FOETAL OUTCOME IN CAESAREAN DELIVERIES

by

N. BASAK,* M.B.,B.S., D.G.O.

K. SIKDAR,** M.O., M.R.C.O.G.

and

G. S. MANDAL,*** F.R.C.O.G.

Spontaneous uncomplicated vaginal deliveries should be the aim of each and every obstetrician. However, the goal is yet to be achieved. Caesarean section, which is considered to be comparatively safer than difficult instrumental deliveries, is frequently in use to deliver babies in complicated deliveries. At times foetal morbidity and mortality occurs following sections but their relative frequencies in comparison to vaginal deliveries were not properly assessed. Hence the present study is undertaken.

Materials and Methods

This study was based on 251 consecutive L.U.C.S. with births of 253 babies (2 pair of twins) and on 250 spontaneously delivered babies from 250 mothers. Comparison was made against (1) neonatal morbidity and mortality, (2) 1 and 5 minutes Apgar score and (3) neurological findings at 1 and 3 months of the surviving babies. The usual caesarean deliveries of this hospital vary in between 10 to 12% of total deliveries.

Results

There were 56 (22.13%) morbidity and 20 (7.9%) mortality (including 5 stillbirths) amongst 253 caesarean babies against 13 (5%) morbidity and 5 (2%) mortality without stillbirths in 250 spontaneously delivered babies. Excluding 5 stillbirths the mortality in caesarean babies is 5.92% (15) against 2% (5) in vaginally delivered babies.

The morbidity and mortality in caesarean babies were 8.84% (10) and 2.65% (3) of 113 cases of primigravidas, 16.61% (15) and 2.22% (2) amongst 90 babies of 2nd gravida, 61.99% (11) and 16.66% (3) out of 18 babies of 3rd gravidas, 68% (11) and 31.25% (5) amongst 16 babies of 4th gravidas, 56% (9) and 43.75% (7) out of 16 babies of 5th or higher gravidas. Thus percentage of mortality rose amongst Caesarean babies as the number of pregnancies increased.

Maternal age, morbidity and mortality in C.S. babies

Amongst 20 babies born in mothers aged below 20, the morbidity and moriality respectively were 5 (25%) and 2 (10%). Amongst 90 babies born to mothers aged between 20-24 the morbidity and mortality were 30 (33.3%) and 2 (2.22%). Seventy babies born to mothers aged 25-29 showed 10 (14.28%) morbidity and 5 (7.14%) mortality. Forty-four babies born to 42 mothers

*P. G. Student,

**Registrar,

***Professor,

Dept. of G and O, Calcutta Medical College, Calcutta.

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undertaken in patients with absent F.H.S. for maternal indications.

Thus foetal morbidity and mortality were commoner when gestational period was less. Male and female ratio amongst babies delivered by C.S. was 3.65:2.42, amongst morbid 1.4 to 1.35, and amongst dead 3:2, showing that male babies were more vulnerable.

Table III shows that as the birth weight increases, both the morbidity and mortality decreased.

Table IV shows that foetal mortality was commoner when sections were undertaken for maternal A.P.H., toxaemia and medical diseases. Morbidity was commoner in malpresentation group besides A.P.H. and maternal disease.

The pattern of mortality in 15 babies shows that asphyxia and prematurity were the important causes. Besides these 15 N.N.D., there were 5 stillbirths due to maternal placenta praevia (2), ruptured uterus (1) and concealed variety of accidental haemorrhage (1).

It has been observed that in association with maternal and foetal conditions, caesarean sections caused higher percentages of foetal morbidity and mortality

Causes of Morbidity and Mortality of Vaginally Delivered Babies

Two babies were morbid due to aspiration pneumonia, 3 due to infections, 3 due to asphyxia and 5 due to prematurity amongst total 13 morbidity. Mortality in 5 (2%) babies were caused by infection (1), and prematurity (4).

TABLE III

Morbidity and Mortality Pattern in Relation to Birth Weights

	1000 Gm	1001-1500	1501-2000	2000-2500	2501-3000	Above 3000
Total No. and %	3 (1.18%)	8 (3.38%)	25 (9.9%)	90 (33.4%)	102 (40%)	25 (9%)
Morbidity No. and %	3 (100%)	7 (87.5%)	18 (72%)	10 (11%)	5 (5%)	13 (50%)
Mortality No. and %	3 (100%)	7 (87.5%)	5 (20%)	3 (3.3%)	2 (2%)	—

TABLE IV

Indications of C.S. and its Relationship with Foetal Morbidity and Mortality

Indications	No. and %	Morbidity No. and %	Mortality No. and %
Previous sections	40 (15.8%)	6 (15%)	—
C.P.D.	30 (11.8%)	4 (13.3%)	2 (6.6%)
A.P.H.	25 (9.8%)	10 (40%)	6 (25%)
Uterine dysfunctions	35 (13.8%)	12 (34%)	2 (5.7%)
Malpresentations	16 (6.3%)	5 (31%)	1 (6.2%)
Toxaemia	30 (11.8%)	8 (26.6%)	3 (10%)
Maternal diseases	5 (2%)	3 (60%)	2 (40%)
Ruptured uterus	1 (0.4%)	—	1 (100%)
B.O.H., Foetal distress etc.	71 (28%)	8 (11%)	3 (4.2%)

TABLE V

Causes of Morbidity and Mortality (15 N.N.D.) in Caesarean Babies

	Asphyxia	Prematurity	Dysmaturity	R.D.S.	Pneumonia	Sepsis or infection	Others
Morbidity	20 (7.9%)	9 (3.9%)	6 (2.3%)	2 (0.79%)	11 (4%)	3 (1.2%)	5 (8.9%)
Mortality	6 (2.37%)	4 (1.55%)	—	2 (0.79%)	2 (0.79%)	1 (0.4%)	—

TABLE VI

Morbidity and Mortality Patterns in 250 Vaginally Delivered Babies According to Foetal and Maternal Conditions

	Normal deliveries	Malpresentation	Foetal distress	Toxaemia	B.O.H.	A.P.H. and P.P.H.	Others
Total deliveries (250)	122 (48.8%)	26 (10.4%)	70 (28%)	20 (8%)	6 (2.4%)	4 (1.6%)	2 (0.8%)
Morbidity (13)	3 (2.4%)	3 (11.5%)	3 (1.2%)	2 (10%)	—	2 (50%)	—
Mortality (5)	1 (0.8%)	—	1 (0.4%)	1 (5%)	—	2 (50%)	—

TABLE VII

Apgar Score (1 and 5 Minutes) by Type of Delivery

Type of delivery	Apgar score (1 mts)			Apgar score (5 mts)			Total No. of babies failed to recover
	0-3	4-6	7-10	0-3	4-6	7-10	
1. General Anaesthesia in L.U.C.S.							
(a) Emergency	35	50	88	7	8	158	10 (excluding 5 stillbirths
(b) elective	10	15	45	1	3	66	4
2. Epidural in L.U.C.S.							
(a) emergency	—	1	3	—	1	3	1
(b) elective	—	—	6	—	—	6	—
3. Vaginally delivered	8	40	202	2	3	245	5

Table VII shows that amongst 45 babies with 0-3 Apgar score at 1 minute delivered by C.S. under general anaesthesia, 8 babies failed to recover in 5 minutes, whereas out of 8 babies delivered vaginally with similar apgar score, 2

babies failed to recover. Of the 65 babies with 4-6 Apgar score delivered by C.S. under general anaesthesia, 11 failed to recover in 5 minutes. One case of C.S. baby under epidural anaesthesia also failed to recover. Amongst 40 vaginally delivered babies, 5 cases failed to recover at 5 minutes.

It is clear from the above observations that general anaesthesia administered during section has temporary C.N.S. depressive effects, resulting in higher perinatal morbidity and mortality. From this aspect epidural anaesthesia is comparatively safer, although the perinatal morbidity and mortality are higher than vaginally delivered groups. However, the number of cases in this study is very small. Besides anaesthesia other factors like pre-existing foetal hypoxaemia in cases of A.P.H., toxaemia etc. also added to these C.N.S. depressive effects in caesarean babies causing higher morbidity and mortality.

6 months. The perinatal morbidity and mortality in caesarean babies were more than 4 times than in vaginally delivered babies. Ghosh *et al* (1971) and Dutta and Dutta (1977) reported 12 to 19% perinatal mortality in Caesarean babies against 6.5 to 7.3% in vaginally delivered babies. Indications for caesarean sections, type of C.S. emergency or planned, type of anaesthesia and presence or absence of foetal distress, all influenced the perinatal death rate in caesarean babies. This indicated the necessity of early and timely decission to undertake C.S. to reduce foetal morbidity and mortality. Mortality rate in caesarean babies is also dependent on gestational period, social condition, maternal age and parity. The low Apgar score found in caesarean babies compared to vaginally delivered babies were mostly due to C.N.S. depressant effects of anaesthesia. It has further been observed that neurological abnormalities are some-

TABLE VIII

One and Six Months Neurological Examinations (excluding stillbirths)

Months	Type of abnormality	General Anaesthesia Caesarean	Epidural Sections	Vaginal deliveries
1 month	Suspected	3	—	1
	Normal	220	10	244
6 months	Suspected	2	—	—
	Normal	221	10	245

At six months examinations, only 2 (0.84%) babies delivered by C.S. showed some neurological abnormality against none in vaginally delivered group.

Comments

To assess the foetal outcome in caesarean sections, 253 babies delivered by 251 mothers (2 pairs of twins) by L.U.C.S. was compared with 250 Vaginally delivered babies. They were followed up to

what higher in caesarean babies probably due to C.N.S. depressant effects. Higher percentages of deaths amongst caesarean babies compared to vaginally delivered babies are also due to prematurity and neonatal infections in this series. Hence the existence of well equipped nursery with a premature baby unit may reduce the mortality rate of caesarean babies. However neonatal infection is also to be checked.

Acknowledgements

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