A CRITICAL EVALUATION OF MATERNAL DEATHS IN CAESAREAN SECTION MET IN RURAL OBSTETRIC PRACTICE

by

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The Scope of caesarean section has increased during the last 3 decades because of its increasing safety. Simultaneously it gives rise to complacency and there is a tendency to take the operation lightly. With the expansion of specialist obstetric service in rural areas, section is being done as and when indicated in District or even in Sub-Divisional Hospitals. Poor health of patients, adverse environment and inadequate ancillary facilities met in rural obstetric practice certainly affect the operative results adversely. With this intention a critical evaluation of the maternal deaths in caesarean section performed in the rural environment is contemplated.

Materials

The materials were from the personal series while the author was attached to Sadar Hospital, Jalpaiguri, Suri and Chinsurah, West Bengal and concerned the years 1965-1973. During this period there were 20 maternal deaths amongst 745° C.S., giving an incidence of 2.7%. The materials were not selective in the sense that not a single patient was transferred to other hospital nor was an indicated case left unoperated to die undelivered.

Analysis

In the series there were 11 moribund cases of placenta praevia with history of internal examination done outside in 9. Three such cases were included amongst 8 deaths in placenta proevia. Out of 5 deaths in obstructed labour, 4 were in group 2 (obstructed labour with pro-

TABLE I

Incidence of Maternal Deaths in Relation to Indications of C.S.

Indication	No.	No. of maternal deaths	%
Placenta praevia	175	8	4.6
Post C.S.	158	0	0
Foetal indication	154	1	0.6
Abnormal uterine action	93	1	1.1
Obstructed labour	58	5	8.6
C.P.D.	54	1	1.8
Sec. cervical dystocia	15	4	26.6
Others	38	0	0
	745	20	2.7

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nounced effect on mother but with a living foetus) and one in group 3 (obstructed labour with dead foetus). Out of 4 deaths in secondary cervical dystocia, 3 were associated with prolapse and 1 with carcinoma cervix.

The clinical condition at the time of section was severe anaemia with shock and bleeding in 8, features of exhaustion with or without evidences of sepsis in 10 and apparently normal in 2.

TABLE II

Maternal Deaths in Relation to Time of Section (Excluding A.P.H.)

	No.	Maternal deaths	%
Elective	169	0	0
Following trial	159	2	1.2
Emergency	242	10	4.1
	570	12	2.1

While there was no death in elective section, in emergency cases the mortality was 4.1%. In sections done in non-haemorrhagic group, the death rate was 2.1%.

With increasing duration of labour the risk was found increased from nil to as high as 6.8% where section was done beyond 48 hours of labour.

Shock, sepsis and embolism accounted for 75% of deaths. In the haemorrhaegic group out of 8, 7 died of shock but blood transfusion could not be arranged in any one. In non-haemorrhaegic group sepsis and embolism accounted for 50% of deaths. Endemic encephalitis took 2 deaths. There were 2 anaesthetic deaths; 1 following spinal anaesthesia by untrained personnel and the other was due to Mendelson's syndrome following gas

TABLE III

Maternal Deaths in Relation to Duration of Labour (Excluding A.P.H.)

Duration of labour (hours)	No.	Maternal death	%
0	169	0	0
up to 24	217	2	0.92
25-48	125	6	4.8
Above 48	59	4	6.8
Total	570	12	2.1

TABLE IV

Cause of Deaths According to Clinical Condition at the Time of Section

Cause of	No.	Clinical Condition		
		Haemorrhage and shock	Exhaustion (with or without sepsis)	Normal
Shock	8 (40%)	7	1	—
Sepsis	4 (20%)	—	4	—
Embolism	3 (15%)	1	2	—
Anaesthetics	2 (10%)	—	1	1
Encephalitis	2 (10%)	—	1	1
Tetanus	1 (5%)	—	1	—
Total	20	8	10	2

$+O_2$ anaesthesia by specialist anaesthetist.

TABLE V

Interval Between Operations and Deaths in Hours

	Upto 6	7-24	24-72	More than 72
No.	7	1	3	9

Seven out of 20 deaths were within 6 hours of operation and as many as 9 deaths occurred after 72 hours.

Foetal Salvage

There were 13 stillbirths and 2 neonatal deaths out of 20 maternal deaths.

Discussion and Comments

The incidence of maternal deaths in the present series (2.7%) is indeed high. A death rate of 2.2% has also been mentioned by the author (Dutta, D. C., 1972) in rural environment. The safety of C.S. is principally dependant among many, on the materials, availability of ancillary facilities and skill and perfectness of surgery. Well balanced combination of these factors makes the operation so safe in the developed countries as to reduce the death rate to 2/1000 operations or even to zero in one personal series. In the developing countries specially in rural environment the operative hazards are still prevalent because of adverse materials and ill equipped surroundings. It is rightly stated that if the quality of the patient is poor, intensive ancillary facilities are not sufficient to improve the result significantly. This is evident from high death rate even in the institutions of India as mentioned by Chakrabarty and Dawn (1973) viz. 1.5% and D'Souza and Rebello (1967) viz. 2.5%. Chogtu and Chakrabarty (1975) however reported no death in their series although as many as 120 out of 260 were handled outside by untrained midwives.

The risk of C.S. in placenta praevia is appalingly high. The incidence of 4.6% fatality in the present series can not be a true reflection of the hazards. Multiparity, pre-existing anaemia, repeated bouts of haemorrhage, internal examination done outside, late arrival to the hospital and inadequate ancillary facilities are some of the palpable factors responsible for increased fatality. Bhaskar Rao *et al* (1975) mentioned a death rate of 2.2% excluding 8 moribund patients of severe degree placenta praevia who were levelled as "died undelivered". There is hardly any scope of extending conservative treatment in placenta praevia and the sooner the interference is done, the better for the patient. Not infrequently critically ill patients are admitted and one should make a desperate attempt of section amidst the odds and in the bargain few lives may be saved.

The pitfalls in the assessment of obstructed labour cases and the risks involved in section in such cases has been discussed threadbare by the author in another communication (Datta and Pal, 1978). Frantic attempt to deliver a moribund baby by section ignoring the great risk to the mother is indeed a wild venture and an alternative safe vaginal delivery should be thought of before embarking on section.

Because of unforeseen technical difficulties and increased postoperative complications repeat sections are rightly placed in high risk group. There should be no complacency because of no death in this group in the series. It simply emphasises the need of competent senior personnel to undertake surgery in such cases. There were 5 deaths amongst 228 post caesarean sections in Eden Hospital

(Konar and Lahiri, 1975). Modus operendi of management of post C.S. cases in the rural environment has been critically analysed by the author in another communication (Datta, D. C. 1978).

Four deaths in secondary cervical dystocia is very alarming. While 1 death was due to encephalitis and 1 was due to tetanus, the remaining 2 developed peritonitis, 1 in prolapse and the other in carcinoma cervix. Premature or early rupture of the membranes resulting in intrauterine infection and hesitancy to do early section in the hope of dilatation of cervix in prolapse case are probably the factors which occasionally trap the obstetrician on wrong foot.

It is indeed tragic to encounter an occasional maternal death in C.S. done for foetal indication or for uterine inertia. One should not take a light decision of section for foetal interest and it seems a wiser procedure to employ if possible rupture of the membranes and/or syntocinon infusion in inertia as an alternative to section. As all these require adequate supervision, how far it is practicable is an open question. It is interesting not only in this series but also in others to find unexpected maternal deaths of inconsistant category like anaesthetic death in one and encephalitis in the other.

The indication per se can not give ordinarily a true reflection of the hazards of section unless correlated with its impact on the general condition of the patient at the time of operation. Too often operations are done in severe anaemia or in presence of exhaustion and sepsis as an emergency and these patients are still considered as high risk group even in advanced countries. In the series there were as many as 18 out of 20 deaths in this category.

The risk in elective section even in adverse circumstances can be reduced to nil, but sections done with increasing duration of labour or in emergency carry a disproportionately increasing death rate. Exhaustion which sets in much early in ill-nourished state is often ignored or under-estimated. It is wise procedure to infuse few bottles of fluid rapidly to correct keto-acidosis before proceeding for emergency section in labour and also to administer appropriate antibiotics. Sometimes a delay is inevitable even during conduction of labour in hospital because of lack of constant supervision and it seems a wiser procedure under the circumstances to take an early decision of section to get a better result. Of course this may lead to an increased incidence of section.

The pattern of deaths in C.S. is almost consistent with that met in developed countries. Liberal use of blood transfusion as and where available is unquestionably of immense value. As already pointed out patients with evidences of exhaustion and sepsis are still considered to be in high risk group. A safer method of delivery alternative to section should be thought of and if at all sections are to be done, rapid correction of keto-acidosis and administration of appropriate antibiotics should be a must. In parous women with grossly infected uterus, hysterectomy could be thought of. Role of competent anaesthetist and assistant should not be underestimated while tackling such gravely ill patients.

Strict vigilance in immediate post-operative period is of paramount importance as unlike non-obstetric patients, obstetric shock may develop abruptly without prior indication in the form of alteration of pulse or B.P. Measures are to

be taken well in advance in anticipation of shock.

Five foetal salvage out of 20 maternal clearly signifies the gravely ill condition of the patients. While in haemorrhaegic group one has to do section ignoring the foetal survival in the non-haemorrhagic group one should have a second thought before contemplating section.

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References

1. Bhaskar Rao, K. and Manorama, S.: J. Obstet. Gynaec. India 25: 642, 1975.
2. Chakravarty, D. K. and Dawn, C. S.: Cal. Med. Jour. 70: 160, 1973.
3. Chogtu, L. and Chakrabarty, V.: J. Obstet. Gynaec. India 25: 778, 1975.
4. D'Souza, S. and Rebello, F. M.: J. Obstet. Gynaec. India 17: 518, 1967.
5. Dutta, D. C. and Pal Sreemanta: J. Obst. Gynec. India, 28: 55, 1978.
6. Dutta, D. C.: J. Obst. Gynec. India. 28: 563, 1978.
7. Dutta, D. C.: Cal. Med. Jour. 69: 39, 1972.
8. Konar, M. and Lahiri. D. Aggregate Statistics and Annual report of the Department of Obstet. & Gynaec., Eden Hospital, Medical College, Calcutta, 1975.