

Maternal Complications in Caesarean Section Deliveries

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Summary : A prospective study was made on 210 consecutive patients delivered by caesarean section from September 1993 to May 1994. 15.7% of the patients had an elective and 84.2% an emergency caesarean section. The commonest indication for caesarean section was foetal distress (35.2%) followed by malpresentations and malpositions (28.5%). Antepartum haemorrhage and multiple pregnancy were significant risk factors for intra-operative and postoperative haemorrhage. The commonest intraoperative complication was haemorrhage observed in 10% of the patients. Injury to bladder occurred in 0.9% of cases. The postoperative complication rate was 24.3%. 18.5% of the patients had febrile morbidity and 10.9% had non-febrile morbidity. The significant risk factors for post operative complications were labour pains prior to caesarean section, vaginal examinations prior to caesarean section, rupture of membranes, anaemia, prolonged labour and/or obstructed labour, and obesity.

Introduction

Until late in the last century, the extreme risk to maternal life because of caesarean section made it the delivery method of last resort. Creighton et al (1991) observed that the caesarean section rate continues to rise and has almost doubled from 5.2% in 1970-1972 to 10.1% in 1982-84. In the affluent countries, the operations are mainly confined to elective caesarean section or following supervised labour. But in the developing world, many caesarean sections have to be done in emergency, or unbooked referred patients who are too often rushed to the hospital in a bad shape. Even the three vital prerequisites-anaesthetist, blood transfusions and appropriate antibiotics may not be available and the dearth of any one or two is the rule rather than the exception. Thus, the operation which is considered very much safe in present day obstetrics should be viewed with concern considering the case profiles and the environment.

Material and Methods

A prospective study was made on all the consecutive

patients delivered by caesarean section in the Department of Obstetrics and Gynaecology, Kamla Nehru Hospital, Shimla from 1st Sept., 1993 to 31st May, 1994. The type of admission was noted as "booked" and "emergency". A detailed history of the case was taken and examination performed.

The onset of labour whether spontaneous or induced was noted and the progress of labour was charted on a partogram. The preoperative risk factors for intraoperative or postpartum haemorrhage were recorded. Additional risk factors which contribute to postoperative morbidity were also noted.

Caesarean section, whether primary or repeat, were noted and divided into elective and emergency caesarean section. Type of caesarean section whether lower segment, classical or caesarean hysterectomy was noted and the indications for operation were recorded. Estimated blood loss and the time taken for operation were noted. The details of intraoperative and postoperative complications were recorded. Perinatal outcome was noted during the period of stay of the mother in the hospital.

Laboratory investigations were done for haemoglobin, blood group and Rh-factor, serological test for syphilis and urine examination. The post operative period of the mother and the treatment given were noted. The maternal mortality, if any and its cause were recorded.

Observations

During the period of study, there were 210 consecutive caesarean sections out of 1418 deliveries, giving an incidence of 14.8%, more than two fold increase from 6.8% in 1982. 66.2% were "booked" and 33.3% were "emergency" admissions. The mean age of the patients who had caesarean section delivery was 25.4 ± 4.49 years. 50.9% of the patients were primiparous and 49.1% were multiparas.

It was observed that 15.7% of the patients had an elective and 84.2% had an emergency caesarean section. 76.1% were primary and 23.8% were repeat sections. All were lower segment caesarean sections. The com-

monest indication for caesarean section was foetal distress (35.2%) followed by malpresentations (28.5%), foetopelvic disproportion (23.8%), failure to progress (23.3%) and repeat caesarean section (20.4%).

The preoperative risk factors for intraoperative and primary postpartum haemorrhage are shown in Table - 1. It was noted that antepartum haemorrhage and multiple pregnancy were significant risk factors for intraoperative and post partum haemorrhage. Anaemia, repeat caesarean section, prolonged labour and grand multipara were not found to increase the risk significantly.

Intraoperative complications occurred in 10.9% of the cases out of which intraoperative haemorrhage accounted for 10% and injury to bladder occurred in 0.9% of the patients and no patients had any complications due to anaesthesia. (Table - II).

Table III shows the pre operative risk factors for post operative complications. The significant risk factor for

Table - I
Pre-Operative Risk Factors for Intra Operative Haemorrhage and Primary Postpartum Haemorrhage.
N=210

S.No. Preoperative Risk Factors	Risk Factors Present			Risk Factors Not present			P Value	Significance
	No.	Complications	%	No.	Complications	%		
1. Anaemia	132	15	11.3	78	6	7.6	>0.05	NS
2. Repeat Caesarean	50	5	10.0	160	16	10.0	>0.05	NS
3. Prolonged Labour	32	6	18.7	178	15	8.4	>0.05	NS
4. Antepartum Haemorrhage	26	7	26.9	184	14	7.6	<0.05	NS
5. Grand Multipara	6	1	16.6	204	20	9.8	>0.05	NS
6. Multiple Pregnancy	2	2	100.0	208	19	9.1	<0.01	HS
7. History of Third Stage Complications	-	-	-	-	-	-	-	-
8. Hydramnios	-	-	-	-	-	-	-	-

Table - II
Intraoperative Complications
N - 210

S. No.	Intraoperative Complications	No. of Cases	%age
1.	Haemorrhage	21	10.0
	a. Uterine atony	5	2.4
	b. Extension of uterine incision	6	2.9
	c. Injury to blood vessels	4	1.9
	d. Laceration of cervix and vagina	4	1.9
	e. Broad ligament haematoma	2	0.9
	f. Difficulty in removing the placenta	0	0.0
	g. Difficulty in haemostasis of uterine incision	0	0.0
2.	Injury to Viscera	2	0.9
	a. Bladder	2	0.9
	b. Ureter	0	0.0
	c. Bowel	0	0.0
3.	Anaesthetic Complications	0	0.0

post operative complications were labour pains prior to caesarean section, vaginal examinations prior to caesarean section, rupture of membranes, anaemia, prolonged labour and/or obstructed labour, and obesity. Patients with duration of labour > 24 hours had 3.5 times more risk of developing post operative complications than patients with labour pains of <12 hrs. Also, patients with duration of rupture of membranes of >24 hrs had nearly four times more risk of developing post operative complications than patients with rupture of membranes of <12 hours. Patients with 7 or more pelvic examinations had more than four times the risk of developing post operative complications than those with 3 or less pelvic examinations.

The post operative complication rate was 29.3%, 18.5% of the patients had febrile morbidity and 10.9% had non-

febrile morbidity (Table - IV). There was no maternal death following caesarean section.

In the present study, the incidence of caesarean section was found to be 14.8%, nearly two fold increase from 6.8% in 1982. Most of the workers have also found an increasing trend for caesarean sections. Ratnam & Arul Kumaran (1992) reported an increased rate from 3% in 1970 to 16.2% in 1983 in Women's Hospital, Madras. Bhide (1992) gave an increasing incidence of caesarean section from 6.5% in 1981-82 to 9.04% in 1989-90.

Antepartum haemorrhage was a significant risk factor for intraoperative haemorrhage. Similar observations were made by Jones (1976) and Evrard and Gold (1977). Another significant risk factor for intraoperative haemorrhage was multiple pregnancy.

Intraoperative haemorrhage was the commonest complication observed during operation, occurring in 10% of the patients. Almost similar incidence of 9.5% was observed by Nielson and Hokegard (1984). Injury to bladder occurred in 0.9% of the patients in the present study. A low incidence of 0.2%, 0.2% & 0.13% were observed by Jones (1976), Neilson & Hokegard (1984) and Chakraborti and Dawn (1985) respectively.

In patients with duration of labour pains less than 24 hrs, the incidence of postoperative complications was 52.4%. A significant rise to 64.7% was seen when labour lasted for more than 24 hrs ($P < 0.01$). Gibbs et al (1976) observed that the incidence of standard febrile morbidity was 17% and 20% in the no labour group & labour group respectively. Nielson and Hokegard (1984) observed a significant rise of complication rate from 21.0% to 37.1% in patients when labour lasted more than 16 hrs when compared to that in patients where labour was of <16 hrs duration.

The incidence of postoperative complications was 19.6%

Table - III
Pre-Operative Risk Factors for Postoperative Complications
N-210

S. No.	Preoperative Risk Factor	Risk Factor Present			Risk Factors not present			P Value	Significance
		No.	Compli- cation	%age	No.	Compli- cation	%age		
1.	Labour prior to caesarean section	177	49	27.7	33	2	6.0	<0.05	S
2.	Vaginal examination prior to operation	177	49	27.7	33	2	6.0	<0.05	S
3.	Rupture of membranes prior to operation	151	42	27.8	59	9	15.2	<0.011	HS
4.	Anaemia	132	50	37.8	78	1	1.2	<0.01	HS
5.	Emergency admission	70	19	27.1	140	32	22.8	>0.05	NS
6.	Repeat caesarean section	50	10	20.0	160	41	25.4	>0.05	NS
7.	Prolonged labour and/or obstructed labour	32	21	66.3	178	28	15.7	<0.01	HS
8.	Antepartum haemorrhage	26	10	38.4	184	41	22.2	>0.05	NS
9.	Obesity	13	8	53.3	197	43	21.7	<0.01	HS
10.	Grand multiparity	6	2	33.3	2.4	49	24.0	>0.05	NS
11.	Done in second stage of labour	-	-	-	-	-	-	-	-
12.	Prior attempted vaginal delivery	-	-	-	-	-	-	-	-

in patients with <3 pelvic examinations, 33.3% in patients with 4 to 6 and a highly significant increase to 85.7% in patients with 7 to 9 vaginal examinations. Similar results were observed by Hawrylyshyn et al (1981) who reported that the risk of post operative complications was 4.5 times more in patients with <7 pelvic examination as compared to that in patients with <3 pelvic examinations.

In the present study, the risk of post operative complica-

tions was 4 times higher in patients with rupture of membranes of more than 48 hrs. duration as compared to that in patients with rupture of membranes of <24 hrs of duration. Similarly, Rehu and Nilsson (1980) observed that more than 12 hours of rupture of membranes was associated with significant increase in the rate of endometritis to 16.6% while less than 12 hrs of rupture of membranes was associated with 8.9% incidence of endometritis.

Table - IV
Post Operative Complications
N-210

S. No.	Post Operative Complications	No. of Cases	%age
1.	Febrile Morbidity	39	18.5
	a. Urinary Tract Infection	20	9.5
	b. Endometritis	15	7.1
	c. Thrombophlebitis	3	1.4
	d. Chest Infection	1	0.4
2.	Non-Febrile Morbidity	23	10.9
	a. Haemorrhage	9	4.2
	i. Reactionary	6	2.8
	ii. Secondary	3	1.4
	b. Paralytic Ileus	2	0.8
	c. Wound Complications	10	4.0
	i. Sanguinous or Frank pus	3	1.4
	ii. Haematoma	3	1.4
	iii. Dehiscence	3	1.4
	iv. Burst abdomen	1	0.4
	d. Puerperal Psychosis	2	0.8

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