ORIGINAL ARTICLE

Post-operative Maternal Complications. A Comparison Between Elective And Emergency Caesarean Sections

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ABSTRACT

Introduction: According to available statistics, 29% of hospital deliveries are conducted through LSCS (lower segment caesarean section); 80% of which are emergency caesareans. The indications, complications and feto-maternal outcomes of emergency caesareans differ from elective caesareans.

Objective: Comparison of postoperative maternal complications in elective versus emergency caesarean sections.

Study Design: Comparative study.

Setting: Department of Obstetrics and Gynecology, Unit-I, Sir Ganga Ram Hospital, Lahore.

Duration of Study: From January to July 2008.

Subjects and Methods: Sixty cases of elective and sixty cases of emergency caesarean sections were included in this study. The cases where elective procedure was used were labeled as Group-A, and those where emergency procedure was carried out were labeled as Group-B.

Results: The study used samples comparable on important parameters like age and parity. It was found that although complications occurred in elective as well as emergency caesareans, the ratio of complications was higher in the latter category. Difference of complications was found to be significant for anaemia and postoperative fever only. Apart from identifying the underlying factors that may be responsible for the complications, the study also highlight the importance of proper patient management in preventing the complications from developing in the first place.

Conclusion: In emergency caesarean section, maternal morbidity is high. Women undergoing emergency procedures are at high risk, and measures should be taken beforehand to make this procedure as safe as possible.

Keywords: Emergency LSCS, Elective LSCS, Maternal complications

INTRODUCTION

Delivery of baby by an abdominal and uterine incision is defined as cesarean section which may be planned or done in emergency depending upon the indication[1]. Planned cesarean delivery is timed to suit mother and staff. These are cases where there is an indication for cesarean section but there is no urgency and examples include placenta previa with no active bleeding and mal-presentation etc. Whereas emergency cesarean sections are carried out when there is an immediate threat to the mother or fetus.

World wide there has been a dramatic increase in the frequency of cesarean section. In developing countries most of the cesarean sections are done as an emergency procedure, percentage being 81.31 % for emergency and 18.69 % for elective[2]. The proportion of emergency cases in any hospital depends on catchment area of hospital, type of obstetrics population, ratio between booked and un-booked cases and referral status.

The procedure is strongly associated with maternal morbidity and mortality which cannot be totally avoided. The fundamental complications are post-partum hemorrhage, anesthesia related complications, wound infection and urinary tract infection. Overall post-operative complication rate is 34%.Out of this, emergency cases account for 90.38 % while elective cases account for 9.62 %[3]. Higher rate of emergency procedure is a major contribution for increased maternal morbidity and mortality in cesarean section[4].

Complications are largely dependent on nature of conditions for which operation is performed and risk seems to be higher in cases of repeated cesarean section[5]. Wound infection complicates 8.1 %[6] of cases & found to be related to the choice of suture and grater maternal weight[7]. Prophylactic antibiotics are administered to reduce its incidence.

The rationale behind the study was to identify the risk factors which contribute for emergency caesarean section leading to higher maternal morbidity and mortality. Addressing them will improve the quality of pre-natal care and management of obstetric population and

subsequently reduce the number of emergency cesarean sections.

OBJECTIVE

A comparison between post-operative maternal complications in elective versus emergency Caesarean sections.

MATERIAL AND METHODS

STUDY DESIGN

Cross-sectional comparative study

SETTINGS

Department of Obstetrics and Gynecology, Unit-I, Sir Ganga Ram Hospital, Lahore.

DURATION OF STUDY

Study was carried out over a period of six months starting from 09-01-2008 to 08-07-2008.

SAMPLE SIZE

Sixty cases of elective; and sixty cases of emergency caesarean sections.

SAMPLING TECHNIQUE

Non-probability: purposive sampling

SAMPLE SELECTION

Inclusion Criteria

- Patients undergoing elective and emergency caesarean sections in Gynae Unit I, having: a) same parity; b) same age range.

Exclusion Criteria

- Chorioamnionitis
- Anaemia
- Obesity

DATA COLLECTION

Patients fulfilling the inclusion criteria were selected from Gynae Unit-I of Sir Ganga Ram Hospital. An informed consent was obtained from them for including in either procedure and for using their data in research. Confounding variables such as parity, age and history of previous caesarean section were controlled by matching the two groups on these variables. The selected patients were divided into two groups. Those undergoing elective procedure were labeled as Group-A, and those who have undergone emergency procedure were labeled as Group-B.

A proforma was filled in respect of all patients providing information regarding personal profile, mode of admission, booking status, number of antenatal visits, detailed history, findings of abdominal and vaginal examination, postoperative complications in mother (postpartum haemorrhage, wound infections, urinary tract infection, anaemia, fever, deep venous thrombosis and paralytic ileus) followed for 4-7 days, postoperatively.

DATA ANALYSIS

The data were collected and analyzed using SPSS version 10.0. Age was presented as mean and standard deviation. Frequency and percentages of complications (postpartum haemorrhage, wound infections, urinary tract infections, anaemia, fever, deep venous thrombosis and paralytic ileus) were calculated.

For comparison of the maternal complications (postpartum haemorrhage, wound infections, urinary tract infection, anaemia, fever, deep venous thrombosis and paralytic ileus) between the two groups, Chi square test was applied as the test of significance. P value <0.05 is considered as significant.

RESULTS

During the study period of six months from 09-01-2008 to 08-07-2008, total 120 patients were included in this study. They were divided into two groups. In group A, there were 60 patients who had elective LSCS; while in group B, 60 patients had emergency LSCS.

The majority of the patients in both groups were between the ages of 20 to 25 years (Table-1).

In group-A 60.0% of the patients and in group-B, 36.7% patients were booked. There was statistically significant difference between two groups (P=0.010) (Table-2).

Majority of the cases in emergency were operated for fetal distress i.e. 26.7%, for PROM 20%, failed progress of labour 16.7%, previous scar in 6.7%, and uncontrolled PIH in 5% of cases (Table-3).

Most common indication in group A was previous lower segment caesarean section (LSCS) with post-dated pregnancy i.e. 26.7% patients, previous LSCS with CPD in 11.7% patients, previous LSCS with PIH in 16.7% patients, previous LSCS with good size baby in 5.0% patients, previous LSCS with gestational diabetes in 6.7% patients, placenta previa in 8.3% patients, precious pregnancy in 6.7% patients and twins with first breech in 1.6% patient (Table-4).

The following postoperative complications were found. Anaemia was developed in 10 patients in group-A, while in group-B anaemia was found in 26 patients with statistically significant results (P=0.001).Postoperative fever was noted in 3 patients in group-A and in 12 patients in group-B

(P=0.012). Urinary tract infection was found in 4 patients of group-A while in group-B it was in 6 patients (P=0.508). Wound infection developed in 2 patients in group-A and in 6 patients in group-B (P=0.143). Postpartum haemorrhage was found in 2 patients in group-B only (P=0.153). No patient in group A had postpartum haemorrhage. (Table-5)

Table-1: Distribution of cases by age

Age (Year)	Group-A (Elective Caesarean section)		Group-B (Emergency Caesarean section)	
	No.	%	No.	%
20-25	41	68.3	39	65.0
26-30	13	21.7	18	30.0
31-35	6	10	3	5.0
Total	60	100.0	60	100.0
Mean±SD	24.80±3.9		24.87±3.12	

Table-2: Distribution of cases by booking status

Booking status	Group-A (Elective Caesarean section)		Group-B (Emergency Caesarean section)	
	No.	%	No.	%
Booked	36	60	22	36.7
Unbooked	24	40	38	63.3
Total	60	100.0	60	100.0

Chi Square =6.54, df =1, P value = 0.010

Table-3: Indications of emergency caesarean section [n = 60]

Indications (with previous 1 LSCS)	Number	Percentage
Irregular pain	4	06.7
Fetal distress	16	26.7
Ruptured membranes	12	20.0
Failure to progress	10	16.7
Uncontrolled PIH	3	05.0
Cord prolapse	1	01.6
Breech in labour	3	05.0
Cephalopelvic Disproportion in labour	3	05.0
Placenta previa with APH	2	03.3
Good size baby in labour	2	03.3

Table-4: Indications of elective caesarean section [n = 60]

Indications (with previous 1 LSCS)	Number	Percentage
Post-dated	16	26.7
Cephalopelvic Disproportion	10	16.7
PIH	10	16.7
Breech	7	11.7
Good size baby	3	05.0
Gestational diabetes	4	06.7
Placenta Previa	5	08.3
Precious pregnancy	4	06.7
Twins with first breech	1	01.6

Table-5: Postoperative complications [n = 120]

Complications	Group-A (Elective Caesarean section)		Group-B (Emergency Caesarean section)		P value
	No.	%	No.	%	
Postpartum haemorrhage	-	-	2	3.3	0.153
Wound infection	2	3.3	6	10.0	0.143
Urinary tract infection	4	6.7	6	10.0	0.508
Anaemia	10	16.6	26	43.3	0.001
Fever	3	5.0	12	20	0.012
Deep venous thrombosis	-		-	-	-
Paralytic ileus	-		-	-	-

DISCUSSION

Sir Ganga Ram hospital is a large teaching hospital and is a tertiary referral centre. For the included elective cases 60.0% were booked, 40.0% were those who came in emergency but found to have no acute problem and were selected for elective surgery, and also those who were admitted through OPD with no previous antenatal follow ups. Unbooked cases are at higher risks of maternal and fetal complications then booked ones[8].

Sikandar and Memon reported that fetal distress was the most common indication of emergency cases[9]. Krychowska *et al.* reported fetal distress was the commonest indication in last fifteen years[10]. In present study most of the caesarean sections were due to fetal distress, comparable with findings by Krychowska *et al*; diagnosed both clinically (passage of meconium) and on basis of abnormal FHR pattern on CTG.

In a study done by Okezie *et al.,* fetal distress was responsible for 11.6% of emergency cases[11] Because of the non-availability of the fetal scalp blood sampling facility, and non avalibity of continuous and strict monitoring due to increased turn over of patients, early decisions of caesarean section were taken to save babies. It lead to over-utilization of this indication (fetal distress), resulting in increased caesarean section rate[12].

Anaemia and fever are the common morbidities after caesarean section[15]. Majority of the anaemic patients in elective group had mild anaemia. Pre-operative anaemia in these patients was corrected beforehand with either i/v iron preparation or blood transfusion.

In current study, PPH was observed in 3.3% of emergency cases only. In a study by Valgeirsdottir *et al.,* in 2010, the overall incidence of PPH was found to be 16.5%[14]. In current study, this low incidence might be due to small sample size, although active measures were taken in prone patients for both groups i.e. syntocinon infusion, uterine massage but we added misoprostol both sublingually and per rectally for PPH prophylaxis in this study.

All types of maternal complications were more commonly seen with emergency cases as compared to elective ones except for DVT and paralytic ileus which didn't occur in either group. Difference of complications was found to be significant for anaemia (P=0.001) and postoperative fever only (P=0.012).

Sir Ganga Ram, being very busy hospital with high turn over, most of the things are over looked specially sterilization and referrals like "Dai" handled patients with multiple vaginal examinations predispose wound infections and UTI. In elective surgery, there is adequate time for the patients to have bath before the surgery. Factors like area preparation and antibiotic administration reduce the chance of infection postoperatively.

Avoiding unnecessary vaginal examinations before surgery and increased fluid intake and early removal of catheter after surgery may further curtail the existing rate of UTI.

Wound infection occurred in 10% of emergency and 3.3% of elective cases in present study. Dimitrova *et al.,* (2005) proposed that caesarean section is characterized with morbidity even if performed as a planned procedure[5]. No significant difference was found in the distribution

of different types of postoperative complications in planned and emergency sections, as demonstrated by this clinical study. In our study, the high rate of wound infections in emergency caesarean was due to referrals with prolonged labour, ruptured membranes for more than six hours.

Efforts should be made to improve the safety of caesarean section by investigating and rectifying the factors responsible for the maternal complications.

CONCLUSION

This study shows that pre operative measures for emergency caesarean section maternal morbidity is higher as compared to elective caesarean. Measure should be taken to make the procedures as safe as possible. By creating awareness about early booking and antenatal care can substantially decrease the number of emergency caesarean section, hence decreasing the maternal morbidity and mortality.

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