

MANAGEMENT OF BREECH PRESENTATION AT TERM

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ABSTRACT

The management of 159 consecutive women with singleton breech presentation occurring at 37 or more weeks of gestational age was reviewed. They were stratified into three groups: (a) caesarean section without trial of labour (87), (b) trial of labour resulting in caesarean section (21), and (c) trial of labour culminating in successful vaginal delivery (51). The criteria for allowing a trial of labour were described. Careful review of material and foetal variables indicated that a trial of labour in carefully selected patients resulted in vaginal delivery in 70.8% and that this was achieved without an increase in foetal or maternal mortality or morbidity.

Keywords: breech presentation, trial of labour, caesarean section, foetal and maternal mortality and morbidity

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INTRODUCTION

Management of breech presentation at term has been a subject of great controversy in the last 2 decades. In the past, many studies had shown an increase in neonatal and perinatal morbidity and mortality in vaginal breech delivery⁽¹⁻⁴⁾. These studies were, however, uncontrolled and did not differentiate between preterm and term breech. More recent studies on term breech deliveries have shown no difference in neonatal outcome in carefully selected patients^(5,6).

Caesarean section rates for breech presentation have meanwhile skyrocketed in many centres ranging from 80-100%. Many obstetricians practise and promote routine caesarean section for all breeches. The reasons are namely, the safety of elective caesarean section, availability of good neonatal care for premature babies and fear of litigation.

However, caesarean sections not only carry increased risks of morbidity and mortality but are also associated with a substantial increased need for hospital and professional resources resulting in higher economic cost. Although it may be argued that this cost increase is warranted to prevent mortality and morbidity of the infant, it is still very important to continue to examine the conditions under which unnecessary caesarean sections can be avoided without increasing harm to the infant. It must be remembered that a patient who has a caesarean section is more likely to have a repeat caesarean section in her next pregnancy thus exposing herself to the repeated risks of the operation.

This review was carried out to study the management and outcome of the term breech delivery in our department. Our department advocates a policy of a trial of labour for patients meeting our strict selection criteria rather than a policy of routine caesarean section. We do not routinely do external cephalic version for breech presentation. We hypothesise that this selective approach can be achieved without an increase in perinatal morbidity and mortality. We further hypothesise that such an approach will lower the incidence of caesarean section.

Aim

The aim of this study is to study the maternal and neonatal outcome and complications with regard to our selective approach for management of term breeches and to evaluate the above hypothesis.

PATIENTS AND METHODS

We reviewed all cases of term breech deliveries conducted in our department of Kandang Kerbau Hospital during a one-year period from 1 January 1990 to 31 December 1990. Only cases at 37 or more weeks of gestation were recruited for analysis.

Three groups of patients were compared with respect to demographic factors, maternal and foetal outcomes. They were:

- (a) patients delivered by caesarean section without a trial of labour (Group 1),
- (b) patients allowed a trial of labour but were subsequently delivered by caesarean section (Group 2), and
- (c) patients with a trial of labour culminating in a vaginal delivery (Group 3).

There were 201 cases of singleton breech presentation of whom 161 had completed 37 or more weeks of gestation at the time of delivery. Gestational age was calculated on the basis of the last menstrual period and was confirmed by ultrasound scan in 43% of the cases and by neonatal assessment in all cases.

Our selection criteria for trial of labour were as follows:

- 1) An estimated foetal weight of 3.5 kg or less, either clinically, or by ultrasound scan.
- 2) A clinically adequate gynaecoid pelvis with the following features: the sacral promontory could not be tipped; the sacral curve was good; the ischial spines were not prominent; the pelvic side walls were parallel; the sacrosacral notch admitted 2 fingers; the subpubic arch was more than 90 degrees and the intertuberous distance was more than 4 knuckles (10 cm).
- 3) A radiologically defined anteroposterior diameter of the pelvic inlet of at least 11.5 cm.
- 4) An extended breech was preferred over flexed breech. Footling breech and those with an extended head were excluded.

Past obstetric history and any associated obstetrical and medical complications were taken into consideration when selecting the patients. Some obstetricians in the department did not allow a primigravida with breech presentation to undergo a trial of labour. Women were allowed to have a caesarean section if they wished after counselling and discussion.

If the breech presentation was identified before the onset of labour, clinical and X-ray pelvimetry were done to assess pelvic adequacy. Ultrasound scan was done to confirm presentation and the type of breech, to localise the placenta, to estimate foetal weight and to exclude foetal anomaly or pelvic pathology. The foetal weight was also estimated clinically.

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If the breech presentation was first identified during labour, it may not be possible to perform X-ray pelvimetry and ultrasound scan. Clinical examination of these unsuspected and unbooked cases was therefore very important in assessing the estimated foetal weight, the type of breech and the pelvic adequacy. Such patients were also given the options of a caesarean section or a trial of labour after explaining and discussing the various risks involved.

All patients undergoing a trial of vaginal delivery had an intravenous line in place and blood taken for haemoglobin and grouping and cross matching when in labour. Oxytocin was only used when necessary for either induction of labour in cases of prelabour rupture of the membranes or augmentation of labour in cases of documented inadequate uterine forces.

Foetal well-being was monitored continuously by electronic foetal heart rate monitoring. Vaginal examination was repeated every 4 hours or earlier when necessary to assess cervical dilatation, descent of the breech and to exclude cord prolapse. All findings were charted in the partogram. The delivery was conducted by the obstetrician in the operating theatre with ready recourse to caesarean section should it be necessary. An anaesthetist and a paediatrician were also present at the time of delivery.

The Apgar scores were assigned at one and five minutes by the paediatrician who also examined the baby for trauma and congenital abnormality. Depending on the clinical status, the neonate was admitted to either the ward nursery, or the neonatal intensive care unit. If the status deteriorated and the infant was transferred to the intensive care unit, the admission was recorded.

Perinatal death in this study was defined as the death occurring from the 37 weeks of gestation to discharge of the neonate from the hospital.

Maternal morbidity was evaluated by postpartum maternal complications including fever, urinary tract infection, wound infection, vaginal or uterine tear, blood loss at delivery, requirement of blood transfusion and of antibiotics. Fever was defined in the study as the maternal temperature of more than 37.5°C on 2 separate occasions. Urinary tract infection was diagnosed by urine microscopy. Antibiotics was not prophylactically prescribed to all patients. It was given to patients with the presence of signs and symptoms of infection. Bromocriptine was prescribed to mothers with breast engorgement and who refused breastfeeding.

Neonatal morbidity was evaluated by admission to neonatal intensive care unit, low Apgar scores at one and five minutes, birth trauma and duration of hospitalisation of the neonate.

Statistical analysis was performed with the "Epistat" statistical package. Analysis of variance was used for continuous variables and chi-square analysis for categorical variables. Statistically significant differences required a p value of <0.05.

RESULTS

A. Incidence and patients' characteristics

In 1990, there were 5,562 deliveries in our department of which 201 were breech presentations (3.61%). One hundred and sixty-one breeches (80.9%) had gestational age of 37 weeks or more. The incidence of term breeches was thus 3.22%.

Of the 161 term breeches, only 93 (57.8%) were identified before onset of labour, 7 (4.3%) were unbooked cases and the remaining 61 (37.9%) were unsuspected antenatally.

Eighty-five patients in the study group (52.8%) were Chinese, 57 (35.4%) were Malays, 15 (9.3%) were Indians and 4 (2.5%) were others. The racial distribution was similar to that of our obstetric population. (Table I).

Forty-three patients (26.7%) were at 21-25 years age group, 51 (31.7%) were at 26-30 years age group and 41 (25.5%) were at 31-35 years age group. The age distribution pattern of the study group was also similar to that of our obstetric population. (Table II).

Table I - Racial distribution of the mothers with term breech presentation in labour (n=161)

Race	Breech Presentation (%)	Pregnant Population (%)
Chinese	85 (52.8)	50.2
Malays	57 (35.4)	36.6
Indians	15 (9.3)	9.4
Others	4 (2.5)	3.8
Total	161 (100.0)	100.0

Table II - Age distribution of the mothers with term breech presentation in labour (n=161)

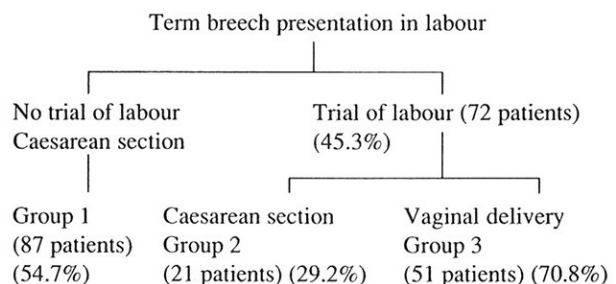
Age Groups (years)	Breech Presentation (%)	Pregnant Population (%)
20 or less	7 (4.3)	5.1
21 - 25	43 (26.7)	22.2
26 - 30	51 (31.7)	36.2
31 - 35	41 (25.5)	25.8
36 or more	19 (11.8)	10.7
Total	161 (100.0)	100.0

Sixty-five patients (40.4%) were nulliparae and 96 (59.6%) were multiparae in the study group. There were significantly more nulliparae with term breech presentation in the study group as compared with the 30% nulliparae in our obstetric population ($p < 0.05$). Fifteen of the 96 (15.6%) multiparae with term breech presentation had a past history of breech delivery.

Of the 161 term presentations, 76.5% were extended, 11.1% were flexed and 12.4% were footling.

B. Management of term breech presentation in labour

Fig 1 - Clinical course of 161 term infants in breech presentation



* Two women delivered vaginally prior to the scheduled caesarean section and were not included in the study.

The clinical course of 161 term breech presentations during the year 1990 is depicted in Fig 1. Two women delivered vaginally prior to the scheduled caesarean section. They were excluded from further analysis. Eighty-seven patients (54.7%) were delivered by caesarean section without a trial of labour. The indications for elective/emergency caesarean section without trial of labour are listed in Table III. The four most frequently cited indications were small pelvis, primigravida, pre-

vicious caesarean section and footling breech presentation. The other less common indications included large infant, patient's choice, flexed breech, cord presentation, cord prolapse, elderly patient and the associated obstetric complications. Seventy-two patients (45.3%) underwent a trial of labour (Fig 1). Twenty-one of them (29.2%) failed the trial and were subsequently delivered by emergency caesarean section. The indications for surgery were abnormal labour progress in 14 patients (66.7%), foetal distress in 3 patients (14.3%) and cord prolapse or presentation in 4 patients (19%) (Table IV). The remaining 51 patients (70.8%) had successful vaginal delivery.

Table III - Indications for caesarean section without a trial of labour (n=87)

Reasons	Number
Small pelvis	19
Primigravida	18
Previous caesarean section	13
Footling breech	13
Large infant	8
Patient's choice	6
Flexed breech	3
Cord presentation/prolapse	2
Elderly	1
Others (eg associated pre-eclampsia/diabetes mellitus)	4
Total	87

Table IV - Indications for emergency caesarean section in women who had a failed trial of labour (n=21)

Reasons	Number	Percent
Abnormal labour	14	66.7
Foetal distress	3	14.3
Cord presentation	4	19.0
Total	21	100.0

C. Pre-delivery maternal and foetal variables

Table V details variables that might influence the choice of method of delivery. Patients in the vaginal delivery group (Group 3) were generally younger and taller. There were fewer footling or flexed breech and fewer nulliparae as compared to the caesarean section group (Groups 1 and 2).

Comparing Group 1 with Groups 2 and 3 (the vaginal trial groups), the pelvic measurement (inlet-antroposterior diameter) was significantly smaller in Group 1. The estimated foetal weight was also significantly larger in Group 1 and the gestational age at delivery was earlier in Group 1.

D. Labour and delivery variables

The method of delivery used in the 51 patients delivered vaginally was assisted breech delivery with the use of forceps for the aftercoming head in 5 of them.

The successful vaginal delivery group (Group 3) had a significantly shorter length of labour than the group with failed trial of labour (Group 2) (Table V).

Oxytocin was used in 8 of the 51 patients (15.7%) who had successful vaginal delivery. It was used for induction of labour in one and augmentation of labour in 7 patients.

Table V - Pre-delivery labour and delivery maternal and foetal

Variables	Group 1	Group 2	Group 3
	No trial of labour	Trial of labour	
	Caesarean Section (n=87)	Caesarean Section (n=21)	Vaginal Delivery (n=51)
Maternal age (year)	28.9 ± 5.10	29.1 ± 5.98	28.5 ± 5.59
Nulliparous (%)	38	11	15
Height (cm)	153.5 ± 5.83	153.6 ± 4.46	154.8 ± 4.71
Footling or flexed breech (%)	32.2	33.3	15.1
Pelvimetry (cm) Inlet-antroposterior*	10.9 ± 0.71	11.7 ± 0.61	12.0 ± 1.20
Estimated foetal weight (gm)*	3320 ± 287	3120 ± 340	3035 ± 197
Length of labour (hour)*	-	8.1 ± 6.21	6.1 ± 5.04
Gestational age at delivery (week)*	38.6 ± 0.90	39.2 ± 1.28	39.1 ± 1.29

*p<0.05

Table VI - Maternal outcome variables

Variables	Group 1	Group 2	Group 3
	No trial of labour	Trial of labour	
	Caesarean Section (n=87)	Caesarean Section (n=21)	Vaginal Delivery (n=51)
Maternal hospital stay (day)**	6.8 ± 2.04	6.7 ± 1.49	2.3 ± 0.69
Estimated blood loss (ml)*	403 ± 178	450 ± 140	160 ± 43
Transfusion (%)	5(5.7)	0(0)	0(0)
Fever (%)*	34(39.1)	7(33.3)	2(3.9)
UTI*	19(21.8)	5(23.8)	3(5.9)
Wound infection (%)	4(4.6)	0(0)	0(0)
Antibiotics (%)**	47(54)	14(66.7)	8(15.7)
Uterine tear (%)	2(2.3)	1(4.8)	0(0)
Vaginal tear (%)	0(0)	0(0)	3(5.9)
Bromocriptine (%)*	33(38.0)	8(33.3)	5(3.9)
MRP (%)	0(0)	0(0)	1(2)

* p< 0.05

** p<0.001

E. Maternal outcome variables

The caesarean section group (Groups 1 and 2) had a significantly longer hospital stay and greater blood loss compared to the vaginal delivery group (Group 3). The caesarean section group (Groups 1 and 2) also had significant increased rates of postpartum febrile episodes and urinary tract infection with resulting increased usage of antibiotics. Bromocriptine prescriptions for suppression of lactation were significantly increased in the caesarean section group.

There were no significant differences of maternal complications of caesarean section in between emergency and elective groups (Groups 1 and 2) in this study (Table VI).

Complications associated only with caesarean section included abdominal wound infection (0.5%) and uterine tear (2.3-4.8%) while complications associated with vaginal delivery in-

Table VII - Neonatal outcome variables

Variables	Group 1	Group 2	Group 3
	No trial of labour	Trial of labour	
	Caesarean Section (n=87)	Caesarean Section (n=21)	Vaginal Delivery (n=51)
Actual birth weight (gm)*	3105 ± 437	3396 ± 461	3033 ± 371
Apgar score at 5 mins			
0-3 (%)	0 (0)	0 (0)	1 (2)
4-6 (%)	0 (0)	1 (4.8)	0 (0)
7-10 (%)	87 (100)	20 (95.2)	50 (98)
Neonatal hospital stay (day)	3.5 ± 5.38	4.1 ± 5.05	2.5 ± 3.03
Admission to NICU (%)	4 (4.6)	1 (4.8)	2 (3.9)
Birth trauma (%)*	0	1 (4.8)	6 (11.8)
Perinatal death (%)	0	0	0*

*p<0.05

Table VIII - Neonatal trauma - 7 cases

Variables	Group 1 (n=87)	Group 2 (n=21)	Group 3 (n=51)
Bruise over buttock/vulva/scrotum	0	0	4
Scrotal/vulval swelling	0	1	1
Facial and periorbital swelling	0	0	1
Total	0	1	6

cluded vaginal tear (5.9%) and manual removal of placenta (2.0%) in this study.

F. Neonatal outcome variables

There were significant differences among the 3 groups with respect to birth weight (Table VII). Those who had a failed trial (Group 2) had significantly heavier babies than the other 2 groups.

The differences in 5 minutes Apgar score among the 3 groups were not significant. The incidence of admission to the neonatal intensive care unit was similar in the 3 groups.

With respect to birth trauma, there were significantly more recorded cases in those infants delivered vaginally (Table VIII). However, the difference was from an increased frequency of bruising and swelling in the Group 3 infants. There was no major trauma and perinatal deaths in the study groups.

G. The caesarean section rate

There were 159 cases of term breech presentation in this study and 51 of them had successful vaginal delivery hence the overall caesarean section rate for term breech in the study was 68.5%.

Twenty-one out of the 72 patients who had attempted a trial of labour had a subsequent caesarean section. Hence, the caesarean section rate for those who had a trial of labour in this study was 29.2%.

The caesarean section rate for all deliveries in our department in 1990 was 13.6%. The overall incidence of breech presentation was 3.61%. Breech was the indication for caesarean section in 14.1%.

DISCUSSION

The incidence of breech presentation varies with foetal matu-

riety. Scheer & Nubar⁽⁷⁾ reported a 5% incidence at 40 weeks. Our study showed that the incidence of term breech presentation occurring at 37 weeks or more was 3.2%.

This study had also revealed a 15.6% incidence of previous breech delivery in multiparae with a term breech presentation. This is comparable to the 14% incidence reported by Friedman⁽⁸⁾. 76.5% of the term breeches were extended in this study, consistent with that reported by Ritchie⁽⁹⁾. Only 57.8% of the term breeches in this study were identified before onset of labour which was similar to that reported by Flanagan et al⁽¹⁰⁾ in California, USA. In extended breech presentation, the muscles of the thighs are drawn taut over the underlying bones giving an impression of hardness not unlike the head and leading to diagnostic errors. In addition, it was possible that a small proportion of them might have converted to breeches in the last 2-3 weeks of gestation.

Over the past 2 decades, the percentage of breech infants delivered by caesarean section in many centres has increased from 10% to in excess of 80%. Green et al⁽¹¹⁾ reported a 90% caesarean section rate for term breech presentation. The data reflected in our study have shown that with careful selection of patients we can reduce the incidence of caesarean section in term breech presentation to 68.5% without increasing perinatal mortality and morbidity. A trial of labour in selected patients resulted in vaginal delivery in 70.8% of the patients in this study and this was achieved without an increase in foetal or maternal mortality or morbidity. This finding is in agreement with the study by Flanagan et al⁽¹⁰⁾.

The estimation of foetal weight forms an important part of decision making to allow vaginal delivery in breech presentation. The clinical weight estimation of a foetus presenting by the breech may be difficult and inaccurate. The concomitant use of measurement of the circumferences and diameters of the head, thorax and abdomen as well as ultrasonic foetal weight estimation may be more accurate and help in prewarning possible difficulties at delivery^(12,13). For foetal weight between 1000-1500 gm, caesarean section appears to confer advantage⁽¹⁴⁾. Foetal weight above 4000 gm is considered large with a reported increased risk of traumatic morbidity and mortality⁽²⁾. We have chosen an upper limit of foetal weight of 3500 gm in our local setting as our women are shorter and have a smaller pelvis compared to those in America and Europe.

Extended breech was preferable for trial of vaginal delivery because it has the lowest incidence of cord prolapse. The incidence of cord prolapse in extended breech is 0.5% which is similar to that of the cephalic presentation. In contrast the incidence of cord prolapse in footling breech is 15 to 18% and that in flexed breech is 4-6.3%⁽¹⁵⁾. Difficulty in delivering the unmoulded aftercoming head in an extended breech would also however be expected less often than in flexed and footling breech because with a foetus of average size the passage of the combined mass of both thighs and the foetal abdomen is only possible through a fully dilated cervix.

The pelvic inlet anteroposterior diameter of 11.5 cm or more was chosen so as to decrease the possibility of fetopelvic disproportions in assisted breech delivery. Furthermore, 11.5 cm is the occipito-frontal diameter of a breech with a slightly extended aftercoming head⁽¹⁶⁾. Flanagan et al⁽¹⁰⁾ have shown that carefully selected breeches can be safely delivered by vaginal route in women with a pelvic inlet anteroposterior diameter of 11.0 cm. Many obstetricians employ clinical assessment in conjunction with a single upright lateral X-ray pelvimetry⁽⁹⁾. However, O'Brien et al⁽¹⁷⁾ had shown that with excellent monitoring of both the mother and the foetus today, there was no clear-cut role existing for lateral X-ray pelvimetry in the diagnosis and management of fetopelvic disproportion.

Vaginal delivery for term breeches was offered as an option provided that the maternal pelvis was considered adequate and the baby was judged to be average size with no contraindications to vaginal delivery. However 6 out of 87 women opted for caesarean section with no trial of labour in this study. Although it is important for the obstetrician to actively counsel and educate all patients with breech presentation on the benefits and risks of the different modes of delivery, it is also equally important to respect the wishes of the patient concerned.

Only 57.8% of the term breech presentations were identified before the onset of labour in this study. This high incidence of unsuspected breech presentation at term infants also concurred with the report by Flanagan et al⁽¹⁾. Clearly in this study if the obstetrician wishes to decrease the caesarean section rate for term breech further, the presentation must be identified before the onset of labour. Late diagnosis allows less time to evaluate pelvic and foetal size and to explain options to the mother. With a high index of suspicion, careful antenatal clinical palpation and the help of an ultrasound scan, if necessary, as well as proper patient education, we hope to decrease the number of unsuspected and unbooked cases of breech presentation. Only with earlier diagnosis, can both the obstetrician and the patient be prepared for the proper selection and management of breech presentation in labour.

Patients who were felt to be candidates for a vaginal trial of labour had significantly larger pelvic measurements in this study. The estimated foetal weight was also significantly less in the vaginal trial group in this study. This is illustrated by the fact that 27% of the indications given for caesarean section without a trial of labour in the study group were "small pelvis" and "large infant". Undoubtedly these are very important factors which influenced the decision to proceed with caesarean section without a trial. These findings are also reported by Flanagan et al⁽¹⁰⁾. The actual birth weights however were markedly different. This demonstrated the difficulty in accurately estimating foetal weight before delivery both clinically and by ultrasonic measurements. The difference between the estimated and the actual foetal weights can be up to 450 gm⁽¹⁸⁾.

The length of labour was significantly shorter in patients who delivered vaginally. The mean duration of labour was 8.1 hours in those who had failed a trial of labour compared to 6.1 hours in those with a successful trial. An abnormal progress of labour in the presence of an adequate uterine activity is a contraindication to a continued trial as it is likely to be due to fetopelvic disproportion.

The use of oxytocin in breech presentation in labour is controversial. This study had shown that with close monitoring of both mother and foetus and adequate facilities for recourse to emergency caesarean section and neonatal resuscitation, the use of oxytocin for induction and augmentation of labour did not pose any increased risks to the mother and foetus. However the adequacy of pelvis and the inadequacy of uterine contractions must be established with reasonable reliability before commencing oxytocin. The judicious use of oxytocin should result in a satisfactory progress of labour (at least 1 cm per hour). If satisfactory progress of labour is not observed after such management for 2 to 3 hours, fetopelvic disproportion should be suspected and it may be better to err on the side of performing an abdominal delivery^(19,10).

The length of hospital stay was significantly longer in those delivered by caesarean section in this study as was reported by Donowitz & Wenzel⁽²⁰⁾. Women delivered by caesarean section stayed in the hospital on the average of 4.5 days longer than those who delivered vaginally. The estimated blood loss was significantly greater in those delivered by caesarean section in this study. On the average they lost 240 ml more than patients

who delivered vaginally. With respect to postpartum complications, patients delivered by caesarean section had significantly higher incidence of postpartum febrile episodes, urinary tract infections and use of antibiotics than those who delivered vaginally in this study. Hawrylyshyn et al⁽²¹⁾ reported an increased incidence of short term infections morbidity after caesarean section. The proportion of women requiring bromocriptine to treat breast engorgement as they refused breastfeeding was also significantly higher in women delivered by caesarean section than women delivered vaginally in this study.

The mean actual birth weights of babies delivered by emergency caesarean section after they had failed a trial of labour was significantly heavier than the other 2 groups. This probably accounted for the abnormal progress of labour in this group of patients. The higher incidence of trauma observed in those with a successful vaginal delivery are primarily those of minor bruising and soft tissue swelling. There was no increased incidence of major or significant trauma in the vaginal delivery group. All babies delivered by caesarean section regardless of a trial of labour, stayed in the hospital longer than those delivered vaginally. This excess stay mirrors the mother's stay and reflects a policy of keeping mother and newborn together whenever possible. This study had shown that the neonatal morbidity as assessed by 5 minutes Apgar score, admission to neonatal intensive care and major neonatal trauma was not different among the 3 groups. This was also reported by Gimovsky et al⁽⁶⁾.

CONCLUSION

The key to optimal management of term breech presentation in labour is early diagnosis of breech presentation before labour, careful patient selection for the trial of vaginal delivery, proper conduct of the trial of vaginal delivery with early recourse to caesarean section if necessary.

Obstetric judgement is of paramount importance in selecting cases for vaginal delivery and in conducting labour in a safe manner. Pelvic capacity must be assessed. The size of the foetus should be estimated clinically and preferably with the help of the ultrasound scan. Close intrapartum foetal surveillance, optimal uterine contractions with good progress of labour, adequate analgesia, a cooperative mother and delivery by an experienced and patient obstetrician are important in the achievement of a safe vaginal breech delivery. An anaesthetist and a paediatrician should be available at the time of delivery.

Allowing carefully selected patients the option of a vaginal delivery is a safe and cost-effective obstetric approach to term breech presentation in labour. The complications of caesarean section both short and long must be considered together with the gains from trial of vaginal delivery. Bingham and Lilford⁽¹⁹⁾ proposed that to optimise the benefits and minimise both maternal and foetal risks, it is best achieved by aiming for a 20-30% section rate among the group attempting vaginal delivery as was achieved in this study. However, as patients become more involved in clinical decisions that concern their own future, their own values are more likely to influence decision making.

The significantly increased maternal morbidity associated with caesarean section and our ability to deliver vaginally carefully selected cases of term breech presentation without any increase in perinatal mortality and morbidity as shown in this study is a testimony against the role of routine caesarean section for all term breech presentations. This study has also shown that the caesarean section rate in term breeches can be reduced by adopting a policy of a trial of vaginal delivery for carefully selected patients.

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5th Asian-Pacific Conference on Doppler and Echocardiography

organised by the Singapore Cardiac Society

Date: 6 – 8 August 1993

Venue: Level 6 (New Wing)

Mandarin Hotel, Singapore

Scientific Programme:

- * Plenary lectures
- * Symposia
- * Meet-The-Experts Session
- * Live Demonstrations

Scientific Highlights:

- * Doppler Echocardiography
- * Paediatric Transesophageal Echocardiography
- * Fetal Echocardiography
- * Intravascular and Intracardiac Ultrasound
- * Myocardial Contrast Echocardiography
- * Stress Echocardiography
- * Evaluation of Myocardial Ischemia
- * Role in Clot-attack and Balloon Era
- * Cardiomyopathies
- * Prosthetic Valve Dysfunction
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