

PERINATAL MORTALITY IN CAESAREAN SECTION DELIVERIES

By

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SUMMARY

Perfect neonatal outcome being every Obstetrician's goal, a perinatal loss in a Caesarean Section delivery causes much concern. During 3 year period commencing on 1st January 1984 there were 100 cases of Caesarean Section associated with a perinatal loss at the K.E.M. Hospital, Bombay. The average Caesarean Section rate for this period was 7.07%. The average perinatal mortality in Caesarean Section deliveries was 12.7% which was 1.8 times more than that in vaginal deliveries. Among the 3 years studied, in 1984, with the highest Caesarean Section rate of 7.6%, the overall perinatal mortality rate of 6.68% was the lowest, in spite of having the highest perinatal mortality in Caesarean Section deliveries of 13.68%.

In 52% of these cases the indication for Caesarean Section was in maternal interest where the fetal maturity had to be ignored. These included severe Pregnancy Induced Hypertension (23%) and bleeding Placenta Previa (22%). 81% of all the neonates were of low birth weight and 71% were preterm. The major causes of perinatal death were Asphyxia (47%) and Low Birth Weight (42%). Fetal Asphyxia was due to intra uterine and intrapartum hypoxia caused by pregnancy and labour complications, prematurity, depressant effect of anaesthetics and Respiratory Distress Syndrome.

Introduction

Over the past decades the incidence of caesarean section has increased. This has been mainly due to a greater number of caesarean sections being done for fetal indications. As perfect neonatal outcome is every obstetricians' goal, a perinatal loss in a caesarean section delivery causes much concern. During 3 year period commencing on 1st January 1984 there

were 100 cases of caesarean section associated with a perinatal loss. The average perinatal mortality in caesarean section deliveries was 12.7% which was 1.8 times more than that in vaginal deliveries. These perinatal losses are analysed.

Material and Methods

At the K.E.M. Hospital, Bombay from 1st January 1984 to 31st December 1986 all cases of perinatal mortality in caesarean section deliveries were analysed

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Accepted for publication on 5-7-88.*

with reference to the Obstetric History, Antenatal Care, Indication for Caesarean Section, Birth Weight, Gestational Age, Apgar Scores, Cause of Death and time of expiry. Also the incidence of Caesarean Section, the overall perinatal mortality rate and the perinatal mortality rate in Caesarean deliveries as compared to vaginal deliveries was tabulated.

Results

In Table I, the Caesarean Section rate, overall perinatal mortality rate, perinatal

Section. In the remaining 48 cases, the Caesarean Section was done in fetal interests. In all the 8 cases of Abruption Placentae the fetal heart sounds were heard prior to Caesarean Section. Of the 7 cases where the indication was fetal distress, oxytocin augmentation of uterine contractions had been done in 3 cases. Intrapartum electronic fetal monitoring or fetal scalp blood sampling was not done in any case. Fetal distress was detected by clinical auscultation of fetal heart rate and meconium staining of the liquor amnii.

TABLE I
Caesarean Section Rates and Perinatal Mortality

Year	C.S. rate %	Overall PNM %	PNM in Caesarean deliveries %	Rate of PNM in Caesarean Section to that in Vagi- nal Deliveries
1984	7.6	6.68	13.68	2.23
1985	6.8	7.5	12.16	1.7
1986	6.8	8.3	12.25	1.53
Average	7.07	7.47	12.7	1.8

mortality in Caesarean Deliveries and the ratio of perinatal mortality as compared to vaginal deliveries is depicted for the years 1984 to 1986.

There were 40 primiparas, 57 multiparas and 3 patients with habitual abortions. Only 54 patients were registered at the hospital's antenatal clinic. Of these 26 had come for more than 3 antenatal visits and 34 had registered before completion of 28 weeks of gestation. The indications for Caesarean Section are depicted in Table 2. In 52 out of these 100 cases the indication for Caesarean was primarily in maternal interest. These included the Caesarean Sections for pregnancy induced hypertension, placenta pravia with active bleeding, rupture uterus and previous Caesarean

TABLE II
Indications for Caesarean Section

Indication	Number	Per cent
Pregnancy Induced Hypertension	23	23
Placenta Previa	22	22
Abruption Placentae	8	8
Breech Presentation	8	8
Failed Inductions	8	8
Fetal Distress	7	7
Dystocia	6	6
Cord Prolapse	6	6
Previous Caesarean Section	5	5
Transverse Lye	3	3
Rupture Uterus	2	2
Bad Obstetric History	1	1
Triplets	1	1
	100	100

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The distribution of these 100 cases according to the birth weight is shown in Table 3. 81 out of 100 cases had a birth weight of less than 2.5 kg. Gestational age as estimated by history of last menstrual period, clinical and ultrasound examination is depicted in Table 4. 71 out of 100 cases were preterm. The Apgar Scores at 1 and 5 minutes are displayed in Table 5. The division of cases according to the cause of death is tabulated in Table 6. Deaths due to fetal asphyxia include intrauterine and intrapartum hypoxia, cord prolapse and meconium aspiration. Low birth weight deaths were due to prematurity and intrauterine growth retardation. The incidence of Respiratory Distress Syndrome was greater in Caesarean Section deliveries. The single case of congenital anomaly comprised of a choledochal cyst causing obstructive jaundice. A split up of the cases according to the time of death is

TABLE III
Birth Weight

Birth Weight	Number	Per cent
Over 3 Kg.	7	7
2.5-3 kg.	12	12
2 -2.49 kg.	26	26
1.5-1.99 kg.	32	32
1 -1.49 kg.	23	23
	100	100

TABLE IV
Gestational Age

Gestational Age	Number	Per cent
Over 42 weeks	3	3
37 to 42 weeks	26	26
35 to 37 weeks	33	33
33 to 35 weeks	23	23
Less than 33 weeks	15	15
	100	100

presented in Table 7. Amongst the neonatal deaths occurring within the first 48 hours, 58.8% were due to fetal asphyxia. Whilst among the neonatal losses occurring between the 3rd and 7th days of life, 69.2% were due to low birth weight.

TABLE V
Apgar Scores' — Number of Cases

Apgar Score	1 Minute	5 Minutes
0	27	27
1 to 6	51	29
7 to 10	22	44
Total:	100	100

TABLE VI
Cause of Death

Cause	Number	Per cent
Fetal Asphyxia	47	47
Low Birth Weight	42	42
Neonatal Infection	10	10
Congenital Anomaly	1	1
	100	100

TABLE VII
Time of Expiry

Time	Number	Per cent
Macerated still Birth	2	2
Fresh still Birth	25	25
Within first 48 hours	34	34
3rd to 7th day	39	39
	100	100

Discussion

The Caesarean Section rate in the institution, where the study was conducted has almost doubled from 3.65% in 1976 to 7.07% in 1984-86. In this study, with the highest Caesarean Section rate of 7.6% in 1984, the lowest overall perinatal mortality in the 3 years under study was achieved. However in 1985

and in 1986 in spite of a constant Caesarean Section rate of 6.8% the perinatal mortality rate was higher by 8/1000 in 1986. Worldwide, the increased frequency of Caesarean Section delivery has been accompanied by an absolute decrease in perinatal mortality. Other contributory factors have been better antenatal care, electronic fetal monitoring and advanced neonatal care. O'Driscoll and Foley (1983) and Pearson (1984) have shown that a marked increase in the Caesarean Section rate will not necessarily improve the perinatal outcome.

The perinatal mortality in Caesarean Section deliveries was 2.2, 1.7 and 1.5 times that in vaginal deliveries during the years 1984, 1985 and 1986 in the present study. Evrard JR (1980) has reported it to be 1.5 times that in vaginal deliveries. Perinatal mortality depends on the indication for Caesarean Section, it being higher in cases of abruptio placentae, pregnancy induced hypertension and placenta praevia which together constituted 53% of all cases. Here the cause of death was low birth weight in 85% of cases.

Eightyone per cent of cases had a birth weight less than 2.5 kg. In the series reported by Evrard JR (1980) 68% had a birth weight less than 2.5 kg. This clearly depicts the association between low birth weight and perinatal mortality. Yet some workers from developed countries advocate, a Caesarean Section delivery for all low birth weight infants (Stewart and Reynolds (1974), Beverley DW (1984) and Tejani N (1984)).

White E *et al* (1985) reported that the incidence of Respiratory Distress Syndrome is increased among infants delivered by Caesarean Section by a ratio of 1.6 after adjusting gestational age odds. A lack of labour with decreased compres-

sion of the fetal thorax is believed to be responsible. Evrard JR (1980) reported a 10.3% incidence of Respiratory Distress Syndrome in Caesarean Section deliveries. In our series the incidence was lower. This may be due to the mode of infant delivery at Caesarean Section followed at our hospital. In cases where there is no acute fetal problem, on delivery of the head at Caesarean Section gentle oropharyngeal suction is performed and the uterus is made to contract with oxytocics. Thus the infant's thorax is compressed and the rest of the body is squeezed out.

Conclusion

The perinatal mortality in Caesarean Section deliveries is 1.8 times more than that in vaginal deliveries. The important causes for these losses are:

- (1) The indication for Caesarean Section—These pregnancy complications necessitating delivery of a premature baby and causing intrauterine anoxia due to the underlying pathology.
- (2) Low Birth Weight—In 81% of cases the birth weight was less than 2.5 kg. Low Birth Weight was the cause of death in 42% of the cases. 70% of them occurring between the 3rd and 7th days of neonatal life.
- (3) Fetal Asphyxia—In 47% of cases asphyxia was the cause of death. This was due to intrauterine and intrapartum anoxia, respiratory distress syndrome, depressant effect of anaesthesia and maternal complications. It was responsible for 60% of all neonatal deaths within the first 48 hours and for all the fresh stillbirths.

But in spite of these hazards to the neonates delivered by Caesarean Section, the overall perinatal mortality can be reduced with the judicious use of Caesarean Section.

We wish to thank the Dean of K.E.M. Hospital and Seth G.S. Medical College for permitting us to publish hospital data.

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