STUDY OF MODE OF DELIVERY IN BREECH PRESENTATIONS

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CERTIFICATE

This is to certify that this dissertation titled **"STUDY OF MODE OF DELIVERY IN BREECH PRESENTATIONS"** submitted by **Dr.N.NAVITHA** to the faculty of Obstetrics & Gynaecology, The Tamilnadu Dr. M.G.R. Medical University, Chennai in partial fulfillment of the requirement for the award of MD degree Branch II (Obstetrics & Gynaecology) is a bonafide research work carried out by her under our direct supervision and guidance.

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DECLARATION

I, **Dr.N.NAVITHA** solemnly declare that the dissertation titled **"STUDY OF MODE OF DELIVERY IN BREECH PRESENTATIONS "** has been prepared by me.

This is submitted to the Tamil Nadu Dr. M.G.R. Medical University, Chennai, in partial fulfillment of the regulations for the award of MD Degree Branch II (Obstetrics & Gynaecology).

It was not submitted to the award of any degree/ diploma to any University either in part or in full form previously.

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CONTENTS

INTRODUCTION

When any part of the foetus other than vertex presents the case is one of malpresentation.

In a developing country like India, where proper antenatal and intra natal visits are not made by the patients, and who presents late in labour with abnormal presentations poses great difficulty to the clinician.

Among which one is Breech Presentation, which is the most common malpresentation.

There are three types of breech namely, complete breech with both legs flexed at both hips and knees, frank breech with both legs extended at knees and footling breech in which one of the legs extended at both the hip and knee. The frank breech is much more frequently seen in primi gravidae and complete breech in multigravidae.

Breech presentation is found either when the onset of the labour is premature or at term when some factor in the past prevented spontaneous version.

Factors other than gestational age that appear to predispose to breech presentation include hydramnios, uterine relaxation associated

with great parity, multiple fetuses, oligohydramnios, hydrocephaly, anencephaly, previous breech delivery, uterine anomalies and pelvic tumours.

The prevalence of breech presentations was found to be higher in earlier weeks of gestation, than at term, which spontaneously gets converted to vertex near term.

This preterm type of breech also won't produce any undue difficulty in delivering the baby vaginally but produces added morbidity to the baby apart from its prematurity.

The fetal mortality in breech deliveries as such shows wide variations. After correcting the mortality rates for the prematurity and fetal anomalies, the breech delivery itself imposes a significant mortality and morbidity rate to the fetuses.

The most common prominent cause for fetal morbidity and mortality is asphyxia, which undoubtedly is produced when there is delay in delivery of the after coming head.

The other causes that increases the fetal mortality and morbidity are intracranial hemorrhage due to tentoreal tears, sudural haemorrhages occipital osteodiastasis (separation of the squamous and lateral part of the occipital bone), all of these, occurs mainly during the

assisted breech delivered vaginally, as there is no time for the head to undergo moulding.

Prolapse of the cord, which also increases the morbidity, commonly occurs in the complete type of breech presentation, after rupture of membranes, which has to be anticipated.

Thus owing to the above said fetal complications, breech presentations, without other complications many a times are taken for LSCS to improve the fetal outcome mainly.

Thus deciding for elective caesarean section, in breech presentations without other complications, found to be greatly decreased the fetal morbidity and mortality but increases the maternal morbidity equivalent to the morbidity associated with caesarean sections.

The assisted breech vaginal delivery increases the fetal morbidity and mortality but does not increases the maternal morbidity significantly.

AIM OF THE STUDY

The aim of the present study is

1. To study the factors influencing the mode of delivery (vaginal or abdominal) for both the uncomplicated and complicated breech presentations.
2. Find out the inherent factors leading to fetal mortality in the vaginal and abdominal delivery techniques.
3. To compare the fetal outcome in both the mode of deliveries.

Definition

Complicated breech presentations, associated with factors, like, PIH, Antepartum haemorrhage, placenta previa, contracted pelvis, Post caesarean pregnancy, pulsatile cord prolapse, BOH are meant for caesarean sections which are directly influenced by the associated complications.

In the uncomplicated breech presentation, these factors are not encountered and the decision is made depending on the various factors like EFW, type of breech, stage of labour, parity, previous type of delivery, prematurity etc which are going to be discussed further.

REVIEW OF LITERATURE

During the 16th and 17th century any case of breech presentation was doomed to have a still birth, with gradual improvement in the obstetric ways which decrease in the fetal mortality. Other than abdominal delivery, different techniques were used by different obstetricians with varying success rates while all of them aiming at reducing the fetal mortality.

In the 18th century, obstetricians believed in spontaneous breech delivery. Later considering the hazards, assistance was applied actively in various stages of breech delivery.

In 1949, Munroker practiced dislodgement of impacted breech by placing the patient in exaggerated left lateral position. In 1937, Lorset described his technique for delivering the extended arms.

In 1934, Marshall and Burns suggested the technique of delivering the aftercoming head which is practiced even now.

In 1924, Piper devised a forceps with a long shank in order to facilitate easy application of the aftercoming head. when the fetal head was oblique and the chin was directed posteriorly, Mauriceu's manouvere was practiced to deliver the aftercoming head.

This manouvere was first practiced by mauricean (1721) but for some reason, fell into disfavor. Much later Smellie (1876) described a similar procedure but rarely made use of it because he preferred forceps. Veit (1907) redirected attention to the mauricean maneuver and in Germany the procedure is frequently named after Veit. The most accurate designation however is the Mauricean – Smellie Viet Maneuver.

Rarely back of the fetus fails to rotate to the anterior when this occurs, rotation of the back to the anterior may be achieved by using modified Prague maneuver which was recommended by Kiwisch.

Later on breech extraction, came into vogue and was done under anesthesia, when the cervix was fully dilated in the absence of feto pelvic disproportion, but due to increased maternal and fetal hazards, this gradually lost its reputation and has no place in modern obstetrics

except to deliver the second of the twin when the first had been delivered under anaesthesia.

Soni (1931) was the first to suggest caesarean section for reduction of perinatal mortality in breech presentation. In 1969, Woodwund advised caesarean section for all primi gravidae with breech presentation and all patients with a big baby.

Zatuchi – Andros devised the method of prognostic scoring in order to decide the mode of defining breech presentation. This was employed much in practice by Bind and Mclin in 1975 and was popularized. These criteria relate to the patient in early labor.

Zatuchni Andros Prognostic Scoring

	0	**1**	**2**
Gestational Age	39 or more	38 weeks	37 weeks or less
Estimated fetal weight	8 lbs	7.8 lbs	< 7 lbs
Previous Breech Delivery	None	One	Two or more
Cervical dilatation	1-2 cm	3-4 cm	> 5 cm
Station of breech	-3	-2	-1

Patients with low score of 3 were taken up for abdominal delivery; if the score is above 5, vaginal delivery was allowed. If the score is between 3-5 the evaluation of the cause was considered.

MATERIALS AND METHODS

This is a study of 100 cases of breech presentation, admitted during the period of January 2007 to October 2007 in Government Rajaji Hospital where if a patient is admitted in labor and with breech presentation deserves the immediate attention of nursing and medical personnel. A detailed history with special reference to previous successful breech delivery was elicited. Her age, parity, antenatal care and efforts at external version were recorded.

Associated maternal complications were looked for.

After routine general examination, abdominal examination was proceeded to look for the size of the uterus, frequency of the uterine contraction and fetal heart.

A rapid assessment was made to establish the stage of labor. Status of membrane and condition of the fetus. An IV infusion is established Blood – Hb% and Blood grouping and Rh typing was done because this women have a likelihood to undergo operative delivery.

Close surveillance of foetal heart rate and uterine contraction were monitered. Foetal heart is recorded every fifteen minutes. If we

suspect fetal distress, continuous electronic monitoring of foetal heart and uterine contraction was done.

Vaginal examination was done to know the state and dilatation of cervix, type of breech and its status, status of membranes and the type of pelvis with assessment of fetopelvic disproportion.

Vaginal examination is done following rupture of the membrane to check for umbilical cord prolapse. Special attention to the foetal heart rate for the first 5 to 10 minutes following rupture of membrane to ensure that there has not been an occult cord prolapse.

In all cases of primi gravidae and multi with bad obstetric history and in cases of suspected fetal anomalies ultra sonogram by an expert sonologist has been taken. If patient is in labor, urgent ultrasound was taken by the obstetricians, to rule out any major anomalies like hydrocephalus.

Decision as to the mode of delivery was made in booked cases, taking into considerations, parity, previous obstetric history, weight of the baby, and associated maternal complications as well as the type of breech, flexion of the fetal head, frequency of the uterine contraction, and size of the maternal pelvis.

When abdominal delivery was decided, a lower segment caesarean was done. In emergency admission, delivery was made at the time of admission according to the stage of labour.

When vaginal delivery was decided, routine assisted breech delivery was conducted with Marshall Burn's technique for delivery of the after coming head we seldom use the forceps as a routine.

During the process of labour, abdominal delivery was undertaken, when indications rose up. In certain cases LSCS was done due to appropriate indications.

Statistical Tools

The information collected regarding all the selected cases were recorded in a Master Chart. Data analysis was done with the help of computer using Epidemiological Information Package (EPI 2002). Using this software, frequencies, percentage, mean, standard deviation, x^2 and 'p' values were calculated. A 'p' value less than 0.05 is taken to denote significant relationship.

RESULTS AND ANALYSIS

A. Characteristics of cases studies

Table 1

Maternal Age Distribution

Age in years	Cases	
	No.	%
15-20	17	17
21-25	46	46
26-30	26	26
31-35	8	8
Above 35	3	3
Total	100	100
Mean	24.8 yrs	
S.D.	4.7 yrs	

In our study of 100 cases with breech presentation, the age distribution is maximum (46%) in the age group of 21-25, the next coming (26%) in the range of 26-30. The standard deviation is 4.7 years.

Table 2

Other characteristics

Parameter	Cases	
	No.	%
Antenatal Care		
Booked	43	43
Unbooked	57	57
Parity		
Primi	41	41
Multi	59	59
Type of Breech presentation	43	43
Extended Breech	54	54
Flexed Breech	3	3
Footling		
Previous type of delivery		
FTND	45	76.3
Abortion	5	8.5
LSCS	4	6.7
Assisted breech	5	8.5
Total	59	100
Mode of delivery		
Vaginal delivery	63	63
LSCS	37	37

Parameter	Cases	
	No.	%
Phase of labour		
Latent	37	37
Active	62	62
Not in labour	1	1
Uterine Anomaly		
Unicornuate	4	4
Bicornuate	3	3
Subseptate	1	1
Nil	92	92

- Of 100 cases 62 out of 63 vaginal deliveries came labour in active labour and only one was not in labour.

- In the 37 cases , all came in early labour, moving more for caesarean sections for all breech presentations (the modern trend).

- The incidence of uterine anomalies is 8% in cases of which unicornuate is 4% and bicornuate is 3% and subseptate is 1%.

Table 3

Gestational Age

Gestational Age (in weeks)	Cases	
	No.	**%**
32 weeks & less	19	19
33-36 weeks	13	13
More than 36 weeks	68	68
Total	100	100
Mean	36.2 weeks	
S.D.	2.9 weeks	

Out of 100 cases, 68% of cases were more than 36 weeks of gestation and 15% fall in between 33-36 weeks and 19% are of 32 weeks and less than 32 weeks.

Table 4
Associated Complications

Associated Complications	Cases	
	No.	%
MRO	8	8
MRO & PIH	1	1
MRO & Post datism	1	1
Oligohydromnios	4	4
IUD	4	4
Twin gestation	14	14
Preterm Labour	7	7
Rh negative	3	3
PROM	14	14
PROM & Rh negative	2	2
PROM & BOH	1	1
PROM & IP Sepsis	1	1
BOH & Rh negative	2	2
Pul. Cord prolapse	1	1
Non Pulsatile cord prolapse	3	3
IUGR	1	1
Pre LSCS, Severe PIH	1	1
Anemia with PIH	1	1
Others	12	12
Total complication present	81	81
Complication absent	19	19
Total	100	100

Table 5

Maternal Age and Mode of delivery

Age in years	Mode of delivery			
	Vaginal delivery		LSCS	
	No.	%	No.	%
15-20	8	12.7	9	24.3
21-25	28	44.4	18	48.6
26-30	21	33.3	5	13.5
31-35	5	15.9	3	8.1
Above 35	1	1.6	2	5.4
Total	63	100	37	100
Mean	24.77 yrs		24.51 yrs	
S.D.	4.31 yrs		5.28 yrs	
P	0.3958 (Not significant)			

In an US study if maternal age is < 20 yrs, it is associated with an independent increased risk, if they are carrying breech fetuses

In our institutional study, out of 100 cases 28 were in the age group of 21-25 of which 48.6% undergo LSCS, an incidence slightly higher than vaginal deliveries.

In the age group of 26-30, only 13.5% of patients undergo LSCS, compared to vaginal deliveries.

In the age group of 31-35 LSCS is of 8.1% and 15.9% delivered vaginally.

Table 6

Antenatal Care and Mode of delivery

Antenatal Care	Mode of delivery			
	Vaginal delivery		LSCS	
	No.	%	No.	%
Booked (43)	19	44.2	24	55.8
Unbooked (57)	44	77.2	13	22.8
p	**0.0015** **Significant**			

In our study of 100 cases, 43 were booked out of which only 55.8% undergo LSCS, governed by other factors also which contribute to the mode of delivery.

And in the 57 unbooked cases 77.2% undergo vaginal deliveries and only 13% undergo LSCS and the difference between the two is statistically significant.

Table 7

Parity and Mode of delivery

Parity	Mode of delivery			
	Vaginal delivery		LSCS	
	No.	%	No.	%
Primi (41)	23	56.1	18	43.9
Multi (59)	40	67.8	19	32.2
P	0.3264 Not significant			

In our study of 100 cases, out of which 41 primi 56.1% underwent vaginal deliveries and only 43.9% underwent caesarean section. In 59 multis, 67.8% underwent vaginal deliveries and only 32.2% underwent LSCS.

Table 8

Gestational Age and Mode of delivery

Gestational Age in weeks	Mode of delivery			
	Vaginal delivery		LSCS	
	No.	%	No.	%
32 weeks and less	19	30.1	-	-
33-36	10	15.9	3	8.1
> 36	34	54	34	91.9
Total	63	100	37	100
Mean S.D.	35.32 weeks 3.36 weeks		37.76 weeks 0.8 weeks	
'p'	**0.0001 (Significant)**			

In study in US, infants with gestational ages 26-39 wks had caesarean delivery rates greater than 80%. Out of our 100 study cases, 19 cases (100%) of the babies of gestational age less than 32 weeks delivered vaginally (30.1%.)

In the gestational age between 33-36 weeks 15.9% underwent vaginal deliveries and 8.1% underwent LSCS whereas in the babies of gestational age greater than 36 weeks only 54% delivered vaginally and 91.9% underwent LSCS, which was statistically significant.

Table 9
Previous Type of delivery and Present Mode of delivery

Previous type of delivery	Mode of delivery			
	Vaginal delivery		LSCS	
	No.	%	No.	%
FTND (45)	31	68.9	14	31.1
Abortion (5)	5	100	-	-
LSCS (4)	1	25	3	75
Assisted breech (5)	5	100	-	-
Total (59)	42	71.2	17	28.8

- Out of the 59 multiparas, the present mode of delivery was influenced by the previous mode of delivery 100% of these patients with previous assisted breech underwent rpt Assisted breech delivery.

- 68.9% of these patients with previous FTND submitted to vaginal deliveries and 31.1% were submitted for LSCS.

- In a randomized control study with 71 cases at US, vaginal breech delivery after previous LSCS found to be large (78.7%) and only two serious complications are met with.

- But 75% of our patients with previous LSCS, under went Rpt LSCS.

- 100% of these patients with previous H/o abortion, submitted to assisted breech deliveries.

Table 10

Type of Breech and Mode of delivery

Type of Breech	Mode of delivery			
	Vaginal delivery		LSCS	
	No.	%	No.	%
Extended Breech (43)	35	81.4	8	18.6
Flexed Breech (54)	26	48.1	28	51.9
Footling (3)	2	66.7	1	33.3
Total	63	100	37	100

- Out of my 100 cases, 81.4% of Extended Breech type underwent successful assisted breech vaginal deliveries with good fetal outcome.
- Only 18.6% of extended breech type underwent LSCS.

- Of the Flexed breech type cases, 48.1% delivered vaginally and 51.9% underwent LSCS.
- Of the footling breech type, 66.7% delivered vaginally and 33.3% for LSCS.

Table 11

Foetal Mortality and Mode of delivery

Type of delivery	Total no. of		Perinatal Loss	
	Cases	%	No.	%
Assisted breech delivery	55	55	17	30.9
Lower segment caesarean section	37	37	2	5.4
Breech Extraction	2	2	2	100
Spontaneous breech delivery	6	6	6	100
Total	100	100	27	27

Among the 55 assisted breech deliveries, 17 (30.9%) resulted in perinatal loss, but all the breech extraction (2) cases and spontaneous breech delivery cases (6) resulted in perinatal deaths whereas only 2 out of the 37 LSCS deliveries (5.4%) ended in perinatal loss. This is statistically significant.

Table 12

Associated Complications and Mode of delivery

Mode of delivery	Associated Complications			
	Present		Absent	
	No.	%	No.	%
Vaginal delivery (63)	45	71.4	18	28.6
LSCS (37)	36	97.3	1	2.7
'p'	**0.0035** **Significant**			

In our vaginal assisted breech deliveries, 71.4% of cases are associated with other maternal complications and only 28.6% underwent LSCS which are not associated with complications whereas, out of 37 LSCS cases, 97.3% which underwent LSCS were associated with other maternal complications and 2.7% were not associated with maternal complications, which was statistically significant.

Table 13

Birth weight of the baby and Mode of delivery

Expected Fetal weight (in gms)	Mode of delivery			
	Vaginal delivery		LSCS	
	No.	%	No.	%
Less than 2000	18	28.5	1	2.7
2000-2499	13	20.6	6	16.2
2500-2999	21	33.3	15	40.5
3000-3499	9	14.3	13	35.1
3500 & above	2	3.2	2	5.4
Mean S.D.	2327 gms 629 gms		2783 gms 421 gms	
'p'	**0.0002 (Significant)**			

In our study of 100 cases, 28.5% with babies < 2 kg delivered vaginally, whereas only 2.7% of babies < 2 kg submitted for LSCS.

In the range of 2 kg – 2.5 kg, 20.6% of babies submitted for vaginal deliveries and 16.2% of babies submitted for LSCS, which is not a marked difference, governed by other factors also in these cases.

In the range of 3 kg and above, 35.1% of cases underwent LSCS, whereas, only 14.3% of cases delivered vaginally.

Table 14

Etiology for breech presentation

Etiology	**Cases**
Prematurity	7
Oligohydromnios	4
Twins	14
Uterine anomalies	8
IUD	4
Placenta Previa	1

In our study of 100 cases, 14 cases were found to be twins, which is considered as a major factor for the etiology of breech presentation.

Table 15

Neonatal outcome and type of delivery

	Neonatal outcome			
	Alive		**Dead**	
Type of delivery	**No.**	**%**	**No.**	**%**
Vaginal delivery(63)	38	60.3	25	39.7
LSCS (37)	35	94.6	2	5.4
'p'	**0.0005 Significant**			

A large , well executed , multi center randomized clinical trial, involving 700 cases in year 2000, showed measurement of perinatal mortality was significantly lower in the planned LSCS group than in the planned vaginal group P< .0001

Among the 63 vaginal deliveries there were 25 neonatal deaths (39.7%). But out of the 37 LSCS cases, only two had perinatal loss (5.4%). This difference is statistically significant ($p<0.05$)

Table 16

Congenital anomalies and type of delivery

Congenital anomalies	Mode of delivery			
	Vaginal delivery (63)		LSCS (37)	
	No.	%	No.	%
Hydrocephalus	4	6.3	-	-
Spinabifida	5	7.9	-	-
Menigocele	-	-	-	-
Anencephaly	-	-	-	-
Encephalocele	-	-	-	-
Achondroplasia	-	-	-	-
Imperforate anus	-	-	-	-
CTEV	-	-	-	-
Fetal ascitis	-	-	-	-
Dextrocordia	-	-	-	-
Multiple anomolies	-	-	1	2.7
Nil	54	85.8	36	97.3

Out of my 100 cases, 6.3% of babies had hydrocephalos and 7.9% of cases had Spinabifida and only one can had multiple anomalies.

To be noted, all such cases with congenital anomalies, were delivered vaginally except one which was delivered by LSCS.

DISCUSSION

Incidence of breech presentation

The incidence of breech presentation is variously estimated but it may be said, it generally occurs in about one in 50 cases. Mudaliar and Menon reports incidence of 3.7%. Incidence of breech in our study is 3.3%

In a randomized controlled, multi center study, the incidence of breech was 3-4%. The percentage of breech decreases with advancing gestational age (25% if < 28W 7% ≥32 W 1-3% at term)

Aetiology of breech presentation

Aetiology which interfere with the normal ovoid shape of the fetus or changes in the shape of the uterus may result in a malpresentation, such as breech. In our series, twin gestation stands first (14%) for the etiology. The nearest associated factor is uterine anomaly in 8% and the prematurity accompanies 7%. The other factors were oligohydromnious, placenta previa, IUD which had some etiology for the development of breech presentation in our series.

Finau and Valhovia (1978) provided a sonographic evidence of a much higher incidence of placental implantation in the cornual fundal region for breech presentation 73% than for vertex presentation 5%.

In our study also though most of the cases were unbooked (57%), we do a emergency ultrasound before delivery in our setup which showed a placental implantation in the cornual fundal region (68%) for breech presentations.

Mode of delivery in breech presentation

Before 2001, ACOG recommended for vaginal deliveries for 50% of cases, and of those case 60% - 82 % were delivered vaginally.

In 2003, studies anomalies based on the data from the national centre for health statistics, the rate of caesarean delivery for all breech presentations was 87.2%. Most of the remaining breeches delivered vaginally were second of the twins and precipitous deliveries.

The mode of delivery in breech presentation were influenced by various factors in our institute like the age, parity, type of breech, estimated foetal weight, phase of labour, in which the patient in presenting with, booked status of the patient, the fetal condition at the time of presentation, the associated complication of the mother, the inherent complications of breech like PROM and cord prolapse, the gestational age of the fetus and associated fetal anomolies.

Each case in individualised and the mode of delivery is chosen depending upon the various factors.

Age in relation to the mode of delivery

In our study of 100 cases with breech presentation, the age of the patient as such does not seem to influence the mode of delivery. The maximum no of cases (46%) is distributed in the age group of 21 – 25 and the next (26%) falling in the range of 26 – 30. Only 3 cases fall in the range of above 35.

But if the age of the patient increases, the fetal morbidity and the course of delivery as in elderly primigravida, it is added as an additional risk factor for the mother, which itself then influences the mode of delivery.

Parity and previous type of delivery in relation to the mode of delivery

Parity – multi parity itself due to pendulous abdomen, sometimes predisposes to breech presentation. In our study 59% of the cases were multipara. The mode of delivery in these multipara, largely depends on the previous type of delivery.

In a randomized control study 71 cases at US, assisted vaginal breech delivery has found to be safe following LSCS. Two serious complications, serious haemorrhage and birth injury of the fetus are met with . But in our institute it is not followed.

If it is a recurring breech presentation with previous assisted breech delivery, with good fetal outcome, make as to move towards assisted breech delivery again provided there should not be any associated complications.

In our study we had come across, 5 such cases with H/o previous assisted breech vaginal deliveries with good fetal outcome submitted to vaginal deliveries with good prognosis.

If it is a full term normal delivery, then again, the mode of delivery choosen either for vaginal or LSCS influenced by other factors like EFW, gestational age and type of breech and other associated complications.

68.9% of these patients with previous FTND delivered vaginally and 31.1% were submitted for LSCS. After correction of the associated complications, the present mode of delivery is for vaginal deliveries in cases with previous H/o FTND.

If it is a case of previous caesarian section, then considering into the inherent complication, related to the post caesarean pregnancy like scar dehiscence and scar rupture intrapartum, vaginal delivery is avoided and Rpt LSCS is practiced even if some factors like fetal anomalies exists in a mature baby.

In our study also out of 4 cases of previous LSCS, 3 underwent Rpt LSCS and one allotted for vaginal delivery and it was mainly due to its extreme prematurity (26 weeks).

In patients with previous H/o abortion, it adds a risk factor for those patients and hence elective LSCS are chosen for them. But in our study 5 cases with previous H/o abortion, were submitted to vaginal deliveries and because all of these patients presented late in labour with other factors favourable for vaginal delivery.

Type of breech and mode of delivery

In the extended type of breech, the fetal outcome is better, because the inherent complications of breech in PROM and cord prolapse are less, hence they favor more for vaginal deliveries. In those cases the breech is well fixed and rules out fetopelvic disproportion.

In our study, the extended type of breech, ranges second (43%) proceeded by flexed breech. Out of these 43 cases 81.4% were subjected to assisted breech vaginal deliveries and only 18.6% underwent LSCS. Of this 18.6%, 85% were associated with other maternal complications which led them to LSCS.

The flexed type of breech ranges first (54%) in its distribution in our study. Since the inherent complications, like pulsatile cord

prolapse and PROM are common in these type of breech, LSCS is liberalised in these type of case in previous studies.

But only 51.9% of are submitted to LSCS in our set up and 48.1% were allotted for vaginal deliveries, the reason being, most of the cases of flexed breech are associated with multiple pregnancy and pre maturity. Hence after correcting all of these factors, we are for LSCS in these cases, for good fetal outcome.

One more factor, leading to flexed breech cases to vaginal deliveries, is cases which presents well in labour as an unbooked multipara with good obstetric history without ruling out anomalies.

In the footling breech type, the fetal outcome is gloomy. We came across 3 cases of footling of which 2 were submitted to vaginal deliveries because the fetal condition is already of impending death and one of then subjected to LSCS with good fetal condition and outcome.

Fetal mortality in relation to the mode of delivery

In a population based study, the vaginally delivered babies had higher mortality compared with caesarean babies.

In a large multicenter, prospective, randomized controlled trial, lower rate of perinatal and neonatal mortality (1.6% in LSCS cases compared with 5% in vaginal births).

The uncorrected foetal mortality in patients delivered by assisted breech was 25% in our study. The foetal mortality for abdominal delivery was 2%. The fetal mortality in most of these cases are fetal asphyxia and pre maturity.

Correcting the fetal anomalies and prematurity the fetal mortality in our study of vaginal breech deliveries was 7% and the fetal mortality by LSCS was nil which was significant.

Fetal morbidity V/s mode of delivery

The incidence of fetal morbidity in our cases is 3%. Of these 2 cases presented with Erb's palsy and one with intracranial birth injury. Of these the foetal mortality toll and was one case (35%). The remaining two cases the babies were alive. To be noted the mode of delivery in all cases with fetal morbidity was vaginal deliveries.

Fetal outcome and duration of labour

There is difference of opinion in this aspect of study. Hay and Calken reported that the duration of second stage of labour with mature babies in primigravida was 60 minutes. The average duration of second stage of labour in multi was 35 – 40 minutes. John Studd says that the duration of labour is shortened in extended breech compared with flexed breech as the compact extended breech in the lower pole promoted cervical dilatation.

Contrary to the older teaching the 1st stage of labour is not unduly prolonged. It lasted less than 12 hrs in 53% of primi and 77.2% of multi with mature singleton breech delivery. It is certainly unwise to allow the 2nd stage to continue beyond the time at which satisfactory advance is occuring and 30 min after the full dilatation, the case should always be reviewed by an experienced attendant. Partogram provides clear warning if progress is inadequate and labour may be augmented with oxytocin infusion if prior assessment has excluded disproportion.

Congenital anomalies in breech presentation

Incidence of congenital anomalies breech is 2 – 3 times more than in cephalic presentation. The incidence of fetal anomalies in the series studied was 10%. The general incidence of fetal malformation in Government Rajaji Hospital is 1%.

To be noted all such cases were submitted to vaginal deliveries, except one, which was an unbooked multipara with full term flexed breech with PROM.

Multiple pregnancy and breech presentation

In general the incidence of breech presentation at the time of delivery was more in twin pregnancy. In our series, multiple pregnancy contributes to 14% of breech presentation.

Some hold the view that if first of the twin was breech, then the case is for elective LSCS. We also adhere to the concept of the patient come in early labour or if she is not in labour.

But here, in our institute, we have come across cases with first of the twin with breech presentation, with patient well in labour. In such cases, we are not for LSCS. Rapidly ruling out the other associated risk factors we allow them for vaginal deliveries. Since in these cases of twin pregnancy the estimated fetal weight of these babies were less than mature singleton babies, they would not produce any fetopelvic disproportion, or difficulty in after coming head but the fetal morbidity has to be considered. After correcting prematurity, the fetal mortality due to birth asphyxia is relatively less in these cases compared to the full term singleton mature breech babies delivered vaginally.

Our study also implies that the fetal mortality has more than 80% in babies weighing less than 2 kg in these twin babies.

In cases of first of the twin presenting by vertex and second by breech, in our institution, in all our cases, we conducted assisted breech deliveries without any major complications. The most expected complication in these cases is cord prolapse but we have not come across with such a complication even in a single case.

The favourable factors for vaginal deliveries in these cases are patients with full cervical dilatation and the E.F.W is less than 2.5g and babies are with well flexed heads and we delivered all those cases without difficulty. As we already noted the total morbidity in these babies, were due to fetal prematurity and not due to birth asphyxia of AB delivery.

In cases of first of the twin with vertex and second presented by transverse lie, we tried IP version in these cases successfully. But we had not come across with such a case in our study.

Type of breech deliveries

The art of assisted breech delivery is the same in both the vaginal as well as LSCS. In our study of 100 cases, out of 63 cases of vaginal deliveries we have conducted AB for 55 %. Of 63 cases two

were breech extraction. Six of these 63 cases were spontaneous breech delivery.

The mode of breech deliveries varies upon the cases mainly due to the following factors

- Actual weight and type of breech - most of the flexed and extended type of breech were for assisted breech deliveries.
- Out of the breech extraction, the weight was > 3 kg and the type of breech was extended type, favouring the impaction of breech in these cases.
- In other spontaneous breech delivery cases, the factor which commonly influences were the prematurity and IUD.
- In all of the cases of spontaneous breech delivery our EFW < 1.5 kg.

Fetal weight and the mode of delivery

In our institutions, the main factor, making us to choose the mode of delivery is fetal weight. Though other factors like stage of labour and type of breech are in favour of vaginal deliveries the cases are delivered vaginally only if the EFW is less than 3 kg especially in primigravida.

We have come across the cases of difficulty in after coming head with babies > 3 kg in primi paras with bad fetal outcome. In our study out of 63 cases 18.5% (18 cases) are < 2 kg and allowed for vaginal deliveries and only one case for LSCS.

The mode of delivery with EFW in the range of 2.5 kg – 3 kg was vaginal in 33.3% of cases, whereas it is 40.5% in LSCS. Similarly, in the range of EFW 3 – 3.5kg only 14.3 of cases were allowed vaginal delivery and 35.1% cases were taken up for LSCS. In EFW of > 3.5 kg, 2 (3.2%) were allowed for vaginal both which were IUD and 2 cases (5.4%) were allotted for LSCS.

Also in multigravida, with EFW 3 kg we have tried vaginal deliveries if other factors like stage of labour and adequate uterine contraction and if there is no fetopelvic disproportion patient delivered babies > 3.5 kgs with good fetal outcome. Thus birth weight of the baby plays a main role in the mode of delivery in breech presentation, especially in primi gravida.

Stage of labour and mode of delivery

In our institution, the stage of labour, plays a main role in deciding the mode of delivery in breech presentation. As most of these are unbooked cases coming late in labour without ruling out

congenital anomalies which were common in these malpresentation, we are in favor of vaginal deliveries.

In our study of 100 cases, out of 63 cases of vaginal deliveries 62 cases came late in labour and one is not in labour. Of all the 37 LSCS cases, all of them came early in labour and have taken up LSCS, implying that it supports the modern trend for caesarean section for all cases of breech presentation.

Booked and Unbooked Cases

The booking and the unbooking of cases plays a significant role in deciding the mode of delivery. In our 100 cases, 57 were unbooked cases out of which 77.2% were subjected to vaginal delivery, as congenital anomalies has not been ruled out in all these cases and only 22.8% were subjected to LSCS.

And out of 43 booked cases 55.8% were subjected to LSCS and 44.2% for vaginal delivery, the main factor being then 44.2% of patients came late in labour. Thus this factor stands statistically significant.

Gestational Age and Mode of delivery

In a study held worldwide comprising 187,627 cases caeserean delivery was conducted for more than 80% of cases in most gestational age groups.

In our study 91.9% of cases delivered by LSCS were > 36 weeks gestational age and only 54% of cases delivered vaginally were of the same gestational age.

About 30.1% of cases delivered vaginally were of 32 weeks and less and nil cases were delivered abdominally of the same gestational age. In our institution, because of the prematurity and poor fetal outcome we have to go in favour of vaginal delivery for premature babies. Thus gestational age is statistically significant, in deciding the mode of delivery.

Associated complication and mode of delivery

Out of study cases of 100, 71% of cases delivered vaginally were associated with maternal complications and 97.3% of cases delivered abdominally were associated with maternal complications, thus becoming statistically significant.

The 71.4% of cases delivered vaginally were governed by other factors like prematurity, stage of labor etc.

PROGNOSIS

Mother: The maternal morbidity is slightly higher than in vertex presentations because of the increased incidence of interference.

Child : There is no doubt that, as far as delivery is concerned, vertex presentation is the safest for the baby. The fetal mortality in breech delivery shows wide variations – from two percent to 30 percent. The is mainly due to the fact that in quite a number of cases, there are complicating factors which by themselves increase or add to the fetal risk. Hence it is necessary, when assessing the inherent risk to the fetus in breech deliveries, to discard the accentuating factors and then assess the risk.

For this purpose, it is customary to divide breech delivery into two main groups. The complicated breech and the uncomplicated breech. Complicated breech implies delivery associated with factors detrimental to the foetus namely prematurity, maternal toxemia, antepartum hemorrhage, fetal abnormalities, contracted pelvis and maternal diseases like hypertension, cardiac disease, etc.

In the uncomplicated breech deliveries, there are no extraneous factors which affect the fetus adversely. Extended legs, extended arms, prolapse of the cord, difficulty in delivering the after-coming head, are risks inherent in a breech delivery and these should not be classified as complicated breech if they occur during delivery. The following factors must be taken into consideration in assessing the fetal risks.

1. **Age and parity of the mother**: Breech in a primigravida is associated with a higher fetal mortality. If the primigravida is over 30 years of age, the fetal mortality would appear to be still greater.
2. **The weight of the baby**: Fetal mortality is higher in infants of less than 2.5kg and more than 3.5 kg. In the former, it is due to prematurity, while in the latter it is due to difficulties encountered during delivery.
3. **The type of breech**: Extended breech has slightly less fetal mortality than flexed breech, the reason being that in the latter condition the prolapse of the cord and expulsion of the breech before full cervical dilatation are more common, which endanger the fetus.

4. **Pelvic configuration**: High fetal mortality should be anticipated in patients with android pelvis or midcavity contractions.
5. **Uterine dysfunction**: If the labour is complicated by abnormal uterine action, fetal mortality is enhanced.
6. **Other complications**: Any maternal or fetal complications will adversely affect the fetal mortality.
7. **The skill of the obstetrician**: Especially in breech delivery, the skill of the attending obstetrician will make all the difference to the fetus. There is no doubt that the less skilled the obstetrician, the greater is the fetal mortality.

The mortality is further enhanced by injuries that are sometimes inflicted on the child during delivery. Intracranial hemorrhage due to tentorial tears is a common cause of fetal death in breech delivery. Fracture of the long bones – femur and humerus – are met with in difficult breech deliveries. Asphyxia is a prolific cause of fetal death.

Modern trends in Management of Breech Presentation

Regarding external cephalic version, there are two schools of thought. the advocators for external cephalic version say that there is a decreased mortality by this procedure. The mortality in vertex presentation is less than 1%. The mortality in breech presentation is

about 3%. The mortality due to external cephalic version is 1%, There is a place for trial labour if the breech is converted into vertex in mild disproportion. The opponents argue that the persistence of breech presentation near term denotes some etiological factor responsible for it and if it is destined to have spontaneously corrected into vertex, it would have done on its own.

Liberalised Caesarian Section for Breech

Soni (1931) was the first to suggest caesarian section for reduction of foetal mortality in breech presentation. Caesarian section rate for breech presentation is markedly increased in other countries – In Sweden and USA the caesarian rates for breech were 92.8% and 82.3% respectively. The foetal mortality in abdominal delivery is markedly reduced . Most obstetricians do not favour caesarian section for all breech presentations. Vaginal delivery is recommended in younger women with adequate pelvis, average sized baby, extended breech and with no associated medical or obstetric complications. In those where the baby is larger, over 3.5 kg, fooling presentation, hyper extension of head associated complications like IUGR, PIH, APH, diabetes etc., elective caesarian is better (Ritchie 1986, Bingham et al 1987, Myers and Gleicher 1988). In all such cases congenital foetal anomalies have to be ruled out by earlier ultrasonography.

Based on the multicenter trial the ACOG published a committee opinion in 2001 that stated 'planned vaginal delivery of a singleton term breech may no longer be appropriate'.

Caesarian section for premature babies

R.J.Pepper et al (1979) says, with liberalised caesarian section in premature infants, the survival rate in premature babies has increased upto (80-98%) depending on the foetal weight with a good premature unit. Westgren and Paul (1985) stated that intraventricular hemorrhage is the most common neurological complication in pre-term infants and suggested that caesarian section may have a preventive or protective effect.

Retrospective analysis in 2003 shows a higher mortality rate in neonates of 26-32 W, delivered by LSCS than the neonated of ≥ 32 wks. Thus fetuses of ≥ 32 wks may be benefited by LSCS.

In our hospital, because of the lacking facilities in premature unit as well as socio-economic problems, caesarian section was not adopted for premature breech presentation.

The place of caesarian section

We propose to discuss only the indications for caesarean section for a primary breech presentation, that is, where there are no other

etiological factors like contracted pelvis, which indicate caesarean section.

1. It is now customary to consider resorting to caesarean section when the fetus in large, that is over 3.5 – 4 kg.
2. If uterine inertia persists for some hours after rupture of the membranes, caesarean section may be the better line of treatment. The question of stimulation by a controlled intravenous oxytocin drip may be thought of, if the pelvis is quite normal and the fetus of average size. It is unwise to wait too long to decide in the presence of inertia – not longer than 24 hours – before taking a final decision. It is also not desirable to allow the woman to be in labour for more than 12 hours after rupture of the membranes.
3. Elderly primipartiy and pre-eclampsia usually point to caesarean section.
4. Non-engagement of the breech even late in labour after rupture of the membranes is better dealt with by caesarean section as it is often due to disproportion between the pelvis of the mother and the breech. Failure to progress in the first stage of labour

and failure of descent of breech in the second stage are signs indicating caesarean section.

5. Prolapse of the cord when the cervix is only partially dilated and the fetus is in good condition is an indication for caesarean section.
6. Hyperextension of the fetal head.
7. Bad obstetric history.
8. Intra-uterine growth retardation.
9. Diabetes
10. Previous difficult labour

CONCLUSION

In an U.S cohort, African - American breech singletons are less likely to be delivered vaginally.

In our study of 100 cases, 63 cases were delivered vaginally and 37 abdominally.

The mode of delivery is influenced by various factors like type of breech, previous type of delivery, stage of labour, gestational age estimated fetal weight, multiple anomalies of the baby and associated complications.

After deleting the factors like gestational age, extreme prematurity of the fetus, stage of labour, anomalies of the baby, , associated complication there are certain other independent factors, which lead us to deliver the baby vaginally.

Those were the types of breech, estimated fetal weight and the previous type of delivery if they are in the multiparous women.

Considering the fetal outcome, the outcome in the vaginal deliveries is gloomy compared to the abdominal deliveries.

Ruling out the confounding factors for fetal mortality like extreme prematurity, anomalies and associated maternal complications,

the inherent complication of the vaginal breech deliveries are present in our study.

The fetal mortality after ruling out the confounding factors in those who were delivered vaginally is 7% and for those who were delivered abdominally is nil.

Thus we conclude by favouring of abdominal deliveries as the fetal outcome in abdominal deliveries is good and statistically significant than vaginal deliveries.

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PROFORMA

STUDY OF MODE OF DELIVERY IN BREECH PRESENTATIONS

I.P. No. :

Address :

Date of Admjssion :

Date of Delivery :

Date of Discharge :

Uneducated / Primary / S.S.L.C. /HSC / Co11ege :

Urban / Rural :

Obstetric Code :

Previous type of delivery :

Booked / Unbooked :

Menstural History :

LMP :

EDD :

Married Since :

H/O Consanguinity :

Diagnosed at a) 34—36 weeks

b) term

c) In labour GRH/outside referral

Associated maternal complications :

Multiple pregnancy :

Placenta praevia :

Accidental haemorrhage :

PIH :

Eclampsia :

Anaemia :

Post Caesarian Pregnancy :

Diabetes :

Hydran :

Bad Obstetric History :

Rh incompatibility :

P/A — Uterine size :

Liquor :

FH :

Estimated baby wt. :

P/V Cervical effacement :

dilatation of cervix

Status of memb

Type of breech

station of breech

pelvis

Foeto pelvic disproportion

Nature of liquor

Colour

Smell

Investigations

Urine - Albumin

Sugar

Deposits

Blood - Hb gm%

Blood grouping and typing

Plain X-ray abdomen

USG - presentation

- cardiac activity

- foetal movement

- BPD
- FL
- Liquor
- Placenta
- Anomalies — uterine
  foetal

During labour

1st stage

Duration

Memb ruptured PROM / Full dilatation

Cord prolapse Yes / No.

Pulsation - Present / Absent

LSCS / Synto for / Spontaneous Acceleration Contractions

Ind for LSCS

II Stage

Duration

Spontaneous expulsion / Assisted breech

Any difficulty in delivery of

Breech :

Shoulder :

Arms :

After coming head :

III Stage

Duration :

Prophylactic methergine Yes / No.

Atonic PPH :

Traumatic PPH :

BABY

Wt in Kg. :

Apgar Score : 1'-

5' -

Congenital anomalies

Hydrocephalus : Yes / No.

Diagnosed : AN / IP / After delivery

Craniocentesis : Yes / No.

Abdominal / vaginal

Through spines / After coming head

2. Anencephaly : Yes / No.
3. Shoulder dystocia : Yes / No.
4. Spina bifida : Yes / No.
5. Meningococle / Myeiococle / Encephalocele
6. Talipes equ Varus
7. Others

Admitted in Preterm ward

Indication