

Original Research

A Retrospective Analysis of Profile of Maternal Complications in Patients Undergoing Cesarean Sections

Umamaheswar Rao¹, Divya Rani Aucha², Venkatesh Sriram³, Manikonda Rajya Laxmi⁴

¹Associate Professor, Department of Anaesthesiology, Neelima Institute of Medical Sciences, Ghatkesar, Hyderabad, Telangana, India

²Assistant Professor, Department of Obstetrics and Gynaecology, Maheshwara Medical College & Hospital, Chitkul, Sangareddy, Telangana, India

³Assistant Professor, Department of Anaesthesiology, Dr. Patnam Mahender Reddy Institute of Medical Sciences, Chevella, Rangareddy, Telangana, India

⁴Assistant Professor, Department of Obstetrics and Gynaecology, Maheshwara Medical College & Hospital, Chitkul, Sangareddy, Telangana, India

Corresponding Author

Manikonda Rajya Laxmi

Assistant Professor, Department of Obstetrics and Gynaecology, Maheshwara Medical College & Hospital, Chitkul, Sangareddy, Telangana, India

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ABSTRACT

Background: Cesarean delivery is a surgical operation to deliver a fetus weighing greater than or equal to 1000 g or gestational age (GA) greater than or equal to 28 weeks compared with vaginal delivery, CS delivery carries a higher number of postpartum complications, and the higher rate is mainly related to obesity. Hence, the present study was conducted for evaluating the maternal complications in patients undergoing cesarean sections.

Materials & Methods: Data of a total of 200 subjects who underwent cesarean section was analyzed. If the chosen patient's chart or record was misplaced or lost, the chart/record of the patient whose cesarean birth operation was carried out next to the case chosen for data extraction was taken into consideration. The following signs and symptoms could be present during the procedure or within 7 days after the cesarean delivery as a result of maternal complications: infection, fever, wound dehiscence, bleeding, organ damage, anemia, respiratory tract infection, and postpartum cardiomyopathy. All the results were recorded in Microsoft excel sheet and were subjected to statistical analysis using SPSS software.

Results: In the present study, a total of 200 pregnant subjects scheduled to undergo c section were enrolled. Mean age of the patients was 31.5 years. Majority of the subjects were of rural residence while mean BMI of the subjects was 26.8 Kg/m². Out of 200 subjects, maternal complications were encountered in 31 percent of the subjects. Among these 62 patients with maternal complications, intraoperative complications were seen in 13 patients while postoperative complications were seen in the remaining 49 patients.

Conclusion: Postoperative complications are the most common type of complications associated with cesarean section with surgical site infection being the most commonly encountered.

Key words: Maternal, Cesarean section, Complications.

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INTRODUCTION

Cesarean delivery is a surgical operation to deliver a fetus weighing greater than or equal to 1000 g or gestational age (GA) greater than or equal to 28 weeks in the developing countries and 20 weeks in developed countries, through an incision on the anterior abdominal wall and the uterus.¹⁻³ Increasing rate and number of

cesarean deliveries are known to be associated with maternal risks (peripheral organ damage, bleeding, need for intensive care, long surgery time, hysterectomy and maternal death). Increasing rate and number of cesarean deliveries are known to be associated with fetal risks [prematurity, low APGAR (appearance, pulse, grimace, activity, respiration) score, stillbirth and early neonatal

death]. Though timing of the birth, the surgeon's experience, the competence of the center, the surgical technique, and the risk of anesthesia are factors that play important roles in the emergence of complications, little is known to the factors contributing to the management outcomes in spite of the complications escalating.⁴⁻⁶ The prevalence of cesarean section (CS) related maternal complications was assessed in a previous study. In the cohort of abdominal delivery, puerperal complications were significantly more frequent compared with those following vaginal delivery ($p < 0.05$). In the group of CS, obese women have higher prevalence of maternal complications, particularly hypertension and intestinal complications ($p < 0.05$). Compared with vaginal delivery, CS delivery carries a higher number of postpartum complications, and the higher rate is mainly related to obesity.⁷ Hence; the present study was conducted for evaluating the maternal complications in patients undergoing cesarean sections.

MATERIALS & METHODS

The present study was conducted for evaluating the maternal complications in patients undergoing cesarean sections. Data of a total of 200 subjects who underwent cesarean section was analyzed. Complete demographic and clinical details of all the subjects were obtained from record files. Inclusion criteria for the present study included 200 cesarean deliveries performed after the period of fetal viability (≥ 28 weeks). The study population was retrieved from the labor and operation

theatre logbook registry. If the chosen patient's chart or record was misplaced or lost, the chart/record of the patient whose cesarean birth operation was carried out next to the case chosen for data extraction was taken into consideration. The following signs and symptoms could be present during the procedure or within 7 days after the cesarean delivery as a result of maternal complications: infection, fever, wound dehiscence, bleeding, organ damage, anemia, respiratory tract infection, and postpartum cardiomyopathy. All the results were recorded in Microsoft excel sheet and were subjected to statistical analysis using SPSS software.

RESULTS

In the present study, a total of 200 pregnant subjects scheduled to undergo c section were enrolled. Mean age of the patients was 31.5 years. Majority of the subjects were of rural residence while mean BMI of the subjects was 26.8 Kg/m². Out of 200 subjects, maternal complications were encountered in 31 percent of the subjects. Among these 62 patients with maternal complications, intraoperative complications were seen in 13 patients while postoperative complications were seen in the remaining 49 patients. Intraoperative bleeding, surgical site infection and bowel/bladder injury were seen in 12.9 percent, 4.84 percent and 3.23 percent of the patients with maternal infections. Surgical site infection, anaemia, postpartum haemorrhage and wound dehiscence was seen in 19.35 percent, 14.52 percent and 12.9 percent of the patients with maternal complications.

Table 1: Incidence of maternal complications

Variable	Number	Percentage
Maternal complications present	62	31
Maternal complications absent	138	69
Total	200	100

Table 2: Maternal complications

Maternal complications		Number	Percentage
Intraoperative	Intraoperative bleeding	8	12.90
	Surgical site extension	3	4.84
	Bowel/bladder injury	2	3.23
Postoperative	Surgical site infection	17	27.42
	Anaemia	12	19.35
	Postpartum haemorrhage	9	14.52
	Wound dehiscence	8	12.90
	Others	3	4.84
Total		62	100

DISCUSSION

Once upon a time in the last century, the modern cesarean delivery was begun to reduce the maternal and newborns complications, morbidity and mortality. Unfortunately, nowadays, however, undergoing

cesarean is not used only when necessary and only to save the mother and the baby; rather, it is gradually being assumed as something luxurious by some communities. Those documents also report the average rate of cesarean delivery in recent years has increased

by 10-15% in the entire world's countries. Some studies show that the probability that a woman undergoes a cesarean is 3 times more than that of 20 yr ago. The increasing caesarean section (C-section) has also been different in different countries, such that for developing countries it is much more than for developed ones.⁷⁻⁹ Hence; the present study was conducted for evaluating the maternal complications in patients undergoing cesarean sections.

Out of 200 subjects, maternal complications were encountered in 31 percent of the subjects. Among these 62 patients with maternal complications, intraoperative complications were seen in 13 patients while postoperative complications were seen in the remaining 49 patients. Intraoperative bleeding, surgical site infection and bowel/bladder injury were seen in 12.9 percent, 4.84 percent and 3.23 percent of the patients with maternal infections. Surgical site infection, anaemia, postpartum haemorrhage and wound dehiscence was seen in 19.35 percent, 14.52 percent and 12.9 percent of the patients with maternal complications.

Mascarello KC et al determined the risks of severe acute maternal complications associated with cesarean section without medical indication. The literature search was performed systematically, in multiple stages, in the PubMed, Lilacs, and Web of Science databases using the following descriptors: (postpartum period) and (cesarean section or natural childbirth) and ((morbidity or mortality) or (postpartum hemorrhage) or (puerperal infection) or (surgical infection) or (puerperal disorders)). The protocol of the study was registered at PROSPERO as CRD42016032933. A total of 1,328 articles were found; after selection, eight publications that met the study objective and inclusion criteria were selected, with information on 1,051,543 individuals. The results obtained in the meta-analyses indicate that women with cesarean section have a higher chance of maternal death and postpartum infection, but they have a lower chance of hemorrhage. For the blood transfusion outcome, the group effect was not associated with the type of delivery. The quality of evidence was considered low for hemorrhage and blood transfusion and moderate for postpartum infection and maternal death.⁹ van Ham MA et al assessed the intra-operative surgical complications and postoperative maternal morbidity rate of cesarean section. A total of 2647 women, delivered by cesarean section in our department between 1983 and 1992, were studied retrospectively. Three caesarean section groups were formed: (1) primary elective, (2) primary acute, without any effort to deliver vaginally, and (3) secondary acute, due to a failed vaginal delivery. The overall maternal intra-operative complication rate was 14.8%. The most common complications were lacerations of the uterine corpus (10.1%) and bloodloss \geq 1000 ml (7.3%).

The complication rate of the secondary group (23.4%) was significantly higher ($p < 0.001$) compared to both primary groups (7.4%). The overall maternal postoperative morbidity rate was 35.7%. Fever (24.6%), bloodloss between 1000 and 1500 ml (4%), haematoma (3.5%) and urinary tract infections (3.0%) were the most frequent complications. The primary elective group showed significantly ($p < 0.001$) lower major (2.6%) and minor (23.7%) complication rates compared to the emergency groups (major 5.2%, minor 34%). Emergency caesarean sections carried the greatest risks regarding maternal complications compared to elective procedures.¹⁰

CONCLUSION

Postoperative complications are the most common type of complications associated with cesarean section with surgical site infection being the most commonly encountered.

REFERENCES

1. Paola Aghajanian M. Current diagnosis and treatment obstetrics and gynecology. 10th ed. In: Paola Aghajanian M, editor. 2007. p. 593–600.
2. Pallasmaa N, Ekblad U, Aitokallio-Tallberg A, Uotila J, Raudaskoski T, Ulander VM, et al. Cesarean delivery in Finland: maternal complications and obstetric risk factors. *Acta Obstet Gynecol Scand.* 2010; 89(7):896–902.
3. Betrán AP, Ye J, Moller A-B, Zhang J, Gülmezoglu AM, Torloni MR. The increasing trend in caesarean section rates: global, regional and national estimates: 1990-2014. *PLoS One.* 2016; 11(2):e0148343.
4. Gupta M, Saini V. Cesarean section: mortality and morbidity. *J Clin Diagn Res.* 2018; 12(9):QE01–06.
5. Kamilya G, Seal SL, Mukherji J, Bhattacharyya SK, Hazra A. Maternal mortality and cesarean section: an analytical observational study. *J Obstet Gynaecol Res.* 2010;36(2):248–253.
6. Koroukian SM. Relative risk of postpartum complications in the Ohio Medicaid population: vaginal versus cesarean section. *Med Care Res Rev.* 2004;61(2):203–224.
7. Loverro G, Greco P, Vimercati A, Nicolardi V, Varcaccio-Garofalo G, Selvaggi L. Maternal complications associated with cesarean section. *J Perinat Med.* 2001;29(4):322-326.
8. Latham SR, Norwitz ER. Ethics and “cesarean section on maternal demand” *Semin Perinatol.* 2009;33(6):405–409.
9. Mascarello KC, Horta BL, Silveira MF. Maternal complications and cesarean section without indication: systematic review and meta-analysis. *Rev Saude Publica.* 2017;51:105.
10. van Ham MA, van Dongen PW, Mulder J. Maternal consequences of caesarean section. A retrospective study of intra-operative and postoperative maternal complications of caesarean section during a 10-year period. *Eur J Obstet Gynecol Reprod Biol.* 1997;74(1):1-6. doi:10.1016/s0301-2115(97)02725-5.