

AN EVALUATION OF MANAGEMENT OF DELIVERY OF THE SECOND BABY IN TWIN PREGNANCY

by

DEBIDAS DUTTA,* M.D., D.G.O.

and

R. K. DAS,** D.G.O., M.O., F.I.C.S.

Although the perinatal mortality in general has now-a-days registered an appreciable fall, it still remains quite high in twin pregnancy. With the exception of a few (Aaron and Halperin, 1955; Waddell and Hunter, 1960), almost all the authors (Potter and Crunden, 1941; Munnel and Taylor, 1946; Russell, 1952; Patel and Patel, 1962; Joseph, 1964; Roy Choudhury, 1967; Jacob and Bhargava, 1973) have observed a higher foetal mortality amongst the second twin than amongst the first. However, there is no uniformity of opinions about the best method of management of labour of the second twin for improving the foetal salvage. While some obstetricians, especially the elders, (Bender, 1952; Percival, 1963; Mudaliar and Menon, 1962; Holland and Brews, 1969) advise to withhold active interference in absence of any complication at least for 30 minutes after the birth of the first baby, many others (McDonald, 1962; Roy Choudhury, 1967; Donald, 1969; Hellman and Pritchard, 1971) recommend artificial rupture of membranes immediately or soon after the birth of the first twin. There is also some difference of opinion as regards the optimum time interval between the births of the two

babies which is most favourable for the survival of the second baby. According to Roy Choudhury, (1967), it is 6 to 10 minutes, but according to most others, it is 12 to 20 minutes Jacob and Bhargava, (1973). We therefore, think that further clinical study of twin labour will be worthwhile in order to find out what actually is the best method of management of labour after the delivery of the first twin so far as the fate of the second baby is concerned. This study was undertaken with this object in view and a preliminary report of our experience and observations in the delivery of 54 second twins is presented here.

Material and Methods

This study consists of 54 cases of twin deliveries conducted personally by one or other of the writers. After taking a detailed history and a thorough clinical examination including necessary investigations, the cases were divided into four groups according to the methods of management of delivery of the second twins:

Group I—30 cases otherwise uncomplicated were allowed to deliver spontaneously, irrespective of the time interval between the births of the first and second babies.

Group II—14 cases. After ensuring the longitudinal lie and pressing down the presenting part of the second baby, the membranes were ruptured artificially

*Registrar, Dept. of Obstetrics & Gynaecology, Silchar Medical College.

**Formerly, Prof. & Head of Dept. of obst. & Gynaecology, Gauhati Medical College.

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within five minutes of the birth of the first baby. There was no other interference without a definite indication.

Group III—5 cases. Artificial rupture of membranes as in Group II followed by intravenous drip of syntocinon—2 units in 540 ml. of 5 per cent dextrose solution. No other interference unless indicated.

Group IV—5 cases delivered by lower segment caesarean section. Four cases had elective caesarean section for shoulder presentation of the first twin, post-maturity and previous successful repair of V.V.F. and one had an emergency section for prolapse of the cord and transverse lie of the first baby.

The duration of pregnancy, associated complications if any, presentation, position, foetal condition, duration and complications of labour, birth weight and condition of the baby at birth and behaviour of the baby and the mother till discharge were carefully observed and recorded.

Observations and Results

babies within three to 30 minutes of the birth of the first twins. Six (20.0%) within 31 to 60 minutes and in one the time interval was 11 hours 25 minutes. If this case is excluded, the average time interval comes down to 21.0 minutes only.

Three women under this group had slight to moderate vaginal bleeding shortly before the delivery of their second twins. Two had had postpartum haemorrhage and one had retained placenta. All of them could, however, be managed successfully by usual treatment and there was no maternal death.

Fourteen out of 30 second babies of this group were lost giving a high rate of perinatal mortality of 46.6 per cent. But if the three macerated foetuses and one anencephalic baby are excluded, the corrected perinatal mortality is reduced to 33.3 per cent. (Table I). No cause of foetal deaths except prematurity could be found. Table II shows that all the babies that died were premature weighing 700 gm. to 2000 gm.

TABLE I
Perinatal Mortality of Second Twin in Different Groups

Groups	Total No. of cases	Mean delivery interval	No. of perinatal deaths	Perinatal deaths in per cent
Normal	30	43.20 minutes	14	46.6
(Non-interference)				++ 33.3
ARM	14	32 minutes	3	21.4
ARM plus	5	7 hrs. 11 minutes	Nil	—
Syntocinon	—	—	—	—
LSCS	5	—	1	20

++ Corrected figure.

Group I—Table I shows that the average time interval between the birth of the first and second babies in this group was 43.20 minutes. However, 23 out of 30 cases (76.6%) delivered the second

Group II—(ARM)

The mean time interval of deliveries of two twins in this group of artificial rupture of membranes was 32.0 minutes. (Table I). 11 out of 14 cases (78.5%)

TABLE II
Relationship of Birth Weights and Perinatal Mortality of Second Twin

Birth weights	No. of cases	No. of deaths		Gross perinatal mortality (in per cent)	Corrected perinatal mortality (in per cent)
		Neonatal deaths	Still births		
700 gm.-1200 gm	12	8	+ 3	91.6	75.0
1201 gm.-1500 gm	16	3	1	25	25
1501 gm.-2000 gm.	19	—	3	15.7	5.2
2001 gm.-2500 gm.	6				
2501 gm.-3000 gm.	1				
Total	54	11	7	33.3	25.9

+ 1 macerated, 1 anencephalic; 2 macerated.

delivered the second baby within 30 minutes of the birth of the first twin. In four cases, the delivery of the second baby had to be cut short by application of forceps for foetal distress. One had vaginal bleeding before the birth of the second twin and 4 had postpartum haemorrhage. All of them responded well to usual treatment and there was no maternal mortality.

Three out of 14 babies of this group were lost giving a perinatal death rate of 21.4 per cent. No cause of foetal mortality except prematurity could be found. Group III—(ARM and Oxytocin group).

Contrary to expectation, the average time interval between the births of the first and second twins in this group was quite prolonged—7 hours 11 minutes, but still there was no foetal or maternal mortality (Table I). One patient required forceps application due to foetal distress and there was no other complication.

Group IV—(L.S.C.S. group)

The indications for caesarean section in this group of five cases have been already mentioned. One patient had postpartum haemorrhage which could be controlled easily. There were no other complications and no maternal mortality. (Table I). One premature baby weighing 1,300 gm. could

not be saved. It was delivered by caesarean section for prolapse of the cord and transverse lie of the first baby.

The corrected perinatal mortality in the whole series of cases under this study was 31.4 per cent—29.6 per cent amongst the first babies and 33.3 per cent amongst the second. All the babies that died were premature, weighing 2,000 gm. or less. (Tables I and II).

The incidence of prematurity among the first and second twins was 79.6 per cent and 87.0 per cent respectively.

Table IV shows that out of seven second babies that had a long delivery interval—varying from one hour five minutes to as long as 18 hours 40 minutes, only one was lost and that was a very premature baby weighing only 1,200 gm at birth.

Discussion

The corrected perinatal mortality among 108 twin babies of the present series was 31.4 per cent. This is incidentally the same as reported by Patel and Patel in 1962 and compares very well with 31.8 per cent observed by Jacob and Bhargava (1973) and 34.4 per cent by Joseph (1964). Lower perinatal death rates—15.2 per cent (Roy Choudhury, 1967), 18.0 per cent (Bhatia, 1965), and

TABLE III
Fate of First and Second Twin in Relation to Birth Weight

Birth weights	First twin				Second twin			
	No. of first twin	Neonatal deaths	Still births	Perinatal deaths	No. of second twin	Neonatal deaths	Still births	Perinatal deaths
Upto 2000 gm.	43	12	4	16	47	11	+ 7	18
Above 2000 gm.	11	—	—	—	7	—	—	—

First twin (perinatal mortality) = 29.6% + 3 macerated
 Second twin (perinatal mortality) = 33.3% 1 anencephalic
 Total (perinatal mortality) = 31.4%

TABLE IV
Prolonged Delivery Interval and Fate of Second Twins

Patients	Delivery interval	Birth weight in gram	Condition of Baby
L.D.	11 hrs. 35 mts.	1200	Died after birth
S.L.	1 hr. 35 mts.	2500	Well
J.P.	1 hr. 50 mts.	1800	Well
K.K.	13 hrs. 45 mts.	2500	Well
T.	18 hrs. 40 mts.	1800	Well
S.D.	1 hr. 40 mts.	2900	Well
K.K.	1 hr. 05 mts.	1600	Well

26.2 per cent (Trivedi, 1965) have also been reported in the literature.

The most important factor responsible for this high rate of foetal mortality in twin pregnancy appears to be prematurity. All the babies that died in the present series, irrespective of the methods of management were premature weighing 600 gm to 2,000 gm. (Table II). Prematurity was the cause of foetal deaths in 89.1 per cent and 87.8 per cent of the cases reported by Jacob and Bhargava (1973) and Joseph (1964) respectively. However, anoxia was an associated feature in three cases of antepartum haemorrhage and in one case of prolapse of the cord in the present study. One baby had gross congenital malformation (anencephaly) and the cause of death in three

macerated babies could not be definitely determined in absence of autopsy examination.

The perinatal mortality in the present series was higher (33.3%) among the second twins than among the first babies (29.6%). This is in conformity with the observations of most of the authors referred to earlier. According to Roy Choudhury (1967), the chance of survival of the second twin is 50 per cent less favourable than that of the first baby, because, after the birth of the first baby the uterus may undergo retraction leading to insufficiency or separation of the placenta of the second baby before its delivery. There is also increased chance of prolapse of the cord, transverse or oblique lie demanding emergency interfe-

rence and infection. It is, therefore, advised that the time interval between the deliveries of the two twins should be cut down to 6 to 10 minutes. (Roy Choudhury, 1967), by artificial rupture of the membranes immediately after the birth of the first baby. But from the present study of this small series of twin deliveries, one cannot arrive at a definite conclusion about the role of delivery interval in improving the salvage rate of the second babies. Table I apparently shows that the perinatal mortality in Group I was higher (33.3%) than in Group II (21.4%) and the average time interval in the former was longer (43.20 minutes) than in the latter (32.0 minutes). But, it should be noted that if one case in which the time interval was 11 hours 25 minutes is excluded from Group I, the average time interval comes down to 21.1 minutes only. Only in 7 out of 30 cases of this group, the time interval exceeded 30 minutes. Of the five perinatal deaths among these seven cases, one was macerated, and four were very premature weighing 1,000 gm. to 1,200 gm. only. Thus, the higher mortality in Group I could hardly be attributed to longer time interval between the deliveries of the first and second babies.

The scrutiny of the results in Group III again reveals more startling and unexpected findings. In spite of artificial rupture of membranes and syntocinon drip soon after the birth of the first baby, the average time interval of deliveries was 7 hours 11 minutes and still, there was not a single mortality. Of course, the number of cases in this group was only 5—too small to be statistically significant, and inclusion in this group of one case admitted 18 hours after the birth of her first baby has obviously influenced the average time interval. This is why we intend to continue this work till a

reasonably good number of cases have been studied.

Table IV shows that among all the 7 second twins of this series in which the delivery interval was very prolonged—varying from one hour five minutes to as long as 18 hours 40 minutes, only one baby died and that was grossly premature weighing 1,000 gm at birth. All this suggests that prematurity is the most important and predominating factor as a cause of foetal mortality in twin pregnancy and perhaps, it accounts for more foetal loss than the time interval of deliveries. Sinha (1969) and Bender (1952) are of the same opinion. We therefore, believe that in order to lower the perinatal mortality in twin pregnancy, the most important step should be towards improvement of antenatal care of the mothers with a view to prevent premature labour by preventing and treating as early as they arise, the common complications of twin pregnancy such as anaemia, malnutrition, pre-eclampsia, eclampsia, antepartum haemorrhage, premature rupture of membranes, etc. and by early hospitalisation of patients as recommended by Aaron and Halperin (1955), Patel and Patel (1962), Baird (1969) and Holland and Brews (1969).

Although in the present series, the incidence of prematurity was higher (87.0%) amongst the second babies than among the first (79.6%), prematurity which usually affects both the twins, cannot satisfactorily explain the higher perinatal mortality among the second babies. At this stage, we cannot say with certainty whether prolonged delivery interval or routine interference immediately after the birth of the first baby is responsible for higher foetal loss among the second twins. This study suggests that the optimum time interval may not al-

ways be achieved by simple rupture of membranes artificially and oxytocin drip, breech extraction, internal podalic version and extraction, vacuum and forceps extraction may be necessary to complete the delivery of the second baby within 6 to 10 minutes of the birth of the first baby. But such interference as a routine, especially when the babies are premature, may not be less detrimental to the welfare of the second babies. Of course, in presence of complications, active interference is indicated. Almost all observers have cautioned against undue haste and undue delay in the delivery of the second baby and we are one with Bhatia (1965) and Jacob and Bhargava (1973) when they say that every case must be judged on its own merit for deciding on the optimum time and method of interference.

Summary

1. This is a report on our experience and observations of the deliveries of 54 second twins managed by four different methods.

2. The perinatal mortality was 33.3 per cent against 29.6 per cent amongst the first twins.

3. Prematurity was found to be the most important and outstanding single factor responsible for higher foetal mortality amongst both first and second twins.

4. The value of routine interference by immediate rupture of membranes and oxytocin drip in shortening the delivery interval for improving the survival rate of the second twins could not be confirmed by the study of this small group of cases.

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