CAESAREAN SECTION IN CLINICAL OBSTETRICS—A TEN YEAR REVIEW OF THE CHANGING INCIDENCE IN MANIPUR:

(A North Eastern State of India)

by

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Introduction

There has been an apparent reduction of perinatal mortality during the last decade with a rising incidence of caesarean deliveries in this State (Manipur) as reported earlier, (Jatiswar Singh *et al* 1980; 1981). Caesarean births in the State's only premier teaching hospital have also increased, almost doubled from 3.6 per cent during 1972 to 1978 to 6.9 per cent during 1979 to March 1982. Though the increased use of caesarean section seems to decrease perinatal mortality, there has been a gradual rise in the maternal morbidity. Maternal morbidity in this State appreciably affects State's economy as women contribute grossly to the family's income. Since the overall rate of caesarean section will continue to increase because the large number of primary caesarean sections would re-enter the pregnancy pool, this surgical procedure for delivery needed a critical review and a prospective study of all caesarean sections. The present study was undertaken to assess the factors responsible for the changing incidence, indications, risks and outcome of the procedure in the last 10 years.

Material and Methods

A prospective study of all the caesarean sections in this State from 1972 to 1978 and all those performed in the R.M.C. Hospital from 1979 to March, 1982 was carried out. They were properly evaluated clinically and relevant data also collected. There were 1108 caesarean sections including 93 repeat sections and, during the same period, the total number of deliveries were 23,647.

The indications, incidence, perinatal mortality, maternal mortality/morbidity, social customs and other variables have been carefully studied and analysed. For this purpose, since 1979, we had been using a specially prepared proforma. Another modified proforma was also used for all the cases of post caesarean pregnancies.

Due stress was given on the occupation, socio-economic and educational status, residence and quantum of manual work performed by the expectant mothers per day. All the cases were strictly individualised and data-scores were critically studied. Reports of the available literature have been carefully reviewed

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and compared with the findings of the present study. To identify any unconcieved avoidable factor, the individual indication had been further analysed. The type of caesarean section, either emergency or elective, time of hospitalisation, and variables of the operator were also scrutinised to find out any other contributing factor. We also tried to recognise and suggest the proper approach for checking any further increase of the incidence of primary caesarean sections.

Results

Incidence: We observe marked increase in the incidence of operative deliveries in the last decade without any appreciable reduction in the perinatal mortality except an apparent fall. Amirikia *et al* (1981) have claimed fall in the perinatal mortality following increasing incidence of caesarean births. The yearwise incidence of C.S. for this State is shown in Table I with a comparative report of other workers in Table II. The steep rise in the incidence during 1979 could not be explained with justification although it could partly be attributed to the sudden expansion of obstetric service with comparatively young and inexperienced consultants having independent working units in the college hospitals. Since 1980, the incidence has been a continuous and steady rise comparable to other workers. During 1972-78, there were 17,677 hospital deliveries with 636 C.S. (3.6 per cent) and more than 50 per cent of these were considered avoidable, but during 1979-82, there were 472 C.S. among the total deliveries of 5970 giving an incidence of 7.9 per cent. Spinal anaesthesia was used in more than 95 per cent of the cases and low transverse cervical operation was performed in more

TABLE I

Incidence of C.S. in the States Hospitals

Years	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982§
Total deliveries	1429	1591	2474	2487	3220	3161	3315	*1665	*1896	*1902	*507
No. of C.S.	44	62	60	98	87	118	185	*176	*125	*132	*39
Percentage	3	3.8	2.4	3.2	2.7	3.7	5.5	6.27	6.97	6.97	7.6

§ 1982—Upto March.

* R.M.C. Hospital only.

than 98 per cent. We use routinely oxytocic (Inj. Methergin) just after delivering the head and in 48 per cent of the cases I.V. syntocinon drip during and after the C.S.

TABLE II
Incidence of C.S. by Different Authors

Authors	Percentage of incidence
Chaubal *et al*, (1978)	3.29
Sharma *et al*, (1980)	4.85
Upadhyay (1953)	4.34
Jackson (1961)	7.5
Chakravarty (1971)	7.5
Singh *et al*, (1981)	10.57
Amirikia *et al*, (1981)	12.5
William J. OTT (1981)	

Indications: Most common indications as shown in Table III were cephalpelvic disproportion, antepartum haemorrhage, malpresentation, foetal distress and previous caesarean section. The same was our experience in the previous study (Singh *et al* 1981) and also by other workers (Ott., 1981). Cephalopelvic disproporation and failure to progress in labour accounted for 45 per cent of all primary caesarean section. The second most common primary indication was antepartum haemorrhage forming 14.89 per cent, whereas malpresentation constituted 12.91 per cent. We had 94 (8.48 per cent) repeat C.S. during 1972-79. This indicated a rapid rise in the incidence of repeat C.S. Rest of the indications except 4 contracted pelvis were non-recurrent and could have been avoided with provision for adequate medical facilities. We found educational programme of the prospective mothers to be relevant.

Outcome of the pregnancy: There

TABLE III
Indications

Sl. No.	Indications	No. of C.S.	Percentage
1.	Cephalopelvic disproportion	425	38.36
2.	A.P.H. (Placenta previa and accidental haemorrhage)	165	14.89
3.	Malpresentation	143	12.91
4.	Foetal distress	99	8.94
5.	Previous C.S. (Report C.S.)	94	8.48
6.	Obstructed labour	67	6.05
7.	Uterine rupture	31	2.79
8.	Cervical dystocia	27	2.44
9.	Cord prolapse	10	0.90
10.	Contracted pelvis	4	0.36
11.	Complicated twins	10	0.90
12.	Elderly Primi with severe PET/eclampsia	12	1.08
13.	Complicated breech	4	0.36
14.	Failed induction with leaking	5	0.45
15.	Post maturity in elderly primi	2	0.18
16.	Persistant occipito posterior with uterine inertia	5	0.45
17.	Deep transverse arrest	3	0.27
18.	Heart disease	1	0.09
19.	Compound presentation	1	0.09
	Total	1108	100.00

were 5 maternal deaths in this series (0.45 per cent incidence) and 1 maternal death among all non-caesarean hospital deliveries when all complicated cases were excluded. But the overall maternal mortality was 130 during the period. We found increasing incidence of maternal morbidity as confirmed from the postnatal interview of most of the post C.S. cases during postnatal check up. These cases consider themselves to be invalid and unfit for most of the domestic household works which their non-caesarean counterpart could perform. The average hospital stay for C.S. cases was 12 to 14 days and for the normal deliveries—2 to 3 days.

The perinatal mortality rate was 6.2 per cent as studied during 1974-78 and no appreciable decrease in the rate could be observed during the last few years although other workers have reported a decrease (Amirikia *et al* 1981) inspite of increasing incidence of caesarean deliveries. Prematurity, infection, asphyxia and congenital malformation were most common causes of foetal and neonatal loss. The perinatal mortality rate varies according to the maturity, indication and type of C.S. It is agreed by all that emergency C.S. carries a higher rate of foetal mortality than elective one. As shown in Table IV (1980-82) most of the C.S. (68.58 per cent) of this series were associated with complications and the operation had to be performed as an emergency procedure mostly by the junior consultants/registrars. Thus a higher foetal loss and maternal morbidity were expected.

Discussion

The incidence of operative delivery has reached an alarming peak and needs checking. Although the rate varies from institution to institution, all the workers agree on the increasing incidence. All the obstetricians should rethink to analyse and evaluate the indications in detail and try to review for the deceleration of the incidence. Projected incidence of repeat C.S. for all primary C.S. should also be undertaken on the basis of percentage incidence of repeat sections of all post C.S. pregnancies, in the next decade. We should anticipate the economic involvement and appraise concern of the health establishments of the State. The corrected perinatal mortality should be co-ordinated with the maternal morbidity and its long term effects. Avoidance and detection of unwarranted caesarean deliveries could reduce the incidence of C.S. by a significant percentage.

Retrospective analysis of 425 C.S. for cephalopelvic disproportion has revealed the influence of changing social customs. The traditions and domestic liabilities of the State were found to exert conducive and beneficial effects on the labour process. This includes paddy grinding, hand pounding of paddy in standing position, cooking, washing, cleansing and sweeping the floor in squatting position (Singh, *et al* 1980).

TABLE IV
Type of the C.S. During 1980-82

Years	1980	1981	1982	Total
Emergency	92	86	25	203
Percentage	73.6	65.15	64.1	68.58
Booked	33	46	14	93
Percentage	26.4	34.85	35.9	31.42

Misinterpretation of the entire situation and hasty decision could also be blamed in 35 cases. Ignorance on the part of the patients and lack of adequate medical facilities during pregnancy were found to be responsible for the operative delivery among most of the malpresentation group. In 99 cases of foetal distress, the decision for the operative procedure was on purely clinical assessment because of deceleration of the foetal heart rate. This itself lead to higher incidence of C.S. (Hughey, *et al* 1977). Foetal heart rate monitoring should thus be properly guided by foetal scalp blood pH measurement to define foetal distress on the parameters, (a) omnious heart rate pattern; (b) abnormal foetal scalp blood pH and (c) change in the amniotic fluid or, meconium index in the liquor. Ayromboi and Gerfinkel (1980) found a significant reduction in the C.S. incidence for foetal distress after following the FSBpH measurements as indication of foetal acid-base status without any change in Apgar-score. He suggested foetal heart rate monitoring as a screening tool only. The long term maternal morbidity of C.S. and high probability of repeat section in the subsequent pregnancies and also the economic deficit should be carefully reviewed when deciding this operative delivery for merely relative indications of non-recurrent cause.

Summary

A detailed analysis of 1108 caesarean sections performed in the hospitals of Manipur during 1972 and 1978 and at R.M.C. Hospital from 1979 to 1982 March, was undertaken. Cephalopelvic disproportion malpresentation, antepartum haemorrhage and foetal distress were most common primary indications. Analysis of the increasing trend of incidence seemed to indicate that the procedure had not been critically assessed and reviewed in most of the cases on individual merit. The appropriateness of this major surgery was prospectively reviewed.

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References

1. Ayromboi, J. and Gorfinkel, R.: Int. J. Gynec. Obstet. **17: 391, 1980.**
2. Bohdan, A. Z. and Evans, T. N.: Am-J. Obstet. Gynec. **140: 81, 1981.**
3. Chakraborty, R. K.: J. Obstet. Gynec. India, **21: 16, 1971.**
4. Chambal, S. D., Thakur, B. R., Vinikar, S. L. and Shah, S. H.: J. Obstet. Gynec. India. **28: 962, 1978.**
5. Hughey, M. J., LaPata, R. E., McElin, T. W. and Lussky, R.: J. Obstet. Gynec. **49: 513, 1977.**
6. Jackson, I. (1961): Quoted by reference 2.
7. Singh, J., Lakshmi Devi and Singh, I.: Int. J. Gynec. Obstet. **17: 388, 1980.**
8. Singh, J., Singh, M., Bidhumukhi Devi, Lakshmi Devi and Singh, I.; J. Obstet. Gynec. India. **31: 603, 1981.**
9. Sharma, U., Acharya, U., Saxena, S. and Mittal, G. C.: J. Obstet. Gynec. India. **30: 69, 1980.**
10. Upadhyaya, S. N. (1953, 1957): quoted by reference 2.
11. Ott, M. J.: Obstet. Gynec. **58: 691, 1981.**