

Intrapartum management of the low-birth-weight breech fetus

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Summary: Breech presentation is prevalent among preterm deliveries and contributes to neonatal mortality far beyond its prevalence. The management of a preterm breech delivery is controversial. We present our retrospective experience with 185 consecutive preterm breech deliveries, part delivered by cesarean section and part delivered vaginally as assisted breech delivery or total breech extraction), and compare the perinatal outcome between these two groups in terms of perinatal mortality (PPD) and perinatal morbidity (neonatal asphyxia). No statistically significant difference was found for either variable in the two examined groups. We therefore conclude that the method of delivery of low birth weight (1000-2500) breeches has no effect on perinatal outcome.

Key words: Intrapartum management; Low birth weight; Breech.

INTRODUCTION

Preterm labour and delivery is a major cause of perinatal morbidity and mortality. Although only 7% of all deliveries involve infants weighing less than 2500 gr, the latter account for 80% of all perinatal complications and deaths⁽¹⁾. Preterm fetuses tend to malpresentation during labour. Breech pregnancies are more

common than vertex pregnancies during the early third trimester, and the incidence of non-frank breech presentations in preterm breech pregnancies is even higher⁽¹⁾. Infants in breech-lie at delivery are associated with a proportionally lower birth weight and a higher frequency of prematurity compared to those in cephalic presentation⁽²⁾. Breech deliveries are also more often linked to brain damage than vertex deliveries, especially when preterm⁽³⁾.

There is a long-standing controversy in the literature regarding the preferred method of delivery for low-birth-weight (LBW) breech fetuses. To date there are no well-controlled prospective studies on the benefits of cesarean versus vaginal delivery in such cases⁽⁴⁾, yet many obstetricians favour cesarean section (C/S)⁽⁴⁾, even for term breech deliveries⁽⁵⁾.

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Table 1. — *Method of delivery of low birth weight infants according to the presenting part and year of delivery.*

Year	V E R T E X			B R E E C H		
	Vaginal No.	C/S No.	%	Vaginal No.	C/S No.	%
1989	121	14	10.3	25	5	16.6
1990	141	14	9.0	30	9	23.0
1991	116	22	15.9	19	9	32.1
1992	127	37	22.5	25	22	46.8
1993	135	44	24.5	15	26	63.4
Total	640	131	16.9	114	71	38.4

The present study was conducted in an attempt to help solve the question of the management of labour and delivery of preterm breech babies.

MATERIALS AND METHODS

During the period from January 1, 1989 to July 1, 1993, 951 live births and 71 stillbirths of babies weighing between 1000 and 2499 gr were recorded in our department. All fetuses that had suffered antepartum death were deli-

vered vaginally, irrespective of presentation. Of the 951 live births, 185 (20%) were breech presentations and 766 (80%) cephalic presentations. Eighty-eight (47.5%) of the breech babies were delivered by C/S, 73 (39.4%) vaginally (assisted breech delivery), and 24 (13%) by total breech extraction. We compared the outcome of the LBW breech babies with that of the LBW infants delivered vaginally.

Specifically, we studied the rate of asphyxia, defined as an Apgar score of less than 7 at 5 minutes (6), and postpartum mortality. The chi-square test, with Yates' correction when appropriate, was used for statistical analysis.

RESULTS

Table 1 summarizes the mode of delivery (vaginal vs. C/S) for both vertex and breech LBW infants during the study period, and the relative frequency of use of the two methods of delivery during these years. The table denotes an increase with time in the rate of C/S for LBW infants, irrespective of their presentation, with the highest increase for LBW breech infants (from 16.6% in 1989 to 63.4% in 1993).

Table 2. — *Incidence of birth asphyxia or PPD according to mode of breech delivery.*

Birthweight	1989		← →	1993	
	Assisted Breech Delivery	Breech Extraction		C/S	Total Breech Deliveries Death
1000-1249 gr	7 *	2		6	15
Asphyxia/PPD	4 (57%)	2 (100%)		1 (16%)	7 (46.6%)
1250-1499 gr	10	5		6	21
Asphyxia/PPD	1 (10%)	1 (20%)		3 (50%)	5 (23.8%)
1500-1999 gr	13	4		22	39
Asphyxia/PPD	2 (15%)	0		4 (18%)	6 (15.4%)
2000-2499 gr	43	13		54	110
Asphyxia/PPD	10 (23%)	3 (23%)		8 (14%)	21 (19.1%)
Total	73	24		88	185
1000-2499 gr	17 (23%)	6 (25%)		16 (18%)	39 (21%)
Asphyxia/PPD					

* The top line indicates the total number of cases for each mode of delivery in a given birth-weight group. The bottom line indicates to the number of cases (percentage) of birth asphyxia or postpartum death in the group represented by the top line.

Table 3. — *Breech deliveries: Postpartum deaths and cause of death in low birth weight infants.*

Year	Number	Mode of delivery	Weight in grams	Cause of death
1989	3	Vaginal	1250	Respiratory Distress Syndrome
		Vaginal	1250	Respiratory Distress Syndrome
		Vaginal	1320	Respiratory Distress Syndrome
1990	4	Vaginal	2100	Hydrocephalus, Respiratory Distress Syndrome
		Vaginal	2300	Hydrocephalus
		Vaginal	2120	Bilateral Pneumothorax
		Vaginal	1360	Asphyxia, Brain Haemorrhage, Respiratory Distress Syndrome
1991	2	Vaginal	1020	Respiratory Distress Syndrome, Jaundice
		Vaginal	1220	Respiratory Distress Syndrome, Jaundice
1992	6	Caesarean Section	1970	Respiratory Distress Syndrome, Jaundice
		Vaginal	1100	Brain Haemorrhage
		Vaginal	1730	Respiratory Distress Syndrome
		Vaginal	1200	Brain Haemorrhage
		Vaginal	1000	Jaundice, Respiratory Distress Syndrome
		Vaginal	1310	Brain Haemorrhage
1993	1	Caesarean Section	1180	Klebsiella Septicemia

Table 2 describes the rates of asphyxia and postpartum death due to various causes following the different methods of delivery in the breech population, divided by birth weight. No significant difference was found in the rate of perinatal mortality and morbidity in the breech babies delivered by C/S and those delivered vaginally, when compared by birth weight.

Additionally, no difference was found in the total number of perinatal deaths and complications between the two methods of delivery, irrespective of birth weight. This latter calculation was performed to validate the statistical result because of the relatively small size of each birth weight subgroup.

Table 3 summarizes the causes of postpartum death in the LBW breech babies in relation to mode of delivery.

DISCUSSION

Recent technical innovations in obstetrics, such as ultrasound, fetal monitoring and amniocentesis, as well as greatly advanced methods of neonatal care, have turned the unborn fetus into a full-fledged patient. The question of the method of delivery of preterm fetuses, especially in cases of breech presentation, has been hotly debated in the literature. It is widely believed that prompt C/S is associated with a better outcome, but this has never been proved in scientifically acceptable studies (7). Several works conducted

in the late 1970s and early 1980s dealing with the method of delivery of preterm breech fetuses presented series similar to ours, with conflicting results (8-11). More recently, studies have been published advocating cesarean delivery of LBW breech fetuses (12-15), whereas others could find no advantage to C/S (16-21). In one study (22), a 2.4% higher rate of perinatal mortality and morbidity was found following C/S of LBW breech fetuses in comparison with vaginal delivery. The rationale that C/S prevents periventricular or intraventricular hemorrhage, which is more prevalent during vaginal delivery, has been denied (20, 23).

In Israel, a recent review of contemporary trends in the management of breech deliveries has shown that in 18 out of 19 departments of obstetrics and gynecology, very-low-birth-weight (VLBW) breech fetuses (1000-1499 gr) are usually delivered by C/S. Most departments allow a trial of vaginal labour for infants weighing between 1500 and 4000 gr, and some also for breech fetuses weighing 800 to 1000 gr (24). Our results demonstrate a gradually increasing trend in our department towards C/S for LBW breech fetuses, following the recommendations in the literature.

However, when mortality rates from fetal asphyxia, brain damage and post partum death were examined in relation to the method of delivery, there was no significant evidence favoring C/S for reducing complications. Although with regard to the causes of death vaginal delivery initially seemed to be the more dangerous (14 out of 16 cases), a deeper look indicated that hyaline membrane disease, which is unrelated to the method of delivery but to the prematurity per se, was responsible for 64% (9 of 14) of the deaths in the group delivered vaginally compared with 50% (1 of 2) of the deaths in the C/S group.

In conclusion, our results question the tendency to operate on practically all par-

turient patients with premature LBW fetuses. These findings might reduce physicians' fear of fetal damage if the patient is not referred for C/S, thus enabling a future prospective randomized paired study which might shed light on the yet unresolved question of the preferred method of delivery for preterm LBW breech fetuses.

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