

BREECH DELIVERY

An Analytical Review

by

C. K. RAJANI*, M.D.

and

L. V. PHATAK**, F.R.C.S.

Many contributions from eminent obstetricians have been made from time to time on the subject of breech delivery and its attendant high foetal mortality. The advisability of prophylactic external version, the advantages of caesarean section, assisted or total breech extraction are live debatable subjects.

The only uncontroversial and undebatable point accepted is that a breech presentation is a major obstetric complication of any labour.

The present study is an analytical review of all the breech deliveries conducted in the Obstetrics Department of Lady Hardinge Medical College and Hospital for a period of nearly five years from January 1958 to September 1962. By reviewing the data collected, we hope that some inferences may be drawn that may direct us to better management and lead to a reduction in the foetal

mortality of breech deliveries. All the breech deliveries presented here have been conducted by the registrars on duty and a few by the house surgeons. These statistics, therefore, present a picture which is probably comparable with that of most of the general hospitals where breech cases are not placed under the observation and treatment of selected accouchers. Our gross statistics included all pregnancies of more than twenty-eight weeks and/or babies who weighed $2\frac{1}{2}$ lbs. and above.

Incidence of Breech Presentation

From January 1, 1958 to September 30, 1962, there were 26,348 deliveries conducted in the hospital which included 1695 breech deliveries. Our incidence of breech presentation therefore is 6.4 per cent which is higher than the series reported in the literature on the subject.

Patton and Massey, Tomkins and Martins reported an incidence of 4.8, 4.7 and 3.5 per cent respectively. Martins and Tomkins in their corrected series after excluding premature infants, non-viable infants and congenital anomalies incompatible with life found the incidence of breech deliveries to be 2.5% of all

* Reader in the Department of Obstetrics and Gynaecology.

** Professor of Obstetrics and Gynaecology, Lady Hardinge Medical College and Hospital, New Delhi.

Paper read at the 12th All-India Obstetric and Gynaecological Congress at Ahmedabad in December 1963.

TABLE I

*Incidence of Breech Deliveries during the Period
January 1958 to September 1962*

Year	Total No. of deliveries	Total No. of breech	Per cent
1958	5393	371	6.8
1959	5221	359	6.8
1960	5539	378	6.8
1961	6506	386	5.9
Jan. '62 to Sept. '62	3689	201	5.4
Total	26348	1695	6.4

full-term single deliveries. In the present series, after exclusion of similar conditions as stated above, the corrected incidence came to 3.3% and is presented in Table II along with the figures reported by other authors.

TABLE II
Corrected Incidence of Breech Presentation

Author	No. of Deliveries	Per cent
Moore and Steptoe	51,571	2.8
Daneforth and Galloway	8,531	3.3
Cannell & Dodik	16,166	3.4
Martins & Tomkins	8,509	2.5
Present study	26,348	3.4

In order to study the correct incidence of breech as tabulated above and incidence in relation to parity, age and mode of delivery, it was essential to classify the total number of breech, comprising of 1695 cases.

After deduction of the premature breech, the non-viable infants and congenital anomalies incompatible with life, there remains a total number of 887 cases of normal full-term breech.

TABLE III
Analysis of 1695 Cases

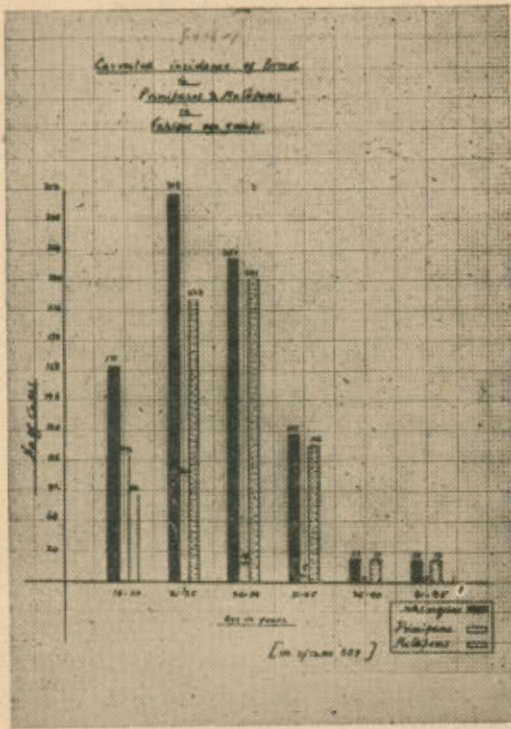
Type of Cases	No. of cases	Per cent Incidence
Premature breech (28 weeks gestation)	493	29.1
Non-viable infants	263	15.5
Congenital anomalies incompatible with life	21	1.3
Prolapse cord	31	1.8
Mature term breech also including complicated cases	887	52.3
Total	1695	100.00

TABLE IV
Corrected Incidence of Breech in Relation to Parity

Parity	No. of cases	Per cent
Primipara	206	23.22
Multipara	681	76.78
Total	887	100.00

The incidence of breech presentation in multipara was more than three times (76.7%) the incidence in primipara (23.3%).

The relationship between the parity and different age groups in full-term breech cases was determined and is presented in Fig. I.



It appears from Fig. I that age groups 21-25 and 26-30 years show the maximum incidence of breech. The multipara also exceeds markedly in number than the primipara in both these age groups.

TABLE V
Duration of Pregnancy

Type of Cases	Weeks			Total
	28-32	33-35	36-40	
Primipara ..	25	127	242	394
Multipara ..	312	344	645	1301
Total ..	337	471	887	1695
Per cent ..	20	28	52	—

Fifty-two per cent of breech cases presented themselves between 36-40 weeks of gestation and 48% between

28-35 weeks of gestation on admission in the hospital. Therefore the rate of premature birth and non-viable infant combined comes to 45.8%. These two groups were in the gestation period of 28 to 35 weeks.

The methods of breech delivery are classified as under:—

1. Spontaneous breech delivery, a term used for the cases in which the breech is quickly and spontaneously delivered without any manipulation by the doctors. This usually occurs with premature babies and also in multipara with mature foetus and with a roomy pelvis.

2. Assisted breech delivery or partial extraction. In this, the birth is allowed to proceed spontaneously up to the appearance of the umbilicus after which assistance is given for the delivery of the shoulders and head. This is a usual procedure for breech delivery unless definite indications exist for breech extraction.

3. Full breech extraction — In this the operative interference is commenced before the passage of the breech over the perineum. This has been limited to cases with prolonged second stage and no progress.

Average duration of labour in primipara and multipara was 17½ hours and 10½ hours respectively. The second stage was considered to begin soon after rupture of membranes with bearing down pains in most of the cases. In cases who came with either leaking or early rupture of membranes, the second stage was considered only by the nature of bearing down pains coming at regular and short intervals.

TABLE VI
Type of Delivery in Corrected Series of Full-Term Breech Cases

Mode of Delivery	No. of Cases		Total	Per cent
	Primipara	Multipara		
Spontaneous breech delivery	106	443	549	61.8
Assisted breech	71	117	188	21.1
Full breech extraction	29	121	150	17.1
Total	206	681	887	100.00

Foetal and Neonatal Mortality

TABLE VII

Uncorrected Foetal and Neonatal Mortality

	Total No. of cases	Per cent
Still-births	542	31.91
Neonatal	136	8.91
Total still-births and neonatal deaths	678	40.00

Out of 1695 breech deliveries, 678 infants were either still-born or had a neonatal death. The gross foetal mortality, therefore, comes to 40%.

This figure is in close agreement with the figures of Guyer and Clause which is 35%.

An appraisal of these 678 deaths appears in Table VIII. In calculating the corrected foetal mortality of breech delivery we have excluded cases with various complicating factors which contribute to the total foetal mortality. The corrected foetal and neonatal mortality after elimination of premature breech non-viable infants and congenital anomalies came down to 11.1%.

TABLE VIII

Corrections	No. of cases	Still-births and neonatal deaths	Total No. of cases	Total still-births and neonatal deaths	Total mortality rate per cent
Totals			1695	678	40.0
Non-viable infants including complicated cases	263	263			
Remainder			1432	415	28.9
Congenital defects	21	19			
Remainder			1411	396	28.0
Premature infants including complicated cases	493	276			
Remainder			918	120	13.0
Mature infants with prolapse of cord and other complications	31	21			
Remainder			887	99	11.1

TABLE IX
Corrected Foetal and Neonatal Mortality for Full-Term Breech

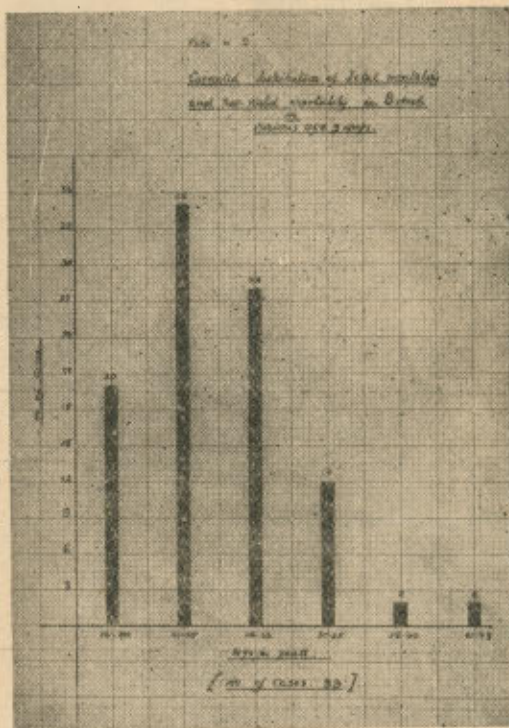
	Total No. of cases	Per cent
Still-births	79	2.27
Neonatal deaths	20	8.91
Total still-births and neonatal deaths	99	11.18

Since no standard has been generally accepted for the exclusion of complicating factors, the corrected foetal mortality rates of different authors vary considerably and are given below:—

TABLE X

Author	Foetal Mortality Rate Percentage
Caldwell and Studdford	11.11
Cannell and Dodek	6.75
Mafacee and McCluric	6.10
Mohler	5.50
Sigal and McNally	12.10
Palton and Mussey	3.77
Hawker and Smile	4.81
Goethals	7.40
Hausen	0.80
Waters	11.20
Tomkins	2.70
Moore and Steptoe	12.80
Guyer and Heatoh	4.50
Dieckman	2.70
Present series	11.18

The incidence of foetal and neonatal mortality was further studied in relation to parity and various age groups. This is shown in Table XI and Figure II.



The foetal mortality rate was 8.3% for multipara and 2.8 for primipara. These figures are of great significance on account of the fact that breech in a multipara is exposed to danger three times more than in the

TABLE XI
Corrected Incidence of Foetal and Neonatal Mortality with Relation to Primipara and Multipara

Type of Cases	Total No. of Cases	Deaths	Foetal and Neonatal Mortality in percentage
Primipara	206	25	2.8
Multipara	681	74	8.3
Total	887	99	11.1

case of primipara. Considering a high foetal mortality in breech delivery in general, mortality in multipara increases many times more. It is, therefore, felt that multipara needs more attention and better management during the prenatal period and at the time of labour than primipara.

The highest foetal and neonatal mortality has also been noticed in the two age groups viz. 21-25, 26-30 and here again the multipara shows a high foetal and neonatal loss in both these age groups.

assessment of these patients with large babies is very essential for the course to be followed during labour.

It appears from the above results that full breech extraction carries minimum foetal and neonatal mortality. In principle, the indications for full breech extraction were:—

1. Foetal or maternal distress.
2. Delay in the second stage of labour.
3. To minimise the danger to the mother of bearing down efforts

TABLE XII

Foetal and Neonatal Loss in Relation to Weight of the Foetus—678 Cases

Weight of foetus	Number	Foetal and neonatal loss per cent
2 lbs. 8 oz. to 3 lbs. 15 oz.	261	38.4
4 lbs. to 5 lbs. 7 oz.	157	23.2
5 lbs. 8 oz. to 5 lbs. 15 oz.	23	3.3
6 lbs. to 6 lbs. 15 oz.	43	6.3
7 lbs. to 7 lbs. 15 oz.	78	11.4
8 lbs. to 8 lbs. 15 oz.	116	17.4
Total	678	100.00

Out of 678 foetal and neonatal deaths, 418 deaths were in the infants weighing between 2.8 lbs. to 5 lbs. 7 oz. The foetal loss in this group amounts to 61% which is extremely high. Amongst them foetal and neonatal mortality is comparatively less in the infants weighing between 4 lbs. to 5 lbs. 7 oz. A sharp decline of the foetal and neonatal mortality in the infants weighing between 5 lbs. 8 oz. to 5 lbs. 15 oz. and 6 lbs. to 6 lbs. 15 oz. is noticeable. These two groups yield a mortality figure of 9.7%. The mortality rate again rises as the weight of the foetus increases. It is considered that a preliminary

in dangerous conditions associated with pregnancy.

The cervix was fully dilated in all the cases.

There was no contraction of the pelvis. Our mortality figures are in agreement with the figures of Johnson, Dieckmann, Harrod and Goethes as 0.9-1% respectively.

The foetal loss in the assisted breech delivery could be minimised with a better supervision of the cases during labour and avoiding the delivery of the after-coming head on an undilated cervix.

Neonatal morbidity associated with breech presentation is as important

TABLE XIII
Corrected Foetal and Neonatal Mortality in Breech Deliveries by
Type of Operative Deliveries

Mode of delivery	Primipara			Multipara		
	No. of cases	Still-birth and neonatal loss	Per cent	No. of cases	Still-birth and neonatal loss	Per cent
Spontaneous breech delivery	106	13	1.4	443	45	5.0
Assisted breech delivery	71	8	0.9	117	16	1.8
Full breech extraction	29	4	0.5	121	13	1.5
Total	206	25	2.8	681	74	8.3

(Total number of cases: 887)

as the foetal mortality, in so far as many of the injuries are of a permanent and serious nature.

TABLE XIV
Neonatal Morbidity in Surviving Babies

Mild intra-cranial injuries	..	..	25
Fracture of long bones	..	..	12
Foetal abnormality include	..	..	14
(a) Talipes	..	..	8
(b) Meningocele	..	..	3
(c) Congenital heart	..	..	3

Prolapse of Cord

In 1695 cases of single mature breech, there were 31 cases of cord prolapse—an incidence of 1.9%. This is in agreement with Guyer and Claudes series. Out of 31 cord prolapse, 21 ended in foetal loss in the form of either a still-born or a neonatal death giving a foetal mortality of 64% (an extremely high figure).

Cord prolapse is a major hazard to which a breech is exposed. As reported by other workers, cord prolapse is usually associated with a

flexed breech. We have not been able to scan this aspect. All these cases were normal term breech.

Maternal Mortality

In our series of 1695 breech deliveries, 4 maternal deaths were noted.

The maternal mortality rate in breech deliveries is 0.23% or 2.3 per thousand.

The diagnosis in each case was:—

Post-partum haemorrhage	..	..	1 case.
Obstetric shock	..	..	1 case.
Toxaemia (This patient went into anuria)	..	..	1 case.
Pulmonary embolism	..	..	1 case.

Suggestions

A careful prenatal assessment of all cases presenting as breech should be done from the 32nd week in primipara and 34 weeks in multipara.

Changing the poliarity of the foetus reduces the foetal mortality remarkably. Hence external version may be tried in all cases unless some as-

sociated complications do not permit this procedure.

Expectant supervision of cases in labour is extremely important in the cases of multipara in whom the foetal and neonatal mortality is very marked.

Delivery to be conducted by the persons who are more experienced in this art.

Wide episiotomies should be an obligatory procedure to neutralise any rigidity of the soft tissues.

Finally good team work, diligent observation of the patient in labour, detailed preparation for delivery and experienced supervision would minimise the foetal loss in breech.

Summary and Conclusion

Out of 26,348 deliveries during a period of about 5 years at the Lady Hardinge Hospital, there were 1695 breech deliveries of infants weighing 2½ lbs. and above — an incidence of 6.4%.

2. After deduction of the premature breech, the non-viable infants and congenital deformities incompatible with life, there remains a total number of 887 cases of normal term breech. Thus giving a corrected incidence of 3.3%.

3. The incidence of breech presentation in multipara was more than three times (76.7%) the incidence in primipara (23.3%).

4. Out of 1695 deliveries, 678 infants were either still-born or had a neonatal death. The gross foetal mortality, therefore comes to 40%. The corrected foetal mortality was 11.1% after elimination of the premature breech, non-viable infants

and congenital deformity incompatible with life.

5. The foetal mortality rate in breech deliveries is 8.3% in multipara and 2.8% in primipara.

6. Out of 31 cord prolapse cases, 21 ended in foetal and neonatal loss, an incidence of 64%.

7. Out of 678 foetal and neonatal deaths, 418 deaths were in the infants weighing between 2.8 lbs. to 5 lbs. 7 oz. The foetal loss amounts to about 61% which is extremely high. The foetal mortality is lower in the weight 5 lbs. 8 oz.—6 lbs. 15 oz. and rises thereafter.

Acknowledgements

Acknowledgements are due to the staff of the Obstetrics and Gynaecological Department for rendering all possible help in the collection of data.

References

1. Beischer, N. A. and Townson, Lana: *J. Obst. & Gynec. Brit. Emp.* 61: 668, 1960.
2. Brooks Halfman, J.: *J. Obst. & Gynec. N.Y.* 15: 223, 1960.
3. Clyde, L. Randall: *Am. J. Obst. & Gynec.* 82: 27, July 6.
4. Cox, L. W.: *J. Obst. & Gynec. Brit. Emp.* 57: 197, 1950.
5. Dieckmann, W. J. L.: *Am. J. Obst. & Gynec.* 52: 349, 1946.
6. Goethals, T. R.: *Am. J. Obst. & Gynec.* 26: 715, 1933.
7. Hay, David: *J. Obst. & Gynec. Brit. Emp.* 66: 529, 1959.
8. Jackson, R. L.: *Am. J. Obst. & Gynec.* 81: 653, 1961.
9. Mengert, W. F.: *Am. J. Obst. & Gynec.* 68: 250, 1954.

10. Pomerance, W. and Daichman, L.: Am. J. Obst. & Gynec. 64: 110, 1952.
11. Potter, M. C., Erving, H. W. and Brown, J. B.: Am. J. Obst. & Gynec. 49: 567, 1945.
12. Tompkins, P.: Am. J. Obst. & Gynec. 51: 595, 1946.
13. Vartan, C. K.: J. Obst. & Gynec. Brit. Emp. 52: 417, 1945.
14. Warwick, H. V. and Lipsett, H. L.: Am. J. Obst. & Gynec. 61: 1301, 1951.

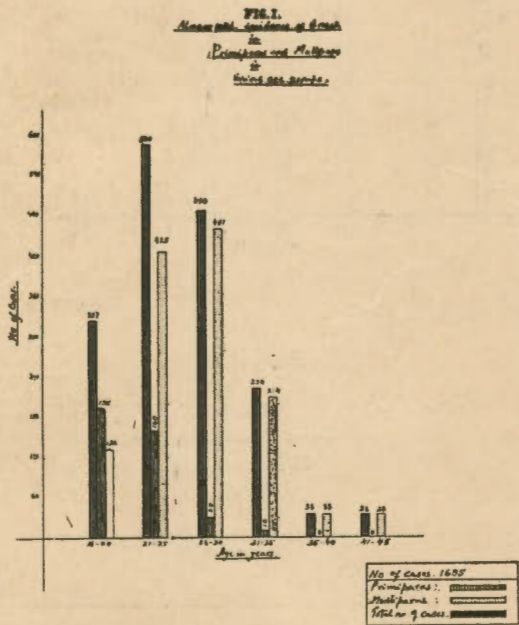


Fig. 1

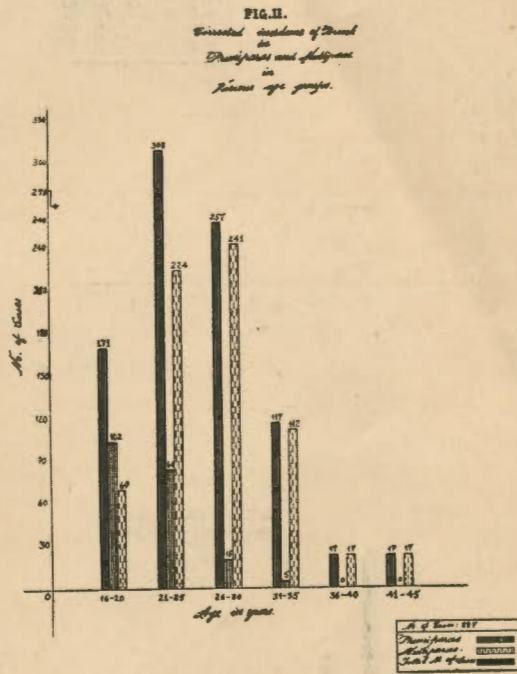


Fig. 2

FIG. III

Graph showing percentage of incidence of Breast Discharge in Primiparas and Multiparas.

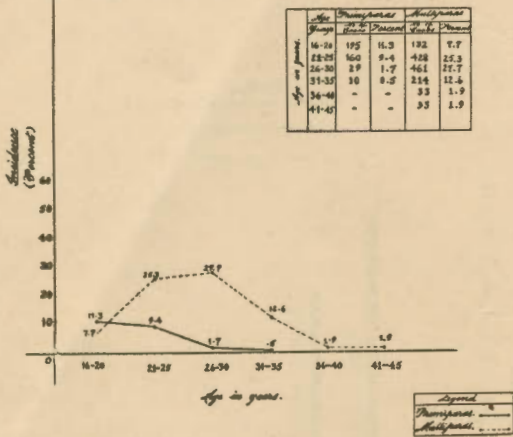


Fig. 3

FIG. IV

Uncorrected fetal and neonatal mortality in various age groups in Bawal.

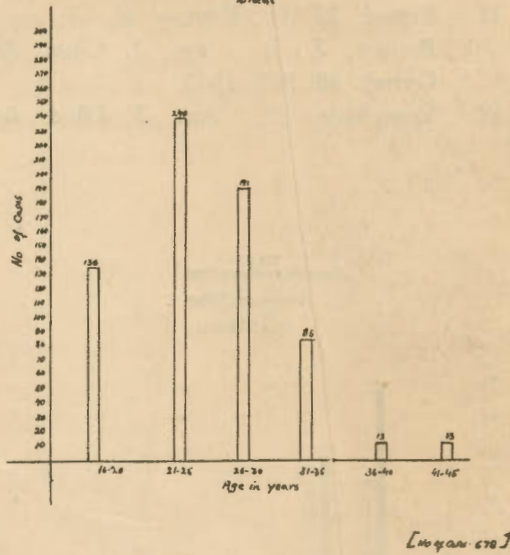


Fig. 4

FIG. V

Corrected fetal and neonatal mortality in various age groups in Bawal.

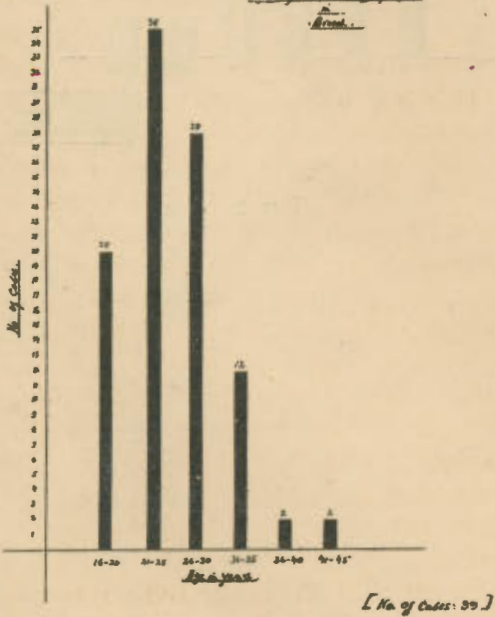


Fig. 5

FIG. VI

Corrected fetal and neo-natal mortality in Primiparas and Multiparas in various age groups.

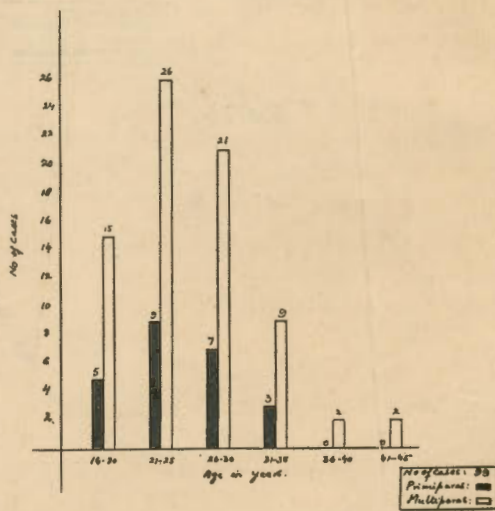


Fig. 6