

MORTALITY IN CAESAREAN SECTION

by

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SUMMARY

Maternal mortality following caesarean section for 10 years—1971 to 1980 at the K.E.M. Hospital, Bombay has been studied. Incidence of caesarean section has increased from 1.95% in 1971 to 5.05% in 1980. Mortality from Caesarean sections has declined from 7.44% in 1971 to 1.73% in 1980.

Introduction

This is a retrospective study of maternal mortality following Caesarean Section between 1971 and 1980 at K.E.M. Hospital, Bombay.

The number and rate of caesarean deliveries has increased dramatically in recent years. Caesarean section is being done more liberally than before. The indications for this operation have become lax. Advanced techniques of obstetric care have made it possible to detect antepartum and intrapartum complications and diagnose foetal distress before or early in labour and thereby increased the chances of doing a caesarean section at an early stage.

Breech presentation, elderly primiparas, medical disorders and previous scar on the uterus are reasons enough for a caesarean section in the modern era.

In the Western countries increased likelihood of malpractice suits may dispose the obstetrician towards caesarean section.

Advances in medical care such as improved anaesthetic techniques, blood products and transfusions, wider choice of antibiotics have made caesarean section safer than before. This has also made it easier to take a decision regarding caesarean section. Better Medical control of maternal illness as diabetes, hypertension and heart disease all have made maternal mortality from caesarean childbirth a rare occurrence in the West.

The safer the procedure became the easier it became to make a decision to perform the operation. Thus caesarean delivery is sought as a short cut for all problems relating to childbirth which is not proceeding satisfactorily. Though morbidity and mortality associated with caesarean sections is on the decline, one cannot treat this procedure lightly. However

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small the morbidity and mortality associated with a surgical procedure remains and a primary caesarean section often leads to a repeat caesarean section in the modern era. Mortality from caesarean section has declined from 7.44% in 1971 to 1.73% in 1980.

In India, where maternal mortality is yet high, where we have not been able to gain an upper hand over sepsis all obstetricians should be cautioned against liberal use of caesarean section for the flimsiest of reasons. The aim of this 10 year review is to project the mortality due to caesarean section in one of the leading teaching institutions in Bombay and compare it with the data available from the West.

Material and Methods

All cases delivered at K.E.M. Hospital, Bombay, over a period of 10 years from 1971 to 1980 were reviewed. The mortality occurring in patients who had undergone caesarean sections was noted and the cases analysed.

Table I shows the incidence of caesarean section at the K.E.M. Hospital, Bombay, has increased from 1.97% in 1971 to 5.05% in 1980. Better diagnostic aids, improved monitoring during labour as well

as the small family norm have contributed to this.

TABLE I
Incidence of Caesarean Section

Year	Incidence %	Year	Incidence %
1971	1.966	1976	5.139
1972	1.998	1977	3.597
1973	2.225	1978	4.089
1974	2.832	1979	2.577
1975	3.092	1980	5.049

Table II depicts only the major indications. Generally speaking the leading indication for caesarean sections are the same in India as in Western Countries.

Mortality in caesarean section has declined from 7.44% in 1971 to 1.73% in 1980. Mean of the first 5 years is 4.28% while that of the next 5 years is 1.28%.

As seen in Table III, the mortality following caesarean section has dropped considerably.

There were a total number of 37 deaths in 10 years, 4 deaths out of 13 due to haemorrhage were associated with disseminated intravascular coagulation, 6 deaths

TABLE II
Indications for Caesarean Section

Indications	Years		
	1971 %	1975 %	1980 %
1. Cephalo-pelvic disproportion	38.30	17.62	23.81
2. Repeat caesarean section	25.53	25.39	19.05
3. Foetal distress	21.28	14.51	14.29
4. High-risk pregnancy	4.26	8.29	8.23
5. Breech presentation	2.13	3.11	7.40

TABLE III
Caesarean Section—Maternal Mortality

Year	Total confinements	Total caesarean sections	Post caesarean maternal deaths	
			Total	Percentage
1971	4781	94	7	7.44
1972	4983	96	4	4.16
1973	4943	110	5	4.54
1974	6497	184	6	3.26
1975	6403	193	5	2.52
1976	4475	230	1	0.43
1977	4587	165	2	1.21
1978	4499	184	1	0.54
1979	4500	116	2	1.72
1980	4575	231	4	1.73

TABLE IV
Causes of Post-Caesarean Deaths

Cause	Total number in 10 years
1. Haemorrhage	13
2. Sepsis	10
3. Embolism	7
4. Anaesthesia	1
5. Intestinal fistula	1
6. Medical disorders	5

evidence of pulmonary embolism was obtained. The diagnosis was based on clinical signs and symptoms.

Anesthesia contributes to some extent, in cases of operative deaths. One patient in this 10 years series succumbed when spinal anaesthesia was administered. She

were due to antepartum haemorrhage, while remaining cases had primary atonic haemorrhage. Of the 10 deaths due to sepsis, 7 were patients transferred from peripheral hospitals with prolonged labour with suspected cephalo pelvic disproportion, all had membranes ruptured for long duration. During the post-operative investigations, 2 patients revealed *E. Coli* infection, other patients had mainly staphylococci infection.

All the 7 patients of embolism—had uneventful caesarean sections—2 developed fatal embolic attack on the seventh post-operative day, while 5 patients suffered embolism between 48 to 72 hours after operative delivery. Post-mortem examination was done in all these cases but no

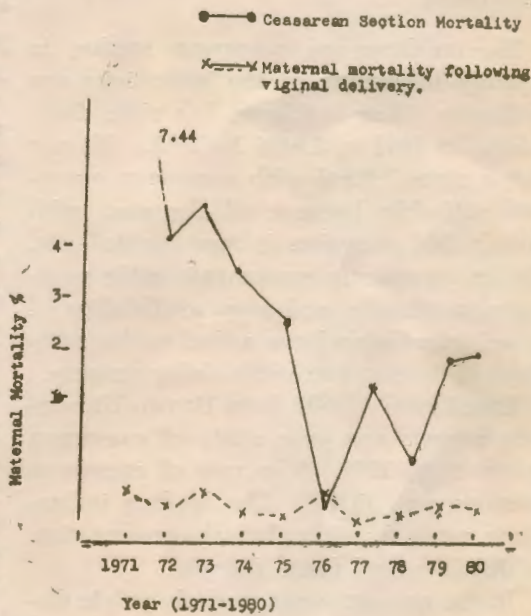


Fig. 1

developed severe hypotension, cardiac arrest and died in spite of all resuscitative measures. Post-mortem findings were negative. One patient with 2 previous caesarean sections underwent an uneventful 3rd caesarean section. On the third post operative day foul smelling yellowish mucopurulent discharge was noticed from the abdominal wound. Culture reports revealed *E. Coli*. Patient expired, in spite of all adequate surgical care. Post mortem showed, multiple intestinal fistulae with adhesions to the uterus and other pelvic organs. Histopathology revealed evidence of tuberculosis. Five cases were associated with medical disorders such as rheumatic carditis, diabetes, hypertension, renal failure and anaemia. When pregnancy is associated with a medical disorder, prolonged labour, infection and anesthesia, tilts the balance against the patient. Post-mortem examination in 4 of these patients was inconclusive.

Discussion

The incidence of caesarean section is steadily increasing as the indications are widening. The incidence has risen from 1.96% in 1971 to 5.04% in 1980. We are being more liberal with caesarean operation probably because of the ease with which this operation is now carried out. Better anaesthetic equipments, wide spectrum, antibiotics and easy availability of blood transfusion have added to the comforts of the surgeon while doing surgery.

Evard *et al* (1980) from Brown University reports one year study of caesarean sections in 1977. The rate of caesarean sections was 18.5%. The leading indications were dystocia, breech presentation, malposition and foetal distress.

In the present series, cephalo pelvic disproportion, foetal distress and repeat caesarean sections have maintained the

top three places in the list, though all of them have undergone a decline. Fall in the number of patients transferred from the peripheral hospitals and better intrapartum monitoring have contributed to this decline.

On the other hand, caesarean sections for high-risk pregnancy have increased two fold, while those for breech presentation have increased three times over the 1971 figures. Early diagnosis and management of obstetric complications and medical disorders associated with pregnancy have played an important role in high-risk pregnant group. As far as breech presentation is concerned, high perinatal mortality associated with breech delivered vaginally and small family norm have influenced the caesarean section rate.

Maternal deaths associated with caesarean sections though on the decline are as yet sufficiently high to elicit concern. In the present series, the incidence of deaths dropped from 7.44% (700/10,000) in the year 1971 to 1.73% (100/10,000) in the year 1980, which is still very high.

Parikh (1969) from Nowrosjee Wadia Hospital, Bombay has presented a 10 years data (1958-1968) where the mean mortality rate due to caesarean section was 1.9%. Mehtaji (1969) from Cama Hospital, Bombay, has shown the incidence of maternal mortality to be 5.1% in 1930 which decreased to 0.87% in 1960.

Sepsis followed closely by hemorrhage were the leading causes of death in all published series. In the series by Evvard *et al* (1980) the maternal mortality was 10.8/10,000 (.10%) the major causes for mortality were infection and embolism in the post operative period.

Williams Obstetrics (1983) states that at Parkland Memorial Hospital from 1974 to 1978; 10,501 caesarean sections were

performed with very fine facilities, giving an incidence of 0.1% deaths, while at the Boston Hospital for women, between 1968-1979, 10,231 caesarean sections were performed without a single mortality. The caesarean rate was 22%.

Rubin *et al* (1981) from Georgia have described caesarean maternal mortality rate of 105.3/1,00,000. Preventive measures aimed at reducing pulmonary embolism and cardiopulmonary arrest during general anaesthesia may reduce the death rate further. They found the mortality following caesarean section ten times greater than that following vaginal deliveries. In the present series, the mortality following caesarean operation, was 12 times greater than mortality following vaginal deliveries during the period from 1971 to 1975, while it was four times more in operative deliveries as compared to vaginal deliveries during the period from 1976-1980.

The Western Literature gives a very promising picture regarding the safety of a caesarean section. If Boston Hospital data is taken into account then an abdominal delivery is as safe as a vaginal one, the question of choice is the route preferred by the obstetrician and his patient.

In this series, the caesarean mortality being as yet high (1.73% in 1980), one

can not take this operation lightly and care must be taken to review each case before resorting to caesarean section. With good prenatal care, better knowledge of medical disorders including services of a physician and well supervised intranatal care, with the help of a good anaesthesiologist, Maternal Mortality could be reduced to a minimum. Surgery is now safe for the patient, let us make the patient safe for surgery.

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