

INTRAPARTUM RISK FACTORS IN BREECH—A SEARCH FOR ALERT SIGNAL IN BREECH LABOR AFTER 34 WEEKS GESTATION

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SUMMARY

Intrapartum risk factors in 266 cases with pregnancy of 34 weeks or more have been analysed.

Introduction

With improved operative safety cesarean section is increasingly advocated for breech labour, but one has to carefully balance improved fetal salvage with raised maternal mortality and other long term sequelae. Indications for operative interference have changed with improved medical technology e.g. cesarean being the mode of delivery of choice for pre-term labour. Leon and Gallant (1980) found no scientific basis for routine cesarean section for fetus weighing 2 Kg. at approximately 34 weeks or more. Labour in such cases needs to be supervised carefully.

Material and Methods

There were total 488 (3.79%) cases of breech deliveries out of 13035 deliveries. Labour could be analysed in total 266 cases with pregnancy of 34 weeks or more after excluding 222 cases of multiple pregnancy, cesarean section without observed labour, late admissions

and premature labour. Type of presentation was extended breech in labour in 64.66%. There were 122 primiparae and 144 multiparae. 117 neonates had birth weights less than 2.5 Kg. and 149 had more than 2.5 Kg.

Each case on admission had careful evaluation of Obstetric history, assessment of fetal size, pelvic examination, record of condition of cervix, membranes, station of presenting part and adequacy of pelvis so that each case could be scored as suggested by Zatuchni-Andros (1965).

The events of labour were recorded on partograph and progress of labour was watched. Neonate was assessed at birth according to Apgar score. 4.86% (13/266) required cesarean section.

Observations

Associated Complication

Thirty-three out of 266 cases had associated hypertension, toxemia or antepartum haemorrhage. Perinatal mortality in this group was 36.36% compared to 6.86% in the remaining 233, correlation was statistically significant (Table I).

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TABLE I
Fetal Outcome in Complicated and Uncomplicated Breech

	Complicated Breech		Uncomplicated Breech	
	No.	%	No.	%
Uncorrected PNM*	33	100	233	100
Corrected PNM*	12	36.36	38	16.31
1 min. A/s less than 6*	12	36.36	16	6.86
5 min. A/s less than 6*	20	60.80	59	25.32
	16	48.48	25	10.72

* Statistically significant difference (P less than 0.05) using Chi-square test with Yates correction.

Prolonged Latent Phase (Table II)

Documented data on latent phase was available in 126 cases. It was prolonged in 42.8% (27/63) of primipara and 41.3% (26/63) of multipara, latent phase being termed prolonged if it exceeded 8.6 hours in primipara and 5.3 hours in multipara. In Zatchni Andros low score group corrected perinatal mortality was 16.1% if latent phase was prolonged compared to 4.3% if latent phase was normal. This difference was statistically just significant applying Chi-square test with Yates correction (P less than 0.05). In

high score group also corrected perinatal mortality was markedly higher when latent phase was prolonged as compared to when it was normal being 16.7% and 2.7% respectively. (Statistically significant).

Protracted Active Phase (Table III)

All fetal parameters i.e. perinatal mortality, low apgar score at one and five minutes were significantly worse for protracted active phase in both low and high score group (using Chi-square test with Yates correction, P less than 0.05).

TABLE II
Foetal Outcome in Relation to Duration of Latent Phase in 233 Cases of Uncomplicated Breech

Latent Phase		Normal		Prolonged*		Unknown	
		No.	%	No.	%	No.	%
Low Score	Uncorrected PNM	23	100	31	100	17	100
	Corrected PNM	3	13.0	5	16.1	2	11.8
	1 min. A/s less than 6	1	4.3	5	16.1	2	11.8
	5 min. A/s less than 6	10	43.5	15	43.4	3	17.6
		4	17.4	7	22.6	2	11.8
High Score	Uncorrected PNM	37	100	18	100	107	100
	Corrected PNM	8	21.6	4	22.2	16	14.9
	1 min. A/s less than 6	1	2.7	3	16.7	4	3.7
	5 min. A/s less than 6	6	16.2	7	38.9	19	17.8
		4	10.8	5	27.9	7	6.5

* Latent phase was considered prolonged: More than 8.6 hours in primigravida and more than 5.3 hours in multipara.

TABLE III

Fetal Outcome in Relation to Duration of Active Phase in Low and High Zatuchni Andros Score Cases in 233 Uncomplicated Breech

Active Phase		Normal		Protracted	
		No.	%	No.	%
Low Score	Uncorrected PNM	37	100	35	100
	Corrected PNM*	1	2.7	9	25.7
	1 min. A/s less than 6*	0	0	8	22.9
	5 min. A/s less than 6*	10	27.0	18	51.4
		2	5.4	11	31.4
High Score	Uncorrected PNM	117	100	44	100
	Corrected PNM*	16	13.5	12	27.3
	1 min. A/s less than 6*	0	0	8	18.2
	5 min. A/s less than 6*	16	13.5	16	36.4
		6	5.1	10	22.8

* Statistically significant difference (P less than 0.05) using Chi-square test with rates correction

** Active phase considered protracted if rate of cervical dilatation was less than 1.2 cm. per hour in primigravida or less than 1.5 cm./hour in multipara.

Fetal Outcome in Relation to Both Phases of Labour (Table IV)

With latent phase prolonged and active phase normal, perinatal mortality was not increased even in initial low Zatuchni-Andros score group. With both phases prolonged, perinatal mortality was in-

creased in both low and high score group. The difference was statistically significant (P less than 0.05). With both phases prolonged increase in low apgar score babies at 1 minute and 5 minutes was also statistically significant applying Chi-square test with Yates correction (P less than 0.05).

TABLE IV

Fetal Outcome in Relation to Both Phases of Labour

Latent Phase		Normal		Prolonged			
		Normal		Normal		Protracted	
Active Phase		Normal		Normal		Protracted	
Low Score	Uncorrected PNM	17	100	13	100	18	100
	Corrected PNM*	1	5.9	0	0	5	27.8
	1 min. A/s less than 6*	0	0	0	0	5	27.8
	5 min. A/s less than 6*	6	35.3	4	30.7	11	61.1
		1	5.9	1	7.7	6	33.3
High Score	Uncorrected PNM	31	100	9	100	9	100
	Corrected PNM*	5	16.1	2	22.2	3	33.3
	1 min. A/s less than 6*	0	0	0	0	2	22.2
	5 min. A/s less than 6*	5	16.1	5	55.5	2	22.2
		1	3.2	3	33.3	2	22.2

* Statistically significant difference (P less than 0.05) using Chi-square test with yates correction.

Effect of Time of Rupture of Membranes

Corrected perinatal mortality with early rupture of membranes was double than that with membranes intact till active phase 15.6% versus 7.4% (P more than 0.05). 5-minutes Apgar score 6 or less was significantly increased being 28.9% compared to 13.6% (Table V).

Perinatal Mortality in Relation to Augmentation (Tables VI and VII)

In 220 cases who did not require augmentation, low apgar score at 1 min. and 5 min. was equally frequent in low and high score cases. Uncorrected perinatal mortality was actually higher with high Zatuchni Andros score cases, which could

TABLE V

Correlation of Perinatal Outcome in Relation to Rupture of membranes in 126 Cases with Latent Phase Known

	Membranes Ruptured in Latent Phase		Membranes Ruptured in Active Phase	
	No.	%	No.	%
Uncorrected PNM	45	100	81	100
Corrected PNM	13	28.9	10	12.3
1 min. A/s less than 6	7	15.6	6	7.4
5 min. A/s less* than 6	21	46.7	24	29.6
	13	28.9	11	13.6

* Statistically significant (P less than 0.05).

TABLE VI

Cesarean Section Rate and Fetal Outcome in 220 Unaugmented Cases

	Low Score		High Score		Total	
	No.	%	No.	%	No.	%
Total Cases	55	100	165	100	220	100
Cesarean Section	4	7.27	3	1.82	7	3.18
Uncorrected PNM*	1	1.82	29	17.58	30	13.64
Corrected PNM	1	1.82	7	4.24	8	3.64
1 min. A/s less than 6	16	29.09	40	24.24	56	25.45
5 min. A/s less than 6	6	10.91	22	13.33	28	12.73

* Statistically significant by proportion test (P less than 0.05).

TABLE VII

Cesarean Rate and Fetal Outcome in Augmented Versus Unaugmented group

	Augmented (46)		Unaugmented (220)	
Cesarean Section*	6	13%	7	3.1%
Uncorrected PNM*	20	43.5%	30	13.64%
Corrected PNM*	8	17.4%	8	3.64%
1 min. A/s less than 6*	23	50.0%	56	25.45%
5 min. A/s less than 6*	13	28.3%	28	12.73%

* Statistically significant difference (P less than 0.05).

be explained due to more frequent multiparae and delivery of breech through incompletely dilated cervix.

Perinatal mortality and low apgar score at one and five minute were significantly more frequent in cases which required augmentation. Augmentation was done for cases of early rupture of membranes, prolonged latent phase and protracted active phase.

Projected cesarean and perinatal mortality rate if operative delivery considered for intrapartum risk factors (Table VIII): An exercise on present data was done to

see how far cesarean rate would increase with each risk factor and how many perinatal deaths could be avoided.

Complicated breech is a single risk factor which prevents 12 perinatal deaths with additional 32 cesarean sections—a rate of 16.91%. Other risk factors were considered in uncomplicated 233 breech cases. Cesarean for all low Zatuchni-Andros score cases gives a rather high cesarean rate of 32%; with more selective cesarean section i.e. with prolonged latent or protracted active phase in low score cases; cesarean rate is reduced to

TABLE VIII

Cesarean Section Rate with Projected Perinatal Mortality Considering Other Pertinent Factors Besides Zatuchni-Andros Score in Breech Cases

Factors Considered	Cesarean Section	Additional Cesarean Section	C.S. %	Perinatal Mortality (PNM)	Death Prevented	Perinatal Mortality %
n 266 As at present	13	—	4.9	28	—	10.53
P P+Complicated breech	13	+32	16.91	—	—12	6.02
n 233 (un- comp- lica- ted bree- ch. As at present	12	—	5.15	16	—	6.07
(p) P+all low score	"	+63	32.18	"	—8	3.42
P+Prolonged Latent phase with low score	"	+27	16.74	"	—5	4.72
P+Protracted Active phase with low score	"	+26	16.31	"	—8	3.43
P+both phases prolonged with low score	"	+14	11.16	"	—5	4.72
P+augmented low score	"	+15	11.59	"	—7	3.86
P+early rupture of membranes with low score	"	+11	9.87	"	—6	4.29
P+all prolonged latent phase	"	+45	24.46	"	—8	3.43
P+all prolonged active phase	"	+68	36.33	"	—16	0

half with almost similar perinatal mortality, still more selective and acceptable is cesarean section for all augmented cases in low score group which would give perinatal mortality of 3.86% for cesarean rate of 11.59%. If perinatal deaths in high score are to be avoided then cesarean is to be considered in all protracted active phase cases, a rate of 36.33% cesarean section in uncomplicated breech or a rate of 42.5% in whole group.

Discussion

Present analysis of fetal outcome in 266 cases of singleton breech cases after 34 weeks was undertaken to find intrapartum high-risk factors. Two hundred, twenty-two cases excluded were those wherever labour was not observed such as when operative delivery had been decided before labour or immediately on admission in labour and those admitted in second stage or with premature labour. Trial of vaginal delivery was given if initially pelvis was found adequate.

Perinatal mortality and low apgar scores in relation to progress of labour were reviewed. Prolonged latent phase, protracted active phase and early rupture of membranes were found to be significant risk factors. Prolonged latent phase was important as it was likely to be followed by protracted active phase. If subsequent active phase was normal neonate was not found to be depressed.

Protracted active phase is more likely with prolonged latent phase and early rupture of membranes (Mirchandani and Khurana, 1982). All fetal parameters are adversely affected with protracted phase.

Other important factor which increases risk to the fetus is the associated complications of hypertension, toxemia and

ante-partum haemorrhage, perinatal mortality being 36.36% in such cases. Initial Zatuchni-Andros score is of value as it predicts long latent phase and protracted active phase (Khurana and Mirchandani 1983). If latent and active phase both are normal fetal outcome is as good in low score cases as in high score as seen in 220 cases who did not require any augmentation of labour (Table VI). Cases who required augmentation either for premature rupture of membranes or for prolonged latent phase or protracted active phase, perinatal mortality is significantly increased as also depressed neonates are more frequent.

The study reveals that it is not logical to subject all patients with initial low Zatuchni-Andros score to cesarean section such a policy would have raised cesarean rate in the present group from present 5.15% to 32.18% and lowered perinatal mortality to half i.e. 6.87% to 3.42%. Similar low perinatal mortality can be obtained if all low score cases who require augmentation of labour are considered for cesarean section while cesarean rate would be only just doubled i.e. 11.59% (Table VIII). Further reduction of perinatal mortality can be obtained if cesarean section is considered for all protracted active phase i.e. 'Action' is taken when rate of dilatation is slower than 1.2 cm. per hour in nullipara and 1.5 cm. per hour in multipara.

Earlier analysis of partograph and fetal outcome in relation to guidelines had revealed high perinatal mortality after 'action' line and suggested that 'alert' line needs to be shifted to left (Mirchandani and Khurana 1982) i.e. instead of present line at rate of 1 cm. per hour it needs to be earlier than 1.2 cm. for nulliparae and 1.5 cm. per hour line for multipara. Perinatal deaths in high Z.A. score

group with non augmented labour were in multiparae with rate of dilatation less than 1.5 cm. per hour-breech baby was pushed through incompletely dilated cervix.

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