

MATERNAL MORTALITY IN CAESAREAN SECTION

by

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Caesarean section is being increasingly used for obstetric problems during the last two decades because of availability of improved methods of anaesthesia, blood transfusion and antibiotics. There has also been a better understanding of fluid and electrolyte balance during labour. But the supposed safety of the operation has also given rise to complacency. There is often a tendency to take the

Table I shows how the incidence of caesarean section has increased in two teaching hospitals of Calcutta—Medical College Hospital and Nilratan Sircar Medical College Hospital.

In the present day many caesarean sections are performed for foetal indications.

Table II shows the pattern of perinatal mortality in the above two teaching hospitals during the last 15-20 years.

TABLE I
Incidence of caesarean section (per cent)

	1958	1965	1972	1973	1974	1975	1976	1977	1978
M.C.H.	1.98	—	7.10	9.54	9.30	9.50	12.90	11.27	13.12
N.R.S.	—	3.89	—	6.10	8.23	8.44	10.53	12.18	10.17

operation very lightly, and it must be admitted that a number of operations are being performed in all Institutions for some minor and doubtful indications. This increases the number of post-caesarean pregnancies, the risk of which is higher than ordinary pregnancies. Caesarean section needs constant re-appraisal and self-criticism. Only this can help us to improve our results and possibly lower the incidence of caesarean section to a certain extent.

TABLE II
Perinatal mortality (per 1000 births)

Year	M.C.H.	N.R.S.
1956-60	70.6	—
1965	—	73.0
1971-75	73.9	—
1975	81.3	66.5
1976	68.0	53.0
1977	81.5	69.0
1978	89.0	53.9

This Table clearly shows that increased incidence of caesarean section is not always associated with a simultaneous reduction in perinatal mortality. The authors presume that the same trend about the incidence of caesarean section will be found in other big hospitals.

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During the 4 years 1975-1978, 2031 caesarean sections were performed in Nilratan Sarcar Medical College Hospital, Calcutta, out of a total of 19, 642 deliveries. The indications of caesarean section are presented in Table III. From

TABLE III
Indications (N.R.S. Hospital, 1975-78)

Indication	No. of cases
Cephalo-pelvic disproportion	489
Previous caesarean section or hysterotomy	333
Abnormal uterine action	198
Placenta praevia	194
Accidental haemorrhage	9
Postmaturity	161
Breech presentation	151
Other malpresentations or malposition	76
Bad obstetric history	141
Foetal distress	88
Obstructed labour	51
Elderly primigravida	39
Pre-eclampsia or hypertension	47
Eclampsia	16
Chronic nephritis	2
Diabetes mellitus	18
Prolapse of the cord	3
Others	15
Total:	2031

a critical analysis of the case records of the caesarean sections, it appeared to the authors that probably there was some scope of reducing the number of sections in indications such as disproportion, abnormal uterine action and postmaturity. However, this is not the subject of dis-

cussion of the present communication and it will not be elaborated further.

The maternal mortality in caesarean section in the above 2 teaching hospitals of Calcutta is presented in Table IV. In N.R.S. Hospital the results of caesarean section were critically discussed in some of the clinical meetings in 1976 and 1977. May be for this reason the mortality was somewhat lower in 1978, and the same trend is fortunately continuing in 1979.

Increased risk of caesarean section was also focussed by other workers from different centres in our country. Chakraverty and Dawn (1973) reported a mortality of 1.5 per cent from Calcutta. De Souza and Rebello (1967) reported a mortality of 2.5 per cent from Goa Medical College. Palanichamy (1976) from Tirunelveli reported a mortality of 2.22 per cent in 900 primary caesarean sections. In Vashishta et al series (1976) from Chandigarh the mortality was 0.97 per cent; but in 59 grande multipara the mortality was 5.1 per cent. Dutta (1979) reported a mortality of 2.7 per cent from a series collected from three district hospitals of West Bengal. Compared to these figures the maternal mortality from caesarean section in England and Wales in 1966 (Stallworthy and Bourne) was 2 per 1000.

Maternal mortality alone does not always give us a true picture of the risk of caesarean section. In our hospitals in the present day there is an increased in-

TABLE IV
Maternal Mortality in caesarean Section
(Per cent)

	1965	1970	1975	1976	1977	1978
M.C.H.	0.3	Nil	0.69	0.32	0.72	1.30
N.R.S.	—	—	0.76	1.55	1.40	0.67

cidence of sepsis of the abdominal wound or urinary tract; sometimes the infection also involves the uterus, parametrium or peritoneum. This increases hospital stay and the cost of treatment also gives rise to chronic gynaecological problems later on.

The deaths from caesarean section may also be considered from another aspect. Table V shows the number of maternal deaths from all causes in N.R.S. Hospital from 1975-1978.

TABLE V

Maternal deaths in N.R.S. medical College hospital (1975-78)

Total deliveries	19,642
Total maternal deaths	192
	(9.8/1000)
Maternal deaths excluding bleeding in early months	131
Maternal deaths in cases confined in N.R.S. Hospital	108
Deaths associated with caesarean section	22
	(20.04)
	Per cent

It is seen from the Table that of the 108 deaths out of 19,642 cases confined in the hospital itself, 22 deaths (20.04 per cent) were associated with caesarean section. In Medical College Hospital, Calcutta, during the years 1977 and 1978 caesarean section was associated with 17.24 per cent of the deaths in cases confined in the hospital.

The causes of maternal deaths in caesarean section performed in N.R.S. Hospital during 1975-1978 are presented in Table VI.

It is evident from the Table that prolonged or obstructed labour was the most common predisposing factor responsible for deaths after caesarean section due to haemorrhage, shock or peritonitis. These cases really belong to a very high-risk group with inadequate or no antenatal

TABLE VI
Causes of maternal deaths in caesarean section

Cause of death	No. of cases
1. Shock/Haemorrhage	10
Prolonged labour	= 4
Eclampsia	= 2
Accidental haemorrhage	= 2
Repeat section	= 1
Hypertension	= 1
2. Peritonitis	5
Prolonged/Obstructed labour	= 4
Repeat section	= 1
3. Pulmonary embolism	3
4. Anaesthetic complication	2
5. Renal failure	2

care. They are actually or potentially infected, often anaemic, dehydrated and ketotic, sometimes with a full stomach. There is very often a temptation to perform caesarean section in these cases because of the presence of foetal heart sounds. Gogoi (1971) and Dutta and Paul (1978) have shown a high maternal mortality of about 12.5 per cent associated with caesarean section in these cases in average hospital practice. One out of 3 of these babies die inspite of the abdominal delivery if the cases are not properly selected. Destructive operations in obstructed labour also carry some risk; but in our present day set up the risk is lower with a maternal mortality of 5-6 per cent (Dutta, 1978). We shall continue to get these types of cases in our country for a considerable time to come. It should be our endeavour to minimise the risk of these cases by restoring the fluid and electrolyte balance and arrange for assessment of the cases by an experienced obstetrician. Blood should be readily available and anaesthesia administered by a senior anaesthetist. Unfortunately, this is usually not the practice in the majority of our hospitals.

Of the cases already in hospital in labour, we should see that labour is not prolonged. One should also not wait indefinitely in cases of premature rupture of membranes admitted at 37th week or later. The cases should receive broad spectrum antibiotics with culture of high vaginal swab. Repeated vaginal examinations should be avoided.

From a critical analysis of the causes of maternal deaths following caesarean section it was thought by the authors that possible avoidable factors were present in 15 out of the 22 deaths. The avoidable factors in the opinion of the present authors were of the following nature. Lack of antenatal care was of course a very important factor; adequate antenatal and intranatal care would have eliminated obstructed labour completely. The other factors were:

(i) Non-availability of blood in adequate amount.

(ii) Prolonged wait in hospital in cases of premature rupture of membranes. Earlier section would have possibly avoided the deaths. One case died of peritonitis, the other of haemorrhage.

(iii) In the majority of caesarean sections performed in obstructed labour the decision and execution was undertaken by resident surgeons after telephonic discussion with seniors. Anaesthesia in this highrisk group was administered by juniors in about half the cases. Assessment and management by persons of greater skill and experience would have avoided some of the deaths.

(iv) Death after repeat section. Performance of the operations by an obstetrician of greater skill would have avoided the deaths. One of the cases died of haemorrhage and the other of peritonitis.

(v) The anaesthetic deaths could have been avoided by choosing vaginal delivery in 1 case and in the other by performing an elective and not an emergency caesarean section.

(vi) Deaths in accidental haemorrhage could possibly have been avoided by more free availability of blood for transfusion.

(vii) Caesarean section in eclampsia carries a very great risk. But in both the cases that died, the assessment and operation was performed by resident surgeons and anaesthesia administered by junior anaesthetists.

Summary

(1) Rising incidence of caesarean in 2 teaching hospitals of Calcutta has been discussed. Incidence at present varies between 10 and 13 per cent.

(2) Higher incidence is not always associated with a lower perinatal mortality.

(3) Maternal mortality from caesarean section all over the country varies between 0.6 to 2 per cent, which is very high.

(4) Twenty two maternal deaths in four years in 2031 caesarean sections (about one per cent) in the authors' own hospital have been critically analysed. Avoidable factors were present in 15 of these cases.

(5) In the light of their experience suggestions have been made for lowering the maternal mortality.

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