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COMPARATIVE STUDY OF MATERNAL AND FETAL OUT COME IN EMERGENCY AND ELECTIVE CAESAREAN SECTION

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KEYWORDS :

INTRODUCTION

Caesarean section is done where vaginal delivery is considered either inappropriate or dangerous to either the mother or baby.

Caesarean section is defined as the birth of fetus through incision in the abdominal wall and uterine wall after 20 weeks of gestational age.

With small family norm in recent times, however, women in increasing numbers have been requesting elective as their own choice. This figure varies from 4% to 38% in different countries across the globe.

In our hospital rate of caesarean deliveries 43 %

Caesarean deliveries now account for approximately one third of all deliveries and represent the most common surgical procedure .

Thus there is a significant need to review the future maternal complications following CS, The impact on fetus as well as long term and short term out comes.

This is a comparative study of maternal &fetal outcome in emergency and elective caesarean sections done at MCH Nellore during the period of 1 year from July 2016 to July 2017.

AIMS AND OBJECTIVES

1. To study maternal & fetal outcome in emergency and elective caesarean sections.
2. To study intra operative maternal and fetal complications in emergency and elective caesarean sections.
3. To study post-operative maternal and fetal complications in emergency and elective caesarean sections.
4. To study hospital stay of patients in emergency and elective caesarean sections

MATERIALS AND METHODS

This comparative study was conducted at Dept of Obstetrics at MCH Nellore , ACSR Govt. Medical College.

In this hospital based descriptive study, 100 cases of emergency caesarean sections and 100 cases of elective caesarean sections done over a period of 1 year were compared.

Inclusion Criteria:

- Pregnant Mothers admitted through OPD
- Pregnant Mothers admitted through emergency ward
- Primipara
- Multipara
- Pregnant Mothers of any age group

Exclusion Criteria:

- Classical Caesarean Section
- Patients with h/o previous myomectomy, hysterotomy .

Patients undergoing Emergency Caesarean Section were grouped under Group A. Those undergoing Elective CS were grouped under Group B. Name, age, address, IP no, LMP, EDD, admitting ward were, obstetric history, and indication for surgery, date of operation, date of discharge were noted.

Based on the indications, patients were decided for either emergency or elective LSCS. Some patients who were planned for elective LSCS ended up in undergoing Emergency LSCS (e.g. those with 2 previous LSCS in labour).

PROFORMA

IP No:
Date of Admission:
Place of Admission: Antenatal Ward / Emergency Ward
Name:
Age:
LMP:
Address:
EDD:
Obstetric Formula:
Clinical Examination & Diagnosis:
EmLSCS/ElLSCS:
Indications for Caesarean Section:
Type of Anaesthesia:

INTRAOPERATIVE COMPLICATIONS:

- Anaesthesia complications:
- Difficulty in Intubation
- Haemorrhage
- Bladder injury
- Bowel injury
- Extension of Uterine incision
- Atonicity
- Classical hysterectomy
- Intraoperative transfusion
- Maternal Death

POSTOPERATIVE COMPLICATIONS:

- PPH
- Blood transfusion
- Respiratory infections
- Burst abdomen
- Urinary Tract Infection
- Wound infection
- Postoperative hospital stay

FOETAL COMPLICATIONS:

- Soft tissue injury
- Meconium stained Amniotic Fluid
- NICU Admissions
- Still birth
- Low Apgar score at 5 min
- Respiratory distress
- Early Neonatal Deaths

OBSERVATIONS AND RESULTS

Table 1: Depending on the Mode of Admission, the patients were divided into 2 groups.

Mode of Admissions	Emergency CS	Elective CS
Through OPD	20%	80%
On Emergency Basis	70%	30%

In Group A, more patients were admitted on an Emergency basis (70%), while in Group B, more were admitted through OPD.

Table 2: Indications of Caesarean Sections (n = 100):

Indications	Emergency LSCS	Elective LSCS
Obstructed labor	3 (3%)	0
1 previous CS	12 (12%)	24 (24%)
2 previous CS	15 (15%)	40(40%)
PROM	12 (12%)	0
Malpresentations	10 (10%)	13 (13%)
Preeclampsia	10 (10%)	3 (3%)
CPD	0	10(10%)
IUGR	5 (5%)	0
APH	5 (5%)	0
Failure to Progress	10 (10%)	0
Eclampsia	5 (5%)	0
Fetal Distress	8 (8%)	0
Failed Induction	5 (5%)	0
Total	100	100

The most common indication in emergency cesarean section s is2 previous LSCS in labor(15%) ,1 previous LSCS in labor(12%), PROM(12%),Failure to progress,(10%), Mal presentations(like breech in labor) (10%),preeclampsia(10%), Fetal distress(8%). IUGR, APH, Eclampsia, Failed induction(5%).

The most common indication in Elective cesarean section is Repeat section (2 previous cs 40%, 1previous cs 24%), Malpresentation (13%), CPD (10%).

Table 3: Intraoperative Maternal Complications:

Intraoperative Maternal Complications	Emergency CS	Elective CS	p value
Difficulty in intubation	8 (8%)	2 (2%)	0.05158
Hemorrhage	37 (37%)	14 (14%)	0.000
Bladder injury	3 (3%)	0 (0%)	0.080
Bowel injury	0	0	
Extension of uterine incision	25 (25%)	10 (10%)	0.005
Atonic Uterus	12 (12%)	4 (4%)	0.037
Caesarean Hysterectomy	2 (2%)	0	0.155
Intraoperative blood transfusions	35 (35%)	10 (10%)	0.000

A higher rate of Intraoperative complications was found in Group A than in Group B. Hemorrhage was more in Group A (37%) than in Group B (14%) (p = 0.000). Need of Intraoperative transfusions in group A was more (35%) than in group B (10%) (p=0.000). Extension of uterine incision in group A was more in Group A (25%) than in group B (10%) (p=0.005). Atonic uterus was more in group A (12%) than in group B (4%) (p=0.037).

Difficulty in intubation was more in Group A (8%) than in group B (2%) (p=0.05). Bladder injury was more in group A(3%)than in Group B(0%) (p=0.08).

Table 4: Postoperative Maternal Complications:

Postoperative Maternal Complications	Emergency CS	Elective CS	p value
PPH	28 (28%)	14 (14%)	0.015
Blood transfusion	30 (30%)	10 (10%)	0.000
Respiratory infections	14 (14%)	6 (6%)	0.059
Burst abdomen	2 (2%)	0	0.155
UTI	20 (20%)	8 (8%)	0.0144
Wound infection	18 (18%)	6 (6%)	0.0090
Postoperative Hospital Stay >1week	20 (20%)	5 (5%)	0.001

Need for post operative blood transfusion was found higher in group A (30%) than in group B (10%) (p=0.000).

PPH occurred more in Group A (28%) than in group B (14%) (p=0.015).

UTI occurred in more in Group A (29%) than in Group B (8%) (p=0.014).

Wound infection occurred more in group A (18%) than in Group B (6%) (p=0.009).

Respiratory tract infection were more in Group A (14%) than in group B (6%) (p=0.05).

Burst abdomen occurred more in Group A (2%) than in group B (0%) (p=0.15).

Postoperative hospital stay more than >1week was more in Group A (20%) than Group B (5%) (p=0.001).

Table 5: Fetal Complications:

Fetal Complications	Emergency CS	Elective CS	p value
Soft tissue injury	6 (6%)	2 (2%)	0.149
Respiratory Distress	10 (10%)	2 (2%)	0.0172
Meconium stained Amniotic Fluid	24 (24%)	4(4%)	0.000
NICU Admission	20(20%)	10(10%)	0.047
Stillbirth	6(6%)	0	0.0128
Early neonatal death	4 (4%)	0	0.040
Low Apgar at 5minutes	5 (5%)	1 (1%)	0.097

The most common neonatal complication in groups A & B is Meconium stained Amniotic Fluid (24% & 4% respectively) (p = 0.000), followed by NICU admissions (20% & 10% respectively) (p = 0.047). Out of the 6 stillbirths, 3 were IUDs. Stillbirths were higher in group A (6%) than in Group B (0%). Respiratory distress is more common with emergency CS (10%) than with elective CS (2%) (p=0.017). Early neonatal deaths were higher in Group A (4%) than in Group B (0%) (p=0.040). Low Apgar at 5 minutes were 5% & 1% in groups A&B respectively,

DISCUSSION

1. Depending on the Mode of Admission :- There was a statistically significant relationship between antenatal clinic attendance and the type of CS. In our study,80% of the elective cases were admitted through OPD, while 20% were through Emergency ward.,and,70% of the Emergency CS were admitted through emergency ward, while 30% were admitted through OPD(p=0.000).

2. Indications of Caesarean Sections -: In our study the most common indication for emergency CS was 2 previous LSCS in labour (15%).Other common indications for 1 previous CS in labour(12%),PROM(12%),failuretoprogress(10%),preeclampsia(10%),Malpresentations(10%),fetal distress(8%).

Similar reports were noted by Asifa Ghazi *et al* 2012-2previousLSCS (14%) 1previousCS (4%), Failure to progress (2%), Malpresentations (8%), PROM (12%), preeclampsia +Eclampsia (10%).

In our study, the most common indication for elective LSCS

was 2 previous CS (40%). Other common indications were 1 previous CS (24%), Malpresentations (13%), CPD (10%), and IUGR (10%). Similar reports were observed in a study done by Asifa Ghazi et al in the same study – 2 previous CS (40%), 1 previous CS (20%), CPD (8%), and Malpresentations (6%).

The proportion of emergency cases in any hospital depends upon a number of factors e.g., catchment area, type of obstetric population, ratio between booked & unbooked cases and, the referral of the hospital. There are other general factors like as well contributing to this like socioeconomic conditions, literacy rate, frequency and quality of antenatal care, timely referral by ANMs Most of the cases with history of repeat section presented to labor room in labor or with draining p/v.They did not have regular antenatal checkups. Our institution is tertiary care institution and therefore in our study most common indication was repeat section in labor.

3. Intraoperative Maternal Complications:

Intraoperative complications were found in emergency CS than in elective CS in our study. Haemorrhage was more common in Emergency CS (37%) than in Elective CS (14%) with significant *p* value (0.000). Haemorrhage was noted in 58% and 4% patients in emergency and elective caesarean section groups respectively in a study conducted by *Mehnaz Raees et al in 2006-2007. In a study conducted at Lahore, haemorrhage was found in 14.8% & 4.34% in emergency and elective CS respectively.*

Increased haemorrhage in emergency CS may be due to stretching of the lower segment and the impaction of the presenting part into the pelvic cavity thereby making the operation bloody. In our study hemmorage was estimated on subjective basis.

In our study, extension of uterine incision was found more in emergency CS (25%) than in elective CS (10%).This is statistically significant (p=0.005).16% and 0% were found in emergency CS and elective CS respectively in a study conducted by *Mehnaz Raees et al in 2006-2007. 56% & 6% were found in emergency CS and elective CS* respectively in a study conducted by Asifa Ghazi et al in 2012.

More patients in Emergency CS (35%) needed Intraoperative transfusions than in Elective CS (10%) in our study, which was statistically significant (*p*=0.000). In a study conducted by Asifa Ghazi et al in 2012, need for Intraoperative transfusions were 92% & 20% in emergency and elective CS respectively.

Atonic uterus was found in 12% & 4% in emergency CS and elective CS in our study, and it was statistically significant(*p*=0.037). In a study conducted by Asifa Ghazi et al in 2012, 36%&8% were found in elective and emergency respectively. 13.6% of Emergency CS patients were found to have had Atonic uterus in a study conducted by Jindal Promila et al in 2008.

In our study, difficulty in intubation was found in 8% & 2% in emergency and elective CS respectively. In a study conducted by Asifa Ghazi et al in 2012, difficult intubation was found in 14% & 0% in emergency and elective CS respectively. In a study conducted by *Mehnaz Raees et al in 2006-2007, 2% & 0% of cases in emergency and elective CS respectively had difficult intubation.*

*Bladder injury occurred in 3% % 0% of cases in emergency and elective CS in our study.*In a study conducted by Asifa Ghazi et al in 2012, bladder injury was found in 8% & 0% of *in emergency and elective CS respectively.* 4.6% of Emergency CS patients were found to have had bladder injury in a study conducted by Jindal Promila et al in 2008.

Caesarean hysterectomy was done in 2% & 0% in *emergency and elective CS respectively in our study.* 8.6% of Emergency CS patients had Caesarean Hysterectomy in a study conducted by Jindal Promila et al in 2008. In a study conducted by Asifa Ghazi et al in 2012, Caesarean hysterectomy was done in 16% & 2% *emergency and elective CS respectively.*

Postoperative complications *were more in emergency CS than in elective CS in our study. Post operative blood transfusions were necessary in 30% & 10% of emergency and elective CS respectively in our study, which was statistically significant (p=0.000). 62% & 16% emergency and elective CS respectively needed transfusions* in a study conducted by Asifa Ghazi et al in 2012. *In our study most of the patients need blood transfusions due to intra operative blood loss leading to low Hb levels post operatively and some patients preoperatively with moderate anaemia became severe anaemic due to intraoperative blood loss and post partum haemorrhage .*

PPH in our study occurred in 28% & 14% emergency and elective CS respectively, and it was statistically significant (p=0.015). i In a study conducted by *Mehnaz Raees et al in 2006-2007, 24% & 6% emergency and elective CS respectively developed PPH.* In a study conducted by Asifa Ghazi et al in 2012, 18% & 4% of emergency *and elective CS respectively developed PPH.*

Statistically significant Urinary Tract Infections occurred in 20% & 8% of emergency *and elective CS respectively* in our study (*p*=0.014). In a study conducted by Asifa Ghazi et al in 2012, UTI occurred in 66% & 18% *emergency and elective CS respectively.*

In our study, statistically significant 18% & 6% of emergency *and elective CS respectively developed wound infection (p=0.009).*

In a study conducted by Asifa Ghazi et al in 2012, wound infection occurred in 22%&8% *emergency and elective CS respectively.*

Respiratory infections occurred in 14% & 6% of emergency and elective CS respectively in our study. In a study conducted by Asifa Ghazi et al in 2012, respiratory infections occurred in 40%&14% *emergency and elective CS respectively. Samia Hassan et al in a study in 2006 found 9.2% & 4.3% of emergency & elective CS cases respectively developing respiratory infections.*

In our study, 2% & 0% in emergency & elective CS cases respectively developed burst abdomen. In a study conducted by Asifa Ghazi et al in 2012, burst abdomen occurred in 2% & 0% *emergency and elective CS respectively.*

Postoperative Hospital Stay in 20% of the emergency CS were longer than 1week, while in 5% of elective CS was longer than 1 week in our study. In a study conducted by Asifa Ghazi et al in 2012, 62% & 14% of emergency *and elective CS respectively had a prolonged postoperative hospital stay.*

The incidence of postoperative complications may be higher in emergency than in elective CS, these may prolong the Patient's stay in hospital, as was found in our study.

4. Foetal complications *were greater in emergency CS than elective CS In our study. Meconium stained amniotic fluid (MSAF) occurred more in emergency CS (24%) than in elective CS (4%) (p<0.000).*

NICU admissions were 20% & 10% of emergency and elective CS respectively in our study, which is statistically significant (p=0.047). 24.2% of Emergency CS babies had NICU admission in a study conducted by Jindal Promila et al in 2008.

Samia Hassan et al in a study in 2006 observed 14.9% &4.3 % cases in emergency CS and elective CS respectively. Most of the NICU admissions are due to respiratory distress, prematurity, perinatal lasphyxia , Low Apgar scores at 5 minutes of birth were 5% & 1% in *emergency and elective CS respectively in our study. Lulu Al Nuaim et al in a study done in 1996 found low Apgar at 5 minutes in 8.5% & 2.9%* in *emergency and elective CS respectively.*

Respiratory distress at birth was found in 10% & 2% of emergency and elective CS respectively in our study.

Still births were more in emergency CS(6%) than in Elective CS(0%) in our study, which were statistically significant (p=0.012). 4.1% of Emergency CS babies were stillbirths in a study conducted by Jindal Promila et al in 2008.

Still births 3 were IUD due to abruption and remaining 3 babies were died due to asphyxia due to obstructed labour in which presenting part was jammed in the pelvic cavity causing difficulty in the delivery of the baby.

Statistically significant Early neonatal deaths were 4% & 0% in emergency & elective CS respectively in our study ($p=0.04$). *3.3%* of Emergency CS babies were neonatal deaths in a study conducted by Jindal Promila et al in 2008.

In our study early neonatal deaths were due to respiratory distress due to meconium aspiration syndrome.

In our study, soft tissue injury to baby was 6% & 2% in emergency & elective CS respectively.

CONCLUSION

From this study done, it can be concluded that Emergency Caesarean Section is associated with more maternal and foetal complications than Elective Caesarean Section.

More maternal complications such as haemorrhage, extension of uterine incision, Atonic uterus, need for Intraoperative transfusions, PPH, wound infection, prolonged postoperative hospital stay occur in Emergency caesarean Section than in Elective Caesarean Section.

Foetal complications occur more in Emergency Caesarean Section than in Elective Caesarean Section.

Antenatal care should be directed to effect-planned CS operations, so as to reduce the problems associated with emergency CS.

This study shows that with regard to maternal & foetal outcome, it is preferable to opt for Elective Caesarean over Emergency Caesarean Section.

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