL OUTCOME IN TERM SINGLETON BREECH PRESENTATION

Bushra Rauf, Tayyaba Ayub

*Department of Gynaecology and Obstetrics,
Hayatabad Medical Complex, Peshawar.*

ABSTRACT

Objective: This study was carried out to determine the maternal and perinatal outcome in singleton term breech presentations in the pretext of mode of delivery so that appropriate management protocol can be devised without compromising fetomaternal well being.

Material and Methods: This observational prospective study was carried out in obstetrics and gynaecology unit of Hayatabad Medical Complex Peshawar, from 1st January 2000 to 31st December 2000. All singleton term breech presentations were enrolled. Exclusion criteria included multiple pregnancies and preterm pregnancies. Data collected included age, present and past obstetric history, type of breech presentation, mode of delivery, indication for caesarean section either elective or emergency, fetal outcome and maternal complications.

Results: During this study a total of 265 cases of singleton term breech presentation were delivered (4.7%). Vaginal breech delivery was carried out in 148 cases (55.8%) and caesarean sections in 117 cases (44%). Elective caesarean sections were done in 78 cases (29.4%), and majority of these were primigravida (68.75%). Emergency caesarean sections were done in 39 cases (14.7%). Of the emergency caesarean sections major indication was fetal distress in 14 cases (35.8%) and failure to progress and obstructed labour in 12 cases (30.7%).

Route of delivery did not affect the perinatal outcome per say except for congenital abnormalities. Total number of congenital abnormalities associated with breech presentation were 7 and total number of intra uterine deaths associated with fetal and maternal problems were 13. All vaginal breech deliveries went into spontaneous labour and induction was performed in four cases, all were intra uterine deaths. Maternal and fetal complications were seen more frequently in the group requiring emergency caesarean section.

Conclusion: Proper selection of cases for vaginal delivery, vigorous intrapartum monitoring and proper technique of breech delivery have been established as the most important determinant for successful outcome in vaginal breech delivery without compromising fetomaternal well being and curtailing the caesarean section rate done for this mal presentation.

Key words: Breech, caesarean section, fetomaternal, perinatal, outcome.

INTRODUCTION

The incidence of breech presentation at term is 3-4%.¹ For most of these females the approach to delivery is controversial. Both the mother and fetus are exposed to greater risk of injury and death in breech delivery when compared to cephalic presentation. In majority of the cases no definite cause of breech presentation is found, with preterm labour being the most common. The incidence of breech presentation in preterm infants is 15% between 29-32 weeks. Other added risk factors include congenital abnormality of the fetus, oligohydramnios, placenta previa, multiple pregnancy, diabetes mellitus and uterine abnormalities. It has also been hypothesized that abnormalities in limb causing hypotonia or neurological deficit affecting generalized movement of the fetus may contribute to some neuromuscular dysfunction and consequent breech presentation. One of the few areas of argument between obstetricians is that all breeches should not be allowed vaginal delivery, the list of normal criteria however is extensive. Ultrasound not only determines attitude, placental localization, estimated fetal body weight but also amount of liquor, congenital abnormality in the fetus, uterine abnormality, fetal growth and hyper extended neck. However even in best hands ultrasound has limitations especially regarding estimated fetal body weight. The finding of hyper extended neck is unclear, the incidence in small studies is between 1.4-7.4%. It is found

to be associated with increase incidence of damage to cervical cord.

External cephalic version (ECV) between 37-41 weeks of gestation has decreased caesarean section rate from 29% to 16%. Success rates achieved with ECV are 65% and risk to fetus is minimal after 37 weeks.

Retrospective studies have shown increased perinatal morbidity and mortality associated with vaginal breech delivery. It has been estimated that the risk of any injury or death was 1% after trial of labour and 0.09% after elective caesarean section, and the risk to fetus increases in emergency caesarean section.² Undoubtedly the safe conduct of a trial of vaginal breech delivery is more likely if the individual obstetrician or institution has considerable experience of such cases, thereby reducing the incidence of caesarean section performed for breech presentation. Recent studies have failed to show any significant reduction in perinatal mortality following the protocol of elective caesarean section for all breech presentations. So the policy of elective caesarean section for all breech presentations cannot be used indiscriminately and a trial of vaginal delivery can be contemplated to patients fulfilling the criteria for vaginal breech delivery, keeping a low threshold for emergency caesarean section when the problems arise. This may be the best option in developing countries where the risk of maternal morbidity and mortality is significantly higher as compared to developed

countries. This study was carried out to determine the maternal and perinatal outcome of term breech presentation relating to mode of delivery, in an attempt to reduce the caesarean section rate with its attending complications with out jeopardizing fetal well being.

MATERIAL AND METHODS

This observational study was carried out in Hayatabad Medical Complex, department of Obstetric and Gynecology from 1st January 2000 to 31st December 2000. During this period all singleton term breech cases were enrolled. Exclusion criteria included preterm and multiple pregnancies. Fetomaternal outcome in relation to mode of delivery was assessed. Mother was clearly informed about the reduced chance of adverse neonatal outcome with a policy of emergency caesarean section should the need arise. The cases were subjected to different modes of management after thorough clinical and ultrasound evaluation. After assessment of the female pelvis and estimation of fetal weight and taking into account her medical and obstetric history, a trial of vaginal delivery was given with a low threshold for emergency caesarean section. If a woman prefer not to have a trial of vaginal delivery, then elective caesarean section was performed- X-ray and C.T pelvimetry was not done routinely and type of breech did not alone effect the mode of delivery. Induction and augmentation was carried out when needed.

Data collected included age, present obstetric history, type of breech presentation, selection of mode of delivery, indication for caesarean section either elective or emergency, fetal outcome and maternal complication.

Indication for elective caesarean section were previous Caesarean section, associated medical or obstetric complication, bad ob-

stetric history, post dates, oligohydramnios and patient wishes. Perinatal mortality was defined as intrapartum death or death within one week of delivery. Fetal outcome was measured in terms of 5 minute APGAR score and neonatal mortality directly related to breech delivery was calculated after excluding intrauterine deaths and congenital abnormalities. Maternal complications in relation to mode of delivery were assessed.

RESULTS

During this study period a total of 5560 patients were delivered out of which 265 were term breeches (4.7%) including 117(44%) caesarean sections. Vaginal breech delivery was carried out in 148(55.8%) cases. Elective caesarean section was done in 78 cases (29.4%) and emergency caesarean section in 39 cases (14.7%) (Table-1). 20.2% (30 cases) of primigravida had vaginal delivery as apposed to 79.7%(118 cases) in multigravida. Majority of the cases under going elective caesarean section were primigravidae with breech presentation (68.75%) in whom after thorough counseling elective caesarean section was decided (Table-2). 13 cases had previous I caesarean section and 4 had more than I previous caesarean section. In 28 other cases elective caesarean section was performed due to associated maternal and fetal problems adversely affecting fetal well being and these patients did not undergo trial of vaginal breech delivery. Of the emergency caesarean section major indica-

MODE OF DELIVERY

S. No.	Mode of delivery	Number	Percent-age
1	Vaginal	148	55.8%
2	Emergency C/S	39	14.7%
3	Elective C/S	78	29.7%
4	Total	265	100%

TABLE-1

EFFECT OF PARITY ON MODE OF DELIVERY

Parity	Mode of Delivery					
	Vaginal n=148		Emergency C/S n=39		Elective C/S n=78	
	Number	%age	Number	%age	Number	%age
Primigravida	30	(20.3%)	03	(7.7%)	33	(42.3%)
Multigravida	118	(79.7%)	36	(92.3%)	45	(57.7%)

TABLE-2

tion of caesarean delivery was fetal distress in 14 cases (35.8%) and failure to progress and obstructed labour in 12 cases (30.7%) during trial of vaginal delivery. 7 patients (3.7%) presented in labour with footling breech and 3 with associated cord prolapse, emergency caesarean section was decided for these patients straightaway. In 3 cases

INDICATION FOR EMERGENCY C/S

S. No.	Indication for emergency C/S	Numbers	Percent-age
1	Fetal distress	14	35.8%
2	Failure to progress and obstructed labour	12	30.7%
3	Footling breech	7	17.9%
4	Cord prolapse	3	7.6%
5	Chorioamnionitis	3	7.6%
6	Total	39	14.7%

TABLE-3

patients had leaking per vaginum and they developed chorioamnionitis (determined by rise in temperature + total leucocyte count) and emergency caesarean section was then performed during labour, of these one was a diabetic patient with intrauterine death (table-3).

Regarding perinatal morbidity and mortality there was no intrapartum or neonatal deaths in any of the vaginal or abdominal breech delivery directly related to the mode of delivery per say except for those associated with congenital abnormalities. Neonatal complications assessed by 5 minute APGAR score and birth trauma was three times higher and comparable in both vaginal and emergency abdominal deliveries i.e 4.1% versus 3.7%, but were significantly low in planned caesarean sections i.e 0.7% (table-4). Congenital abnormalities associated with breech presentation were hydrocephalus 2, cleft lip and palate 2, meningo-

NEONATAL MORBIDITY VERSUS MODE OF DELIVERY IN 265 CASES.

S. No.	Neonatal morbidity	Mode of delivery		
		Vaginal	Emergency C/S	Elective C/S
1	Stuck head	1	-	-
2	Neonatal Hypoxia	7	6	1
3	Birth trauma	2	1	-
4	Septicemia	-	2	-
5	Jaundice	2	1	1
6	Total	11(4.1%)	10(3.7%)	2(0.7%)

TABLE-4

CONGENITAL ABNORMALITY IN 265 DELIVERIES

S. No.	Congenital Abnormality	Numbers	Percentage
1	Hydrocephalus	2	0.75%
2	Cleft lip + palate	2	0.75%
3	Meningocele	2	0.75%
4	Depressed nose with dysmorphic features	1	0.37%
5	Total	7	2.6%

TABLE-5

cele 2 and deformed upper and lower limbs with depressed nasal bridge 1(table5). Total number of intra uterine deaths (IUD) associated with maternal or fetal problems were 13 (4.9%) and all of these IUDs were delivered vaginally except for 1 emergency caesarean section in a diabetic grand-multigravida who developed chorioamnionitis with failure to progress of labour. All vaginal breech deliveries went into spontaneous labour and induction was performed in four cases, all were IUDs.

Maternal complications are depicted in table 6. About 16 mothers developed some complication which were highest in women who had undergone emergency caesarean section (table-6).

MATERNAL COMPLICATION ASSOCIATED WITH MODE OF DELIVERY IN 265 DELIVERIES

S.No.	Complications	Mode of delivery			Total
		Vaginal	Emergency C/S	Elective C/S	
1	Cervical tear	1	-	-	1
2	3 rd degree tear	1	-	-	1
3	Postpartum hemorrhage	-	1	2	3
4	Post partum Infection	-	2	1	3
5	Wound Infection	-	2	-	2
6	Urinary tract Infection	-	6	-	6
7	Total	2(12.5%)	11(68.75%)	3(18.75%)	16 (6%)

TABLE-6

DISCUSSION

The incidence of breech presentation at term is 3-4%,¹ while the frequency in our unit has been found to be 4.7%. The incidence is even higher in preterm population i.e. 14% between 29-32 weeks. Majority of the cases of breech presentation has no specific underlying cause. With the wide spread use of high quality ultrasonograms, many rare events that may predispose to breech presentation have already been excluded.

Parity distribution shows that 66 patients (24.9%) were primigravida and 199 (75%) were multigravida, the corresponding figures in other studies were 34% and 66% respectively.²

Ratio of vaginal breech delivery versus caesarean section in this study was 55.8% versus 44%² which differ from many studies in the west despite no change in perinatal morbidity and mortality rates among breech births. This could be due to off setting factors, such as increased use of ECV, small sample size, poorly defined outcome measures and non randomization of cases to either trial or no trial of labour. Vaginal delivery has found to be more common in those undiagnosed antenatly than those diagnosed in the antenatal period and allowed to go into labour.

Undoubtedly the safe conduct of a trial of vaginal breech delivery is more likely if the individual obstetrician or institution has considerable experience of such cases. Induction and augmentation remain two other controversies to which there are no answers to be found in literature. While many argue that spontaneous onset of labour is an excellent predictor of a successful vaginal delivery, and that an induction may compound the potential problems of a breech, others suggest that induction may be appropriate to prevent the baby from becoming too big.³ Similarly continuous use of oxytocin has been advocated in cases of primary dysfunctional labour, characteristic of primigravida. In our study induction was done in only four cases and all of them were intrauterine deaths with no risk of hyperstimulation causing fetal distress or stuck head if a large baby was pushed into the pelvic cavity.

The prevalence of congenital abnormalities among breech presentation detected was 2.6% (table 6)⁴ which has been considered as risk factor for breech presentation. In our small study sample there were no intrapartum or early neonatal deaths. There were only four intrauterine deaths and these were not directly related to mode of delivery.^{5,6} Neonatal morbidity associated with vaginal breech delivery was 4.1% as apposed to caesarean section where neonatal morbidity was 3.7% for emergency caesarean section and 0.75% for elective caesarean section^{2,6} (table 4). Thus as far as neonatal morbidity is concerned, the data is less convincing and generate more questions than answers. The higher rate of neonatal morbidity in emergency caesarean section group was probably because of advance stage of labour and mishandling before undergoing caesarean section resulting in various fetomaternal complications. However ultimate fetal outcome was not affected by these differences⁷ A study in Australia have shown that although elective caesarean section rate has

risen from 49.1% to 58.40% there was no change in the perinatal mortality rate among breech births.⁸ Elective caesarean section was carried out in 29.4% cases,² the most common indication was primigravida in 68.75%, studies have shown that rates of caesarean section have doubled in primi breech.⁴ This decision was made either on the basis of pelvic inadequacy determined clinically, estimated fetal body weight of greater than 3.6 kg or associated medical/obstetric problems increasing risk for vaginal breech delivery and being made by the patient herself after thorough counseling regarding the risk of caesarean section, nature of a trial of vaginal delivery and its success rate.⁹

Trail of vaginal breech delivery succeeded in 55.8% cases^{1,6} while emergency caesarean section was performed in 14.7% cases. Major cause of caesarean section was fetal distress (35.8%) and failure to progress (30.7%). Maternal complications associated with breech delivery were 6% of these 14 (5.3%) were in the caesarean section group (table 6). Maternal mortality after caesarean section is 3-7 times higher than after vaginal birth with a relative risk of 4.7 of vaginal verses abdominal delivery. In a recent American study, women who had been delivered by caesarean section were twice as often readmitted in first 3 months postpartum for serious complications, compared with females who had spontaneous vaginal births.¹⁰ Most common complication being infection, long term complications include uterine rupture and placental invasion in subsequent pregnancies.¹¹ At present there is not enough evidence to evaluate the use of policy of planned caesarean section for breech presentation. A large Canadian trial addressing this question is currently under way.

CONCLUSION

The existing evidence regarding the optimal management of term breech is

imperfect. For some women, labour is an integral and treasured experience, it should be the responsibility of the obstetrician to inform the mother in clearest terms possible about evidence relating to perinatal morbidity and mortality. The risk of caesarean section, the nature of a trial of vaginal delivery, its success rate and option of external cephalic version should be clearly outlined and documented. External cephalic version should be made an available option in all obstetric units. Proper selection of cases for vaginal delivery, vigilant intra-partum monitoring and employing proper technique of breech delivery have been established as the most important determinant for successful vaginal breech delivery without compromising fetomaternal well being and curtailing the percentage of caesarean section being done for this malpresentation.

Maternal morbidity and mortality is still a problem in western countries, but is much more so in developing countries. If maternal mortality is greater than 1-2/1000 per caesarean section then elective caesarean section becomes a dangerous policy from mother's perspective and is unlikely to be adopted in such circumstances. The issue of training and operator experience is not a new one and there is no substitute to experience. It is important that junior obstetricians are allowed to develop these skills as 10-15% of breech present late, thereby reducing the perinatal morbidity and mortality.

Thus a policy of planned vaginal birth for selected cases with low threshold to proceed to caesarean section when problems arise, may still be in the best interest of mother and child every where in the world.

Address for Correspondence:

Dr. Bushra Rauf,
Department of Obstetrics & Gynaecology,
Hayatabad Medical Complex,
Peshawar.

REFERENCES

1. Hannah ME, Hannah WJ, Hewson SA, Hodnett ED, Saigal S, Willian AR. Planned caesarean section versus planned vaginal birth for breech presentation at term: A randomised multicentre trial. Term breech collaboration group. *Lancet* 2000; 21; 356 (9239): 1375-83.
2. Nahid F. Outcome of singleton term breech cases in the pretext of mode of delivery. *J-Pak-Med-Assoc.* 2000; 50 (3): 81-5.
3. Beeston JGT. Management of breech presentation at term. *Progress in obstet and Gynecol.* 1998; 13: 87-100.
4. Gibson DH. Breech delivery. *J obstet Gynecol* 1990; 10: 506-9.
5. There is still room for disagreement about vaginal delivery of breech infant at term. *Commentary Br J obstet Gynecol*, 2002; 109: 967-9.
6. Herbst A, Thorngren J, Erneck K. Mode of delivery in breech presentation at term: increased neonatal morbidity with vaginal delivery. *Acta Obstetric Gynaecolscand.* 2001; 80 (8): 731-7.
7. Albrechtsen S, Rasmussen S, Irgens LM. Secular trends in peri-and neonatal mortality in breech presentation; Norway 1967-1994. *Acta Obstetric Gynecolscand* 2000; 79: 508-12.
8. Roberts CL, Peat B, Algert CS, Henderson S, Mart D. Term breech birth in New south Wales, 1990-1997. *Aust N Z J Obstet Gynaecol*, 2000; 40: 23-9.
9. Al-Mufti R, Mc Carthy A, Fisk NM. Obstetricians personal choice and mode of delivery. *Lancet* 1996, 347:544.
10. Hofmeyr GJ, Hannah ME. Planned caesarean section for term breech delivery. *Cochrane-Database Syst Rev.* 2000; (2): CD00166.
11. Yaegashi N, Chiba Sekii, Okamaro K. Emergency postpartum hysterectomy in women with previous caesarean section. *Int J Gynecol-Obstet* 2000; 68: 48