



## Analysis of Postoperative Morbidity Following Caesarean Sections in a Tertiary Care Centre

Authors

**Dr Deepa M<sup>1</sup>, Dr Sapna Devi. D P<sup>2</sup>, Dr Y Sujatha<sup>3</sup>**

<sup>1</sup>Assistant Prof., Dept. of Obstetrics and Gynaecology, SAT Hospital, Govt. Medical College, Trivandrum  
Contact No. 9495011099 Email. [deepaajith35@gmail.com](mailto:deepaajith35@gmail.com)

<sup>2</sup>Assistant Prof, Dept. of Obstetrics and Gynaecology, SAT Hospital, Govt. Medical College, Trivandrum  
Contact No. 9895053736, Email: [drsapnadevi@gmail.com](mailto:drsapnadevi@gmail.com)

<sup>3</sup>Professor, Dept. of Obstetrics and Gynaecology, SAT Hospital, Govt. Medical College, Trivandrum  
Contact No: 9497850444, Email: [drysuja@gmail.com](mailto:drysuja@gmail.com)

### Abstract

**Background:** *Caesarean section is one of the most commonly performed surgeries. Before the availability of wide spectrum antibiotics, blood transfusion facilities and anesthetic techniques, it was done only to save the life of the mother and was met with a mortality of 50-75%. Now with the advent of antibiotics, blood transfusion and modern anesthetic technique, morbidity has been considerably reduced. In spite of this, delivery by Caesarean section is fraught with high incidence of maternal morbidity. Thus in order to have minimum mortality and morbidity following Caesarean sections, the obstetrician should have a knowledge about the common morbidity following the procedure.*

### Objectives of the study

1. To identify the common postoperative morbidity following Caesarean sections.
2. To compare the morbidity following elective and emergency Caesarean sections.

### Study Setting and Design

*The design adopted is cross sectional comparative study. 200 Caesarean section cases done in Sree Avittam Thirunal Hospital, Thiruvananthapuram were allocated and grouped into two of which 100 patients underwent elective surgery and 100 patients underwent emergency Caesarean section.*

*Results: Data collected was analyzed based on the objective using frequency, percent and Chi-square tests.*

**Conclusion:** *In the present study, the most frequent postoperative complications are urinary retention, febrile morbidity, postpartum hemorrhage and gaseous abdominal distension.*

*The postoperative complications are more in emergency group (58%) as against 23% in the elective group. Most frequent complications are fever (28% in emergency and 10% in the elective group), urinary retention (12% in emergency and 5% in elective group) and postpartum hemorrhage (6% in emergency and 4% in elective group). Infectious morbidity following emergency Caesarean section is 32% and elective Caesarean section is 15%.*

*It is seen that in spite of routine use of antibiotics, good anesthetic and operative techniques and blood bank facilities, Caesarean sections are still associated with considerable postoperative morbidity. Also the postoperative morbidity is more following emergency caesareans compared to elective cases.*

**Keywords-** *Caesarean section, postoperative, morbidity.*

**Introduction**

The evolution of Caesarean section during the twentieth century as a relatively safe procedure, largely because of improved anesthetic techniques and antiseptic procedures have revolutionized obstetric practice<sup>(1)</sup>. Today Caesarean section is performed in 15 to 25% of all deliveries. The rate of Caesarean section has increased in the most recent years in all countries. Elective Caesarean section performed on a patient free of obstetric complications or general diseases, is a much safer procedure than emergency Caesarean sections used in the treatment of complications of labour or pregnancy. The incidence of complications in women delivered by emergency Caesarean section after labour had failed, is more compared to that performed as an elective procedure .<sup>(2)</sup>

**Materials and Methods**

This is a cross sectional comparative study. Sample in this study consists of 200 Caesarean section cases, of which 100 were elective cases and 100 emergency cases, done during the same period. For every elective Caesarean section done during the period, the next emergency section was selected for comparison. Criteria for dividing into two groups were patients undergoing elective Caesarean section and those undergoing emergency Caesarean section.

**Results**

In the present study, it is found that the most frequent postoperative complications were urinary retention, febrile morbidity, postpartum hemorrhage and gaseous abdominal distension. The most important postoperative morbidity was infectious morbidity and this was higher in emergency Caesarean section (32%) compared to elective group. The important postoperative infections were wound infection (elective 4%, emergency 13%) respiratory infection (elective 7%, emergency 10%) and urinary tract infection (elective 7%, emergency 8%) .Postoperative complications were more in emergency group (58%) compared to 23% in elective Caesareans. The emergency group has more intraoperative

complications like extension of incision but adhesions were present more in elective group.(R) It is clear that extension of incision and scar dehiscence was seen in emergency group on 5% and 1% respectively. All the other complication were equally distributed.

**Table 1:** Distribution according to operative complications

Intra operative	Elective		Emergency		Z	P
	No	%	No	%		
Adhesions	8	8	6	6	0.5	>0.05
Pulled up bladder	13	13	14	14	0.3	>0.05
Excess bleeding	8	8	10	10	0.5	>0.05
Thinned out lower segment	2	2	6	6	1.5	>0.05
Extension of incision	-	-	5	5	-	-
Scar dehiscence	-	-	1	1		
Fibroids	4	4	2	2	0.8	>0.05

It is clear that extension of incision and scar dehiscence was seen in emergency group only 5% and 1% respectively. All the other complications were equally distributed.

**Table 2:** Distribution according to post operative complications

Post-operative	Elective		Emergency		Z	P
	No	%	No	%		
Urinary retention	5	5	12	12	2	P<0.05
Fever	10	10	28	28	3.5	P < 0.01
Abdominal distension	4	4	12	12	0.74	P>0.5
Postpartum hemorrhage	4	4	6	6	0.64	P > 0.05

Urinary retention, febrile morbidity, abdominal distension, Post-partum Haemorrhage all were more in emergency group. But incidence of febrile morbidity was very high (28%) in emergency group and this was statistically significant.

**Table 3:** Distribution based on post-operative infections

Post infection	Elective	Emergency
Present	15%	32%
Absent	85 %	68%
Total	100	100

Chi square = 14.6, P < 0.01 significant

This clearly shows that post-operative infectious morbidity is high in emergency cases and the difference is statistically significant.

**Table 4 :** Type of post-operative infections

Post-operative	Elective		Emergency		Z	P
	No	%	No	%		
Urinary tract infection	4	4	8	8	1.2	> 0.05
Respiratory infection	7	7	10	10	1.8	>0.05
Wound infection	4	4	13	13	2	<0.05
Others abscess in gluteal region			1	1		

Though all the infections occurring post operatively were high in the emergency group, the incidence of wound infection was statistically significant.

**Table 5 :** Distribution according to day of suture removal

Day of suture removal	Elective		Emergency	
	No	%	No	%
≤ 7 days	93	93	87	87
>7 days	7	7	13	13

Chi square = 2 .d.f = 1 P > 0.05 Not significant.

The day of suture removal did not have any significant difference between the 2 groups.

**Table 6 :** Distribution according to duration of hospital stay

Mean hospital stay	Elective		Emergency	
	No	%	No	%
≤ 7 days	92	92	82	82
>7 days	8	8	18	18

Chi square = 2.3, d.f = 1 P < 0.05 Significant

It is clear that hospital stay was prolonged more in emergency cases than elective cases. Most of the patients who were discharged last was suffering wound infections.

**Discussion**

Puerperal infection remains a significant cause of maternal morbidity both in the United States and

in developing countries. The United States has a pregnancy related deaths per 100,000 live births, with approximately 10% resulting from puerperal infection <sup>(3,4)</sup>. Caesarean section is the most important risk factor for puerperal infection<sup>(5)</sup>.

In the present study it is found that postoperative complications are more in emergency Caesarean group (58%) as against 23% in elective group. Of which infectious morbidity following emergency section is 32% and following elective section is 15%.

Most frequent complications are fever ( 28 % in emergency and 10% in elective group), urinary retention (12% and 5%) and postpartum hemorrhage ( 6% and 4%).

Regarding intraoperative complications, adhesions were present more in elective cases, because majority are previous caesarean cases. Pulled up bladder was present almost equally in both groups. Excessive bleeding was there more in emergency cases may be due to extension of incision that occurred in 5% cases .This is in accordance with the study of emergency obstetric hysterectomy which showed uncontrollable bleeding or rupture of the uterus were the most common indications and increased incidence was associated with previous Caesarean section. The lower segment was thinned out in 6% of emergency cases compared to 2% of elective cases indicating that previous caesarean cases in the emergency group might have been in labour for some time.

Regarding postoperative morbidity, fever was significantly higher (28%) in the emergency group compared to elective group (10%). A study done for finding out the association between method of delivery and re hospitalization showed an increased risk for uterine infection, wound complications, cardiopulmonary problems and thrombosis in Caesarean section. Presence of urinary retention, abdominal distension and postpartum hemorrhage were all more in the emergency group. This is in accordance with the study of Robert E Dean <sup>(6)</sup>.He reported 30% of elective and 70% of emergency group had morbid postoperative course. It was observed that the infectious morbidity in Caesarean section is high

in the emergency group. Studies have demonstrated no statistically significant difference in the ratios of post Caesarean infectious morbidity with closure of pelvic peritoneum<sup>(7)</sup>, single versus double layer uterine closure<sup>(7)</sup>, exteriorization of uterus for repair<sup>(8)</sup> and ,postoperative vaginal cleansing with povidone iodine<sup>(9)</sup>.

Increase incidence of wound infection in the in the emergency in the emergency group is highly significant. Though in our hospital antibiotic prophylaxis is given for all cases of Caesarean sections, still infectious morbidity is occurring and is higher for emergency Caesareans. ACOG recommends the use of a single dose of a narrow spectrum first generation cephalosporin or a single dose of clindamycin with an amino glycoside for those with penicillin allergy, as prophylaxis for Caesarean delivery.<sup>(5,10)</sup> Urinary tract infection can be brought down by the policy of avoiding catheterisation as far as possible in primary Caesarean sections.

The mean day of suture removal between the two groups did not have any significant difference. The duration of hospital stay was more in emergency cases than elective cases. Most of the patients who were discharged late was suffering from wound infection.

## References

1. Rosen T. Placenta accreta and Caesarean scar pregnancy .Clinical Perinatology. 2008.35;519 -29.
2. Belizan JM, Althabe F, Barros FC, Alexander S. Rates and complications of Caesarean section in Latin America. BMJ 1999; 319:1397-1402.
3. Berg CJ, Callaghan WM, Syverson C. Pregnancy related mortality in the United States ,Obst-Gynec.2010;116:1302-1309.
4. Leth RA, Moller JK, Thomsen RW et.al. Risk of selected postpartum infections after Caesarean section compared with

vaginal birth. Acta Obstetric Gynaec Scand. 2009;88:976-983.

5. Tita AT, Rouse DJ, Blackwell S et.al. Emerging concepts in antibiotic prophylaxis for Caesarean delivery. A systematic review. Obst Gynaec. 2009;113:675-682.
6. Robert E Dean Stuart Taylor. Postoperative morbidity from Caesarean section. AmJ Obst Gynaec 961-987.
7. CAESAR study collaborative group. Caesarean section surgical techniques: a randomised factorial trial. BJOG.2010; 117:1366-1376.
8. CORONIS Trial collaborative group, The CORONIS trial international study of Caesarean section Surgical techniques: a randomised fractional factorial trial. BMC. Pregnancy Child birth 2007;7:24.
9. Haas DM, Pazouki F, Smith R, et.al. Vaginal cleansing before Caesarean delivery to reduce post operative infectious morbidity :a randomised controlled trial. Am J Obst Gynecol.2010;203:310.e1-e6.
10. Tita AT, Hauth JC, Grimes AT, et.al. Decreasing incidence of post caesarean endometritis with extended spectrum antibiotic prophylaxis. Obstet Gynaecol. 2008;111:51-56.