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Singleton Breach Presentation Planned for Vaginal Delivery

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SUMMARY

A retrospective study of 156 consecutive cases of singleton breach presentation planned for vaginal delivery is presented. The incidence of caesarean section was not increased when compared with that for all Hospital and Clinic confinements. The perinatal mortality and prematurity rates were high. The incidence of cord prolapse was increased especially with the footling breech. The need for an experienced Obstetrician and Anaesthetist to conduct all deliveries was demonstrated. Factors influencing the assessment of feto-pelvic proportion and the occurrence of trauma and asphyxia in the management of breech labour and delivery are discussed. The continued place of external cephalic version is justified by the perinatal mortality rate.

INTRODUCTION

A reassessment of the management of singleton breech presentation and delivery has been taking place in major obstetric centres over the last decade. Fischer – Rasmussen and Trolle, 1967 in a six year retrospective study in Denmark found that in infants weighing 2,500 grams or more at birth the mortality rate of breech presentations planned for vaginal delivery was 5.5 times greater than for vaginal delivery in cephalic presentations. The British Medical Journal Leading Article, 1975 quoted similar results from the American literature. A more liberal policy towards caesarean section has been advocated in various centres (Morely, 1967; Fisher – Rasmussen and Trolle, 1967; Beischer, 1966). Taylor, 1975 advocated caesarean section as the method of delivery of choice for the term infant presenting as a breech. The British Medical Journal Leading Article, 1975 reviewed the current attitudes to breech birth with particular reference to fetal damage. Mphahlele, 1975 reported a retrospective study of breech delivery and fetal loss at Kitwe Central Hospital, Zambia, (1968 – 1970). The perinatal mortality was 24.4 per cent and the incidence of prematurity (infants 2,500 grams or less was 30.7 per cent. Kasonde, 1969 reported a similar study from Lusaka Central Hospital for the year 1967. The perinatal mortality for infants 5½ pounds (2500 grams) or more was 13.2 per cent and the incidence of prematurity (infants less than 5½ pounds) was 34.1 per cent. The investigational value of radiological pelvimetry combined with ultrasonic cephalometry has been discussed by Joyce et al., 1975.

MATERIAL

This study is a retrospective analysis of 156 consecutive singleton breech presentations planned for vaginal delivery at the Wusikili Mine Hospital and associated Mine Clinics during the three year interval 1973–1974. The procedure for antepartum and intrapartum care has been described elsewhere (Davis and Lochhead, 1976). 151 mothers delivered at the hospital and 5 mothers delivered at the Clinics 16 mothers 10.3 per cent) had received no antenatal care. Details were extracted from the Maternity Birth Registers and from the Nursery Register.

For the purposes of this study, the mother having her first viable pregnancy (infant 501 grams or more) has been called a nullipara and the mother with one or more previous viable pregnancies has been called a multipara.

The need for accurate medical records is again stressed (Lawson, 1971). It was not possible to determine the number of singleton breech presentations delivered by caesarean section because of other obstetric complications.

MANAGEMENT

During the three years under review, all mothers with a breech presentation of clinically 32 weeks gestation or more were referred to the Clinic, General Practitioner Obstetrician or the Author.

X-rays were performed in some cases to confirm the presentation, to exclude a multiple pregnancy or to exclude fetal abnormality. Radiological pelvimetry was not available. External cephalic version was attempted in all cases without established contraindications to the procedure, as often as was necessary to maintain a cephalic presentation. This was usually performed in the antenatal clinic without sedation. A few cases were admitted to Hospital for the procedure under sedation, but general anaesthesia was never used. The assessment as to suitability for vaginal delivery in the cases under review was made on admission in labour, usually by the Senior Midwife, by abdominal palpation of estimated fetal size, vaginal examination of pelvic diameters, cervical dilatation and the level of the presenting breech and observation of uterine activity. The policy was for the General Practitioner Obstetrician to be informed and it was his or her responsibility to see the case and to decide upon the further management. Narcotic analgesics with or without an additional phenothiazine derivative were used for analgesia and sedation in labour.

Regional anaesthesia by pudendal nerve block or perineal infiltration was used for delivery. Syntometrine (Sandoz) was given intramuscularly with the delivery of the aftercoming head, except in hypertensive mothers, when Syntocinon (Sandoz) was given and repeated after the 3rd stage was completed. Episiotomy was freely used to aid delivery.

RESULTS

Incidence

During the three year period 1973–1975, 2907 mothers were confined at Hospital and 8574 mothers were confined at Hospital and the Clinics. The Hospital incidence was 5.4 per cent and the total incidence for the obstetric community was 1.8 per cent.

Mode of Delivery

Assisted vaginal delivery was performed in 154 cases and lower segment caesarean section in 2 cases. No cases of breech extraction were recorded. The aftercoming head was managed by the Mauriceau – Smellie – Veit method in all but a few of 150 cases, the Burns – Marshall method being the alternative and forceps were applied in 4 cases. The indication for the Caesarean sections was failure of progress of the breech. The incidence of caesarean section, 1.3 per cent, was similar to that of 1.5. per cent of the obstetric community for the same three year interval.

Perinatal Mortality

In 155 recorded cases there were 27 stillbirths and 29 first week neonatal deaths making an uncorrected perinatal mortality of 36.1 per cent. There were 11 macerated stillbirths, one being associated with lethal congenital abnormality. Lethal congenital abnormality was 30.1 per cent.

The influence of birth weight on perinatal mortality.

If a birth weight of 2,500 grams or less is taken to be indicative of prematurity, then 58 of 153 recorded cases (37.9 per cent) were premature (Table 1).

TABLE I

Perinatal Mortality (Uncorrected) of 153 recorded cases according to maturity by birth weight.

Birthweight In Grams	Total	Stillbirths	First Week Neonatal Deaths	Perinatal Mortality
All Cases	155	27 (11)	29	36.1 per cent
2,500 or less	58	14 (9)	19 *	56.9 per cent
2,501 or more	95	12 (2)	10 **	23.2 per cent.

Numbers in parentheses are macerated stillbirths.

* 2 cases of lethal congenital abnormalities

** 1 case of lethal congenital abnormalities

A birthweight of 2,000 grams or more was critical for survival in the premature group (Table II).

TABLE II

Perinatal Mortality exclusive of macerated stillbirths and lethal congenital abnormalities in premature infants.

Birthweight in Grams	Total	Stillbirths	First Week Neonatal Deaths	Perinatal Mortality
501 –1,000	4	0	4	100 per cent
1,001–1,500	12	1	8	75 per cent
1,501–2,000	12	2	4	50 per cent
2,001–2,500	19	2	1	15.8 per cent

The birth weights of mature fresh still births and first week neonatal deaths, excluding one case of cord prolapse and one case delivered by lower segment caesarean section, revealed 12 infants weighing 6½ to 7½ pounds and 6 weighing more than 7½ pounds, the largest being a first week neonatal death in an infant weighing 9 pounds 4 ounces following a difficult delivery. The perinatal mortality for infants 5½ to 7½ pounds was 21.9 per cent and for infants greater than 7½ pounds was 27.3 per cent. Cox, quoted by Moir and Myerscough, 1971, found 5½ to 7½ pounds to be the weight group with the lowest fetal mortality in breech delivery.

Multiparity did not reduce the risks of breech presentation in this series (Table III).

TABLE III

Perinatal Mortality (Uncorrected) Related To Party.

Parity	Total	Stillbirths	First Week Neonatal Deaths	Perinatal Mortality
Nullipara	20	4 (1)	3	35 per cent
Multipara	135	23 (10)	26	36.3 per cent

Number in parentheses are macerated stillbirths.

40 per cent of nullipara and 68 per cent of multipara were delivered by midwives. Excluding the nullipara, because of the small number of cases, the influence of the accoucheur was assessed in the multipara (Table IV). Correction was made for macerated still births, lethal congenital abnormalities, antepartum haemorrhage and cord prolapse. There were no cases with associated diabetes mellitus or rhesus incompatibility.

TABLE IV

Perintal Mortality (Corrected) in Cases delivered by midwives or General Practitioner Obstetricians.

Accoucheur	Total	Stillbirths	First Week Neonatal Deaths	Perinatal Mortality
Midwives	76 (26)	11	13	31.6 per cent
G. P's.	27 (6)	Nil	5	18.5 per cent

Numbers in parentheses are premature.

Although the midwives delivered more premature infants (34.2 per cent as against 22.2 per cent), which have a worse prognosis (Table 1), the predominance of fresh stillbirths in their group is suggestive of inadequate management of the delivery compared with the General Practitioner Obstetricians.

Cord Prolapse

This occurred in 8 cases (5.1 per cent), 4 of these being associated with footling breech presentation. Footling breech presentation was recorded in 11 cases and only one death, a fresh stillbirth weighing 1,810 grams, occurred in footling breech with cord prolapse. 2 other deaths, a fresh stillbirth weighing 2,640 grams and a first week neonatal death weighing 1,130 grams, occurred in the other cases associated with cord prolapse.

Other Associated Conditions

There were 5 cases of antepartum haemorrhage of undermined recorded origin and 5 cases of postpartum haemorrhage, in 4 of which manual removal of the placental under general anesthesia was required. There were no recorded cases of sterno-mastoid muscle injury or brachial nerve plexus injury in the infants. The three cases with lethal fetal congenital abnormalities had neural tube malformation among other external deformities.

There were no autopsies performed during the three years under review. There were no maternal deaths in this retrospective analysis.

DISCUSSION

Trauma, often associated with asphyxia is the main threat to the life of the baby in breech birth. Fetal damage can be caused even at caesarean section (British Medical Journal Leading Articles, 1975). The most frequent single cause of death in breech delivery is intracranial haemorrhage due to tentorial tears (Moir and Myerscough, 1971).

In the antenatal planning of vaginal delivery for breech presentation, the classical triad of the passenger, the passages and the powers is of crucial importance. The power or uterine contractions remain an unknown quantity until the onset of labour. The mode of delivery planned should be definitively stated before the onset of labour in mothers attending antenatal clinic with a diagnosis of breech presentation at term.

The assessment of the size of the pelvis and of the fetus should be made as near to term as possible, or else in early labour, by every diagnostic means available to the Obstetrician. 10.5 per cent of mothers in this series had no antenatal care until admission in labour. Term often could not be defined because of uncertain dates. All assessments had to be based on clinical judgement as radiological and ultrasonic techniques were unavailable. The errors of human judgement by even experienced Obstetricians in assessing pelvic capacity and fetal size is stressed by Beischer, 1966 and remains as part of the fetal hazard in vaginal delivery.

The place of a trial of labour in breech presentation is controversial (Beischer, 1966). It is concluded that it has no place in present day obstetric practice. The incidence of cephalo-pelvic disproportion in breeh presentation is controversial. Only a minority of mothers have radiological pelvimetry in reported series of breech presentation (Beischer, 1966). In the present series many recorded cases of difficult breech delivery may either have been difficult to or made difficult by an inexperienced accoucheur or may have represented genuine difficulty due to degrees of unsuspected cephalo-pelvic disproportion.

Good results in breech presentation demand an experienced Obstetrician conducting the delivery. The most experienced Obstetricians available, namely the author and his assistant, only delivered vaginally 10 per cent of the infants. The demands of their work necessitated the delegation of authority to other Medical Officers. Too many deliveries were conducted by the midwives. The numbers and experience of Medical Officers and midwives varied during the three years under review. Mphahlele, 1975 reported similar problems in Zambia. The future management of breech delivery should aim at an experienced Obstetrician as accoucheur in all cases.

The prognostic index for vaginal delivery in breech presentation at term (Zatuchni and Andros, 1967) is rarely applicable in current obstetric practice at Wusakili, because of inaccuracies in the criteria of gestational age and the birth weight of any previous breach delivery.

It is felt that inco-ordinate uterine action in labour or infection following prolonged rupture of

the membranes in a viable pregnancy is best managed by caesarean section rather than intravenous oxytocic or prostaglandin uterine stimulation, unless the obstetrician is absolutely certain of the absence of feto-pelvic disproportion.

The prematurity rate was high (37.9 per cent) and perinatal mortality was significantly increased in this group. Galloway et al., 1967 stressed the increased hazards in premature breech delivery and suggested that efforts to improve survival should be directed first to the prevention of premature labour. The perinatal mortality in their series was 54 per cent in 70 premature single breech births in 11,757 deliveries. The corrected mortality rate was still 37 per cent. These results are very similar to those found in this series. Eliot and Hill, 1972 have shown the value of fetal blood sampling in managing breech labour and delivery. They showed that cord compression was an important variable factor, which could only be assessed by repeated fetal blood sampling with immediate delivery either vaginal or abdominally when significant fetal acidosis from hypoxia occurred (pH below 7.15).

The superiority of the use of forceps to the aftercoming head in reducing neonatal mortality in infants weighing 1 to 3 kilograms has been demonstrated by Milner, 1975. This reduces manual fetal manipulation likely to cause increased skin, subcutaneous tissue and especially muscle trauma with resulting crush syndrome and disseminated intravascular coagulation (Ralis, 1975) and cervicothoracic vertebral column and spinal cord injuries (Brans and Cassady, 1975). Crawford, 1974 reported the beneficial effects of lumbar epidural anaesthesia in singleton breech labour and delivery especially in the case of the low birth weight infant. The assistance of a Specialist Anaesthetist is of great value whether general or regional anaesthesia is used. Ideally the Anaesthetist should be present at the delivery of all breech presentations.

The added value of an abdominal X-ray of the fetus is the diagnosis of the breech presentation with a hyperextended head, which in the absence of gross fetal abnormality, should be delivered by elective caesarean section to reduce the incidence of spinal cord injury to the absolute minimum (Daw, 1974: Taylor, 1975: Brans and Cassady, 1975).

The place of external cephalic version in the antepartum management of breech presentation is controversial (Moir and Myerscough, 1971). Bradley-Watson, 1975 reported its decreasing value in modern obstetric practice. However he suggested that it is justified if the perinatal mortality of breech delivery is significantly above 4 per cent, as is the case in the obstetric population reviewed here. Moir and Myerscough, 1971 see a continuing place, in selected cases, for general anaesthesia with the procedure. It was not not used in this series because of the risks of general anaesthesia and of using undue force in attempting the procedure. This series confirmed the increased risk of cord prolapse in breech presentation, especially in association with the footling breech.

Vaginal breech delivery uncomplicated by other obstetric abnormalities can be associated with a perinatal mortality of as low as 0.53 per cent (Bradley-Watson, 1975). The delivery of all breech presentations by caesarean section would seem to be too radical. Case selection, given maternal co-operation in decision making, remains crucial in breech presentations planned for vaginal delivery.

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