

BREECH DELIVERY IN THE SOUTH AFRICAN BANTU

T. PERLMANN, M.B., B.CH., Registrar in Obstetrics, Bridgman Memorial Hospital, University of the Witwatersrand, Johannesburg

A 6-year survey of breech delivery at the above hospital was conducted with the purpose of attempting to find means of reducing the high foetal mortality rate associated with breech delivery in Bantu patients.

Material

All cases of breech delivery, including twins, conducted in this hospital during the period 1956-1961, were considered for the purposes of this article. During the period under review there was a total of 16,023 babies delivered of which 760 were breech deliveries—an incidence of 4.7%.

TABLE I. DISTRIBUTION OF CASES

	Cases	Percentage
<i>Single pregnancy:</i>		
Primigravidae	114	15.0
Multigravidae	336	44.3
<i>Twin pregnancy:</i>		
First twin	120	15.7
Second twin	190	25.0
		40.7

In considering the mortality rate, all foetal deaths were included. However, in order to gain a more accurate assessment of the present position, the mortality figures were corrected where indicated to exclude: all macerated stillbirths, fresh stillbirths where the foetal heart tones were absent on admission or disappeared before any treatment could possibly have been instituted, and lastly neo-

TABLE II. OVERALL FOETAL MORTALITY RATE

	Cases	Foetal mortality	Corrected foetal mortality
Total series	760	210 (27.6%)	103 (13.6%)
Over 3 lb. 8 oz.	661	126 (19.1%)	60 (9.1%)
Over 4 lb. 8 oz.	567	94 (16.6%)	44 (7.8%)
Over 5 lb.	494	64 (12.9%)	35 (7.1%)

natal deaths where congenital abnormalities incompatible with life were noted.

A total of 450 single pregnancies and 310 twin pregnancies were delivered during the period of the survey (Table I).

Results

1. The overall foetal mortality for the whole series

was 27.6% corrected to 13.6%. As the foetal mortality rate in premature breech delivery is so high, especially under 3 lb., and even under 4 lb. 8 oz., the overall figures have been divided up so as to be able to assess better the mortality from breech delivery itself (Table II).

2. Separate tables have been drawn up for single and twin pregnancies since the problems encountered differ, thus obscuring the basic difficulties noted in single pregnancies. The mortality rate for twin pregnancy in this series (Table XI) compares very favourably with that found in single pregnancy.

3. When the foetal loss is considered in relation to the weight of the infant, a steady drop is noted in the foetal mortality as the weight increases (Table III).

That the foetal mortality is not higher in the weight groups over 9 lb. is due largely to the judicious use of caesarean section in this group of patients. Although the overall caesarean section rate is only 6.9% for the whole series, one-third of these large babies were delivered abdominally (Table IV).

TABLE IV. INDICATIONS FOR CAESAREAN SECTION IN SINGLE PREGNANCIES

Repeat (all contracted pelves)	13
First	18
Contracted pelvis	8
Diabetes	2
Previous myomectomy	2
Large baby	2
Placenta praevia	1
Prolonged labour	1
Postmature	1
Secondary sterility	1
	31
	18

Four foetal deaths: 1 normal baby, 1 macerated stillbirth, 2 with congenital abnormalities.

The best results during the period under review were found with nulliparous breech delivery, among which, during the last 3 years, there has not been a single avoidable death. Unfortunately the same improvement has not been noted with multiparous breech delivery.

4. The mortality in multigravidae is higher than in primigravidae due mainly to 3 factors:

(a) Higher incidence of premature breech deliveries in multigravidae.

TABLE III. FOETAL MORTALITY ASSESSED ACCORDING TO WEIGHT OF INFANT IN SINGLE PREGNANCIES

Weight (in lb.)	Primigravidae		Multigravidae		Total		Corrected mortality
	Cases	Mortality	Cases	Mortality	Cases	Mortality	
Under 3.5	8	7 (87.5%)	43	38 (88.4%)	51	45 (88.2%)	15 (29.6%)
3.5-4.5	9	4 (44.4%)	39	26 (66.6%)	48	30 (62.5%)	10 (20.8%)
4.5-5.5	21	2 (9.1%)	49	22 (45.0%)	70	24 (34.4%)	10 (14.3%)
5.5-6.5	43	8 (18.6%)	84	16 (19.6%)	128	24 (18.8%)	14 (10.9%)
6.5-7.5	34	2 (5.9%)	76	12 (16.2%)	100	14 (14.0%)	10 (10.0%)
7.5-8.5	8	0 (—)	28	5 (17.8%)	36	5 (13.9%)	1 (2.8%)
8.5-9.5	0	0 (—)	14	1 (7.2%)	14	1 (7.2%)	1 (7.2%)
Over 9.5	0	0 (—)	3	1 (33.3%)	3	1 (33.3%)	0 (—)
Total	114	23 (20.2%)	336	121 (36.0%)	450	144 (32.0%)	61 (13.6%)

TABLE V. FOETAL MORTALITY IN RELATION TO TYPE OF BREECH

Type of breech	Cases		Foetal mortality	
	Primigravidae	Multigravidae	Total	Corrected
Frank	42 (47.2%)	65 (44.6%)	20 (18.7%)	12 (11.2%)
Complete	17 (19.1%)	52 (35.6%)	20 (28.9%)	6 (8.7%)
Single footling	21 (23.6%)	17 (11.6%)	21 (55.3%)	12 (31.6%)
Double footling	9 (10.1%)	12 (8.2%)	6 (28.6%)	3 (14.3%)

(b) Higher percentage of these patients are only referred to hospital when in labour or when some complication has occurred.

(c) A tendency to assume that because the patient has previously been delivered normally, she will again. This results in the careful antenatal assessment, that is performed with primigravidae, being omitted. These same factors were also noted by Cox² and Boyson and Simpson.²

5. Extended legs were found to be more common in both primigravidae and multigravidae. This has been found to be of distinct value because, in a borderline case, or in a 'trial of breech', if the frank breech reaches the perineum without aid, a normal vaginal delivery can usually be effected without great difficulty. However, in this series, the foetal mortality rate is higher in breeches with extended legs than in the complete breech (Table V).

This paradox is probably largely due to the fact that complete and footling breeches are more carefully watched in labour since complications are expected. Thus trouble is diagnosed earlier and treatment can be instituted without delay in these cases.

6. The average size of the Bantu pelvis is much smaller than that of the European patient, whereas the size of the foetus is essentially the same in both racial groups. This results in an increased risk of difficulty with the after-coming head in the Bantu patient. The difference in foetal mortality noted in this series compared with that found by authors of papers dealing with the European patient is to a great extent due to this (Table VI).

TABLE VI. COMPARISON OF SIZES OF BANTU AND EUROPEAN Pelves

	Areas		Antero-posterior diameter		Transverse diameter	
	Inlet	Outlet	Inlet	Outlet	Inlet	Outlet (ISD)
Bantu						
This series	100.0	96.5	10.8	11.9	11.8	10.2
Heyns ⁶	101.23	88.8	10.7	11.6	11.9	9.7
Friedberg ⁴	102.0	97.0	—	—	—	—
European						
Gunn ⁵	123.0	103.0	—	—	—	—
Nicholson ¹¹	121.0	106.7	11.8	11.9	13.1	9.9
Moir ⁹	120.0	98.0	11.8	11.7	12.9	10.45
Ince and Young ⁷	126.8	93.7	11.6	13.9	13.2	10.5

Nicholson outlet area=93 sq. cm.
Ince and Young outlet area=115 sq. cm.

With BMH method of calculation.

7. The average length of labour in this series differed only slightly from that found in vertex presentation in this hospital. The length of the first stage of labour com-

pared closely with that noted by Schmitz¹² and Boyson and Simpson,² but the second stage of labour in the Bantu patient with breech presentation was found to be considerably shorter. In cases where labour lasted more than 24 hours the foetal mortality rate increased markedly. It is possibly better to do a caesarean section in these cases of prolonged labour especially where complicated by uterine inertia (Table VII).

TABLE VII. AVERAGE LENGTH OF LABOUR IN SINGLE PREGNANCIES

	First stage		Second stage
	Hours	Minutes	Minutes
Vertex presentation ..	10	6	17
This series	10	2	18
Primigravidae	12	53	23
Multigravidae	9	3	17

8. Table VIII (a) and (b) shows the complications encountered and the heavy toll of foetal life taken in both single and multiple pregnancies. The high incidence of complications seen is mainly due to the large percentage of unbooked cases delivered in this hospital—these being referred here specifically for some complication.

TABLE VIII. COMPLICATIONS IN SINGLE AND MULTIPLE PREGNANCIES

	(a) Single pregnancy		(b) Twin pregnancy	
	Cases	Mortality	Cases	Mortality
Congenital abnormalities incompatible with life ..	8	8	2	2
Macerated stillbirths ..	47	47	2	2
Toxaemia	15	4	20	1
Prolapsed cord	37	15	25	4
Internal version for malpresentation	23	6	21	6
Internal version for prolapsed cord	15	10	11	2
Accidental haemorrhage ..	6	6	1	0
Placenta praevia	14	12	4	1
Serious maternal disorders (2 diabetics, 2 cardiacs, 6 tuberculotics)	10	2	2	0
Erythroblastosis	4	3	2	1
Complicated cases under 3 lb. 8 oz.	—	—	19	15
Total	179	113	109	34

9. In patients where an episiotomy was omitted and no other complication was found, a high foetal mortality was noted in both primigravidae and multigravidae: in 50% of cases of otherwise unexplained foetal death in primigravidae and in 81% of cases of otherwise unexplained foetal death in multigravidae.

TABLE IX. FOETAL MORTALITY IN RELATION TO METHOD OF DELIVERY IN SINGLE PREGNANCIES

Method	Cases			Foetal mortality	
	Primigravidae	Multigravidae	Total	Total	Corrected
Spontaneous	17	84	101 (22.5%)	52 (51.5%)	18 (17.8%)
Assisted	69	162	231 (51.3%)	47 (20.3%)	22 (9.5%)
Extraction	16	21	37 (8.2%)	11 (29.7%)	8 (21.6%)
Internal version and extraction	6	44	50 (11.1%)	30 (60.0%)	12 (24.0%)
Caesarean section	6	25	31 (6.9%)	4 (12.9%)	1 (3.2%)
Delivery of the after-coming head:					
Mauriceau-Smellie-Veit	88	190	278 (66.3%)	68 (24.5%)	35 (12.6%)
Others (manual)	12	111	123 (29.3%)	65 (52.8%)	19 (15.5%)
Forceps (elective)	4	4	8 (1.9%)	2 (25.0%)	1 (12.5%)
Forceps (failed manual)	3	5	8 (1.9%)	3 (37.5%)	3 (37.5%)
Destructive	1	1	2 (0.5%)	2 (100%)	2 (100%)

Technique

An external cephalic version is attempted on all cases of breech presentation found at clinic at 34 weeks' gestation unless otherwise contraindicated. If this fails, the patient is seen again a week later and if version again fails, the patient is admitted to hospital for version under pethidine sedation. If still unsuccessful, a clinical and X-ray pelvimetry is performed.

The decision on whether the patient should be allowed to deliver vaginally or not is made on the results of these two investigations and on the estimated weight of the foetus at term. In all cases where version fails the patient remains in hospital until delivery. Unfortunately, until recently, this routine, except for attempted version, has been omitted in multiparous patients unless a history of previous difficulties at delivery was obtained.

Labour is conducted as for vertex presentation except that the patient is confined to bed and a vaginal examination is performed as soon as membranes rupture (Table IX).

Delivery: The patient is placed in lithotomy position, swabbed with a 10 and a 5% 'dettol' solution, towelled and catheterized. A vaginal examination is then performed to ensure that the cervix is fully dilated. A pudendal block is now inserted using 40 ml. of 1% carbocaine local anaesthetic. The patient is then encouraged to bear down and a wide episiotomy is performed as soon as the breech distends the perineum (not previously routine for multiparous breech delivery). The mother is allowed to deliver the breech spontaneously until the umbilicus appears, when a loop of cord is pulled down and checked for pulsation. The trunk and arms are then delivered by the mother's bearing-down efforts, assistance only being given when necessary. After delivery of the arms, the body is rotated so that the back lies superiorly and is then allowed to hang over the edge of the bed to encourage engagement of the head, as in the Burns' manoeuvre. Once engagement of the head is noted, the head is delivered slowly by the Mauriceau-Smellie-Veit manoeuvre. Other methods of delivery of the after-coming head are demonstrated only for teaching purposes. Forceps are only used for teaching purposes or when other methods of delivery of the after-coming head fail.

Using this technique the greatest single cause of foetal death has been intracranial haemorrhage, occurring especially in those cases where an episiotomy has been omitted

or where the weight of the foetus has been underestimated with the resultant need for excessive traction in order to achieve engagement of the after-coming head. (Tables X and XI).

TABLE X. CAUSES OF FOETAL DEATH IN SINGLE PREGNANCIES

Total 144. . .	No postmortem	73	Macerated stillbirths	47.
Intracranial haemorrhage		8		
Congenital abnormalities		3		
Asphyxia (difficult delivery)		3		
Atelectasis (normal delivery)		5		
Bronchopneumonia		2		
Intra-uterine pneumonia		1		
Kernicterus		1		
Erythroblastosis		1		

TABLE XI. FOETAL MORTALITY IN MULTIPLE PREGNANCY

(a) Foetal mortality in relation to weight of infant

Weight (in lb.)	Cases	Mortality	Corrected mortality
Under 3.5	48	39 (81.3%)	28 (58.3%)
3.5-4.5	46	12 (26.1%)	6 (13.0%)
4.5-5.5	96	9 (9.4%)	6 (6.3%)
5.5-6.5	81	3 (3.7%)	1 (1.2%)
6.5-7.5	34	3 (8.8%)	1 (2.9%)
7.5-8.5	5	0 (—)	0 (—)
Total	310	66 (21.3%)	42 (13.5%)
Total over 3.5 lb.	262	27 (10.3%)	14 (5.3%)

13 of the fresh stillbirths occurred before admission

(b) Infants over 3 lb. 8 oz.

Nulliparous	29	5 (17.2%)	3 (10.3%)
Multiparous	233	22 (9.4%)	11 (4.7%)
First twin	106	5 (4.7%)	2 (1.9%)
Second twin	156	22 (14.1%)	12 (7.7%)

(c) Foetal mortality in relation to method of delivery (over 3.5 lb.)

Spontaneous	98	10 (10.2%)	6 (6.1%)
Assisted	99	6 (6.1%)	3 (3.3%)
Extraction	25	1 (4.0%)	0 (—)
Internal version and extraction	34	11 (32.4%)	4 (11.8%)
Caesarean section	6	1 (16.7%)	1 (16.7%)

CONCLUSIONS

1. It is shown that *great care* is required in dealing with breech presentation in the multiparous patient as well as in the nulliparous patient. In this hospital, since this survey, all multiparous patients with breech presentation are admitted to hospital at 36 weeks' gestation for

routine clinical and X-ray assessment of the pelvis if external cephalic version fails. The decision on the method of delivery is taken on the pelvimetry results, the size of previous babies, and estimated weight of the present foetus at term.

2. *The place of version.* Until such time as it is possible to reduce the foetal mortality associated with breech delivery to approximate to that found with vertex presentation, version must continue to play an important role in the antenatal care of breech presentation in the Bantu patient.

3. An *episiotomy* should be performed for all breech deliveries whether in primigravidae or in multigravidae.

4. *The place of caesarean section.* Dealing in the Bantu with a pelvis that is so much smaller, but a foetus that compares in weight with that found in European practice, the question arises whether caesarean section should not be resorted to more often than is the case at present. The 4 main factors against this are:

(a) The earlier age at which pregnancy tends to occur in the Bantu, coupled with the very high infant mortality rate in this population, could easily lead to a situation where a third or fourth caesarean section has to be performed on a patient aged 20 years who has no living children.

(b) Whereas in the European patient a trial of labour (scar) can often be permitted following caesarean section for breech presentation, the small pelvis in the Bantu patient tends to preclude this from being done.

(c) The definite maternal and foetal mortality rate found resulting from caesarean section.⁸

(d) The long-term maternal complications noted by Bender.¹

5. At this hospital *symphysiotomy* is now being tried in cases of breech delivery where difficulty with the after-coming head is anticipated, providing that the pelvic contracture found is purely in the transverse diameters of the pelvis. It is felt that possibly this procedure is in many ways preferable to caesarean section in the Bantu population.

SUMMARY

1. A survey of 760 breech deliveries in the Bantu is presented.

2. The results are discussed giving possible reasons for the high foetal mortality found.

3. The technique for dealing with breech presentation at this hospital is described.

4. Various ways of reducing the foetal mortality are discussed.

5. The place of caesarean section, and possibly symphysiotomy, in breech delivery in the Bantu patient is evaluated.

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