INCREASING CAESAREAN SECTION AND PERINATAL OUTCOME

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ABSTRACT

An analysis of births by caesarean sections for ten years at a service hospital was carried out to identify the benefit in terms of reduction in perinatal mortality over the period without increase in maternal mortality and morbidity. An increase of 43.25 per cent in caesarean section rate was observed. Since 1986 there had been no significant change in the indications for caesarean sections or obstetrical care in terms of man and machine modernisation at this hospital. New born's care in this hospital is supervised by obstetrician and medical specialist. However, a definite reduction in perinatal mortality rate by 59.68 per cent was noted with no maternal mortality in caesarean cases. This retrospective study showed that the judicious increase of caesarean sections could improve perinatal outcome.

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KEYWORDS : Perinatal mortality in caesarean section; Perinatal outcome with increased caesarean section rate.

Introduction

For last 12-15 years caesarean sections (CS) rate has shown significant rise all over the world and so is the case with this country and Armed Forces hospitals too. With the modernisation of obstetrical care and mushrooming of private maternity homes, came the liberalised use of caesarean sections in the interest of neonatal outcome. This was shown by studies in India [1-3] and abroad [4-5]. Thus the need for retrospective study was felt to know whether increase in CS rate actually reduced the perinatal losses without increasing maternal mortality.

The perfect and safe neonatal outcome had been the aim of every obstetrician and a perinatal loss, specially due to CS, raises many eye brows. The society will not accept better neonatal outcome at the cost of maternal health.

The overall perinatal losses are less in Armed Forces hospitals in comparison to country's figure due to better MCH care during antenatal, intranatal, post-natal period, combined with better health awareness among troops and their families. It was observed from analysis of birth records that judicious use of caesarean section was capable of improving outcome without increasing maternal mortality.

Material and Methods

This retrospective study was carried out by analysing birth records, specially due to caesarean sections, maintained at a peripheral hospital from 01 Jan 1986 to 31 Dec 1995. The trends of caesarean sections were identified, analysed and studied in respect of perinatal mortality rate (PNMR) and maternal mortality and morbidity rate. The principle contributory factors to perinatal

losses were analysed to find out the validity of liberalised approach to abdominal delivery.

An attempt was made to find out whether there had been any change in indications for caesarean sections which indirectly reflects type of patients received at the hospital. All the perinatal deaths in CS, including still births and early neonatal death during mother's stay in hospital, were included in the study. For analysing and comparing incidence of caesarean section and perinatal outcome, the ten years period was divided into group of 5 years each, namely group I wef 01 Jan 1986 to 31 Dec 1990 and group II wef 01 Jan 1991 to 31 Dec 1995.

Results

Table 1 shows the incidence of caesarean sections in both the groups with incidence of perinatal mortality and maternal mortality. There were 1120 and 967 deliveries with 93 and 115 cases of caesarean sections in group I and II respectively. For group I caesarean rate was 8.30 per cent and 11.89 per cent for group II. There had been increase in caesarean rate by 43.25 per cent. The overall perinatal mortality rate (PNMR) was 2.94 per cent and 2.48 per cent for group I and II respectively. The overall perinatal mortality rate had insignificant decline of 15.68 per cent over 10 years. However, there had been significant decrease of 59.68 per cent in perinatal mortality among caesarean sections for the same period. There were no maternal mortalities in both the groups.

Trends of various indications for caesarean sections were analysed in Table 2. It was noted that in both the groups majority of caesarean sections (70.97%-76.53%) were done for cephalo-pelvic disproportion, previous caesarean section pregnancy, foetal distress, breech presentation, cervical dystocias including uterine inertia, pregnancy induced hypertension and obstructed labour.

However, serious emergencies threatening the life of mothers and fetuses like, eclampsia, transverse lie with or without hand prolapse, antepartum haemorrhage and cord prolapse were responsible for 12.91 per cent and 8.68 per cent in group I and group II respectively. Most infrequent indications had been post datism, premature rupture of membrane (PROM), bad obstetric history, failed inductions, compound presentations and intrauterine growth

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TABLE 1

Caesarean section and Perinatal and Maternal Mortality

Year group	No of total deliveries	No of overall perinatal mortality	No of caesarean section	Incidence of caesarean section %	Perinatal mortality in caesarean section	Maternal mortality rate in caesarean section
I (1986-90)	1120	33 2.94%	93	8.30	6 6.45%	Nil
II (1991-95)	967	24 2.48%	115	11.89	3 2.60%	Nil
Increased by	—	—	—	43.25%	—	Nil
Decreased by	—	15.64%	—	—	59.68%	Nil

TABLE 2

Trends of Indications for Caesarean Section

Indications Group	Group I number	Percentage	Group II number	Percentage
Cephalo-pelvic disproportion	20	21.50	28	24.34
Previous caesarean section	13	13.98	16	13.91
Foetal distress	9	9.68	11	9.58
Breech	12	12.90	8	6.96
Cervical factors and uterine inertia	1	1.08	9	7.82
Pregnancy induced hypertension	9	9.68	8	6.96
Obstructed labour	2	2.15	8	6.96
Eclampsia	4	4.30	1	0.86
Transverse lie	2	2.15	5	4.34
APH	5	5.38	4	3.48
Cord prolapse	1	1.08	—	—
Others*	15	16.12	17	14.75
Total	93	100.00	115	100.00

*Others include, Postdatism, PROM, Bad obst. history, Failed inductions, Compound presentation and IUGR.

retardation upto 15.12 per cent and 14.75 per cent in group I and group II respectively.

When perinatal losses were analysed as per indications of caesarean sections (Table 3), it was noted that severe pregnancy induced hypertension and previous caesarean sections were responsible for 66.66 per cent losses in group I and transverse lie with hand prolapse was responsible in 66.66 per cent cases of group II. One case each was lost due to accidental haemorrhage in both groups. There was only one perinatal death due to cord prolapse in group I. However, neonatal deaths were 83.33 per cent in group I and there were no neonatal deaths in IIInd group.

Discussion

Since last decade there had been increase in caesarean section rate all over the world. Countries like USA and UK have about 20 per cent of deliveries by caesarean section. Similarly, our country also registered increase CS rate for last 10-15 years and so is the case with Armed Forces Hospitals too. One of the reasons for such increase has been concern for better perinatal outcome without increase in dangers to mother which was possible due to improved and modernised anaesthesia, blood bank facility and newest spectrum of antibiotics.

TABLE 3

Perinatal Mortality and Indication of Caesarean Section

Indications	Group I			Group II		
	Number of still birth	Number of neonatal death	Number of perinatal mortality	Number of still birth	Number of neonatal death	Number of perinatal mortality
Previous caesarean section	—	1	1	—	—	—
Severe pregnancy induced hypertension	1	2	3	—	—	—
Cord prolapse	—	1	1	—	—	—
Accidental haemorrhage (APH)	—	1	1	1	—	1
Transverse lie	—	—	—	2	—	2
Total	1	5	6	3	—	3
Loss due to neonatal death (%)	—	83.33%	—	—	Nil	—

This peripheral hospital situated in isolated mountainous terrain had not shown rise in the incidence of any one or the other indications for CS in last 10 years, but there had been over all increase in caesarean section rate by 43.25 per cent, Desai et al noted increase by 169.46 per cent [1], which was higher than this study. During period of this study, CS rate had risen from 8.30 per cent to 11.89 per cent, but it was still lower than that of 12.53 per cent and 15.4 per cent as reported in literature [1,3]. There were no maternal deaths over the period of 10 years.

In study by Sudha et al it was shown that modernisation of obstetrical unit and its judicious use could reduce CS rate [6]. However, this fact could not be verified as this peripheral hospital does not have a modernised obstetrical unit.

The number of deliveries in this hospital were not large, as there were only 2087 deliveries in 10 years with 208 cases delivered by CS (Table 1), but even this modest number was sufficient to show the trends of incidence of CS and its effect on perinatal outcome.

The study by Bhide reported that increased frequency of CS was accompanied by absolute decrease in perinatal mortality [2]. However, this fact may not be true for those hospitals which continue to receive large number of unbooked cases and acute emergencies. In this study it was noted that perinatal mortality had fallen in last 5 years by 59.68 per cent which was a significant improvement. However, study by Desai et al [1] did not show any improvement in perinatal outcome over the period of 20 years (1974-93) though increase in CS rate was 169.46 per cent. The present PNM rate of 2.60 per cent among caesarean cases without any maternal mortality (Table 1), conformed to the figures 2.2 per cent and 6.07 per cent [7,8]. The fact must be remembered that perinatal outcome will improve with increase in booked cases and health awareness among patients with a strict accountability of medical and para-medical staff. If these things do not improve, just by increasing CS rate, one could not lower the PNM rate.

When the perinatal losses were analysed as per indications of caesarean sections, it was noted that Ist group had 83.33 per cent neonatal deaths and severe PIH alone being responsible for 50 per cent losses, the balance was shared by APH, previous CS and cord prolapse equally i.e. 16.66 per cent each but in IInd group i.e. last 5 years, it had been transverse lie with hand prolapse and more than 24 hours in labour in two cases (66.66%) and APH was responsible in one case (33.34%) but there had been no neonatal death after

CS in this period, which is a very good achievement (Table 3). The study by Singhal et al [3] showed APH (26%) CPD (22%) and transverse lie (20%) caused maximum perinatal fatalities with 27 per cent neonatal deaths by APH, where maternal concern overrules foetal outcome, but losses due to severe PIH, CPD, previous CS and majority of transverse lie cases were preventable and must be salvaged by a concerted efforts and timely intervention. Alam et al reported a six fold increase in CS rate over 20 years (1974-93) with absolute decrease in perinatal mortality from 118 to 15/1000 in caesarean cases [9]. This conforms with figures and trend of present study.

At this service hospital, nothing changed over the period (1986-95) of 10 years in terms of machine and personnel and types of patients received, yet perinatal salvage improved significantly due to judicious use of CS. But at no stage, this improvement should lead to complacency and there were still problem areas to be solved to achieve zero PNMR by making patients more responsive and aware to their health and its problem. Thanks to consumer protection act, now in vogue in this country, the need for better accountability of hospitals and its staff has been felt, which will certainly reduce the PNM rate of private and Govt institutions, leading to our country's PNMR at par with advanced countries, if not better than them. It should be remembered by all in obstetrical discipline that "a motherhood is a pleasant experience but it all matters how it is achieved".

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