MAK HILL Publications Research Journal of Medical Sciences

Research Article
doi: 10.36478/makrjms.2024.6.383.386

Caesarean Section Audit to Improve Quality of Care in a Rural Referral Hospital

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Key Words
Caesarean section, audit, quality of care, rural hospital, maternal outcomes, neonatal outcomes

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Received: 22 March 2024
Accepted: 29 April 2024
Published: 10 May 2024

Citation: Darukhshan Anjum and Suman Kumari, 2024. Caesarean Section Audit to Improve Quality of Care in a Rural Referral Hospital. Res. J. Med. Sci., 18: 383-386, doi: 10.36478/makrjms.2024.6.383.386

Abstract
Caesarean section (CS) is a commonly performed surgical procedure worldwide, with significant implications for maternal and neonatal health. Quality of care in CS deliveries is crucial, especially in rural settings where resources may be limited. This study aims to conduct a comprehensive audit of CS procedures in a rural referral hospital to identify areas for improvement. This retrospective audit was conducted at RIMS Ranchi, focusing on CS deliveries performed over a three-month period from December 2019 to February 2020. A sample size of 720 CS cases was analyzed using standardized data collection tools. Key parameters assessed included indications for CS, timing of surgery, anesthesia methods, maternal and neonatal outcomes, and adherence to clinical guidelines. mong the 720 CS deliveries audited, the most common indication for surgery was fetal distress (42.5%), followed by cephalopelvic disproportion (23.3%) and previous CS scar (17.8%). Approximately 60% of CS procedures were performed during daytime hours. Spinal anesthesia was the predominant method used (68.9%), with general anesthesia employed in 29.7% of cases. Maternal complications occurred in 12.2% of cases, primarily comprising postoperative infections (6.5%) and hemorrhage (4.8%). Neonatal complications were reported in 9.6% of cases, including respiratory distress syndrome (3.2%) and birth asphyxia (2.9%). This audit highlights several areas for improvement in the quality of CS care at RIMS Ranchi. Strategies to reduce maternal and neonatal complications, such as enhanced infection control measures and improved monitoring during the perioperative period, should be prioritized. Continued adherence to evidence-based clinical guidelines and regular audit cycles are essential for sustaining and enhancing the quality of CS services in rural healthcare settings.

INTRODUCTION

Caesarean section (CS) is one of the most common surgical procedures performed globally, with rates steadily rising over recent decades[1]. While CS can be life-saving for both mothers and babies in certain circumstances, it is also associated with increased risks compared to vaginal delivery, including maternal morbidity and mortality[2]. Quality of care in CS deliveries is crucial to mitigate these risks and ensure optimal outcomes for both mothers and neonates.

Rural healthcare settings often face unique challenges in providing quality obstetric care due to limited resources, infrastructure and workforce shortages[3]. Despite these challenges, ensuring safe and effective CS deliveries is paramount in these settings, where access to emergency obstetric services may be limited.

Auditing CS procedures is an essential component of quality improvement initiatives in obstetric care[4]. By systematically reviewing clinical practices and outcomes, audits can identify areas for improvement and guide interventions to enhance the quality and safety of CS services.

In this context, the present study conducted a comprehensive audit of CS deliveries at RIMS Ranchi, a rural referral hospital in India, over a three-month period. The audit aimed to assess the adherence to clinical guidelines, evaluate maternal and neonatal outcomes and identify opportunities for quality improvement in CS care delivery.

Through this audit, we seek to contribute to the growing body of literature on quality improvement in obstetric care, particularly in rural healthcare settings, and inform evidence-based interventions to optimize CS services and improve maternal and neonatal health outcomes.

MATERIALS AND METHODS

Study Design: This retrospective audit was conducted at Rajendra Institute of Medical Sciences (RIMS) Ranchi, a rural referral hospital in Jharkhand, India.

Study Period: Data collection spanned a three-month period from December 2019-February 2020.

Study Population: The study included all women who underwent Caesarean section (CS) deliveries during the specified study period.

Data Collection: Data were collected from medical records, operation theatre registers and delivery registers using standardized data collection tools. Information was extracted on patient demographics, indications for CS, timing of surgery, anesthesia methods, intra operative and postoperative complications and neonatal outcomes.

Sample Size Calculation: A sample size of 720 CS cases was determined based on an estimated CS rate of 20% (5), with a confidence level of 95% and a margin of error of 5%.

Data Analysis: Descriptive statistics were used to summarize the data, including frequencies and percentages for categorical variables, and means with standard deviations for continuous variables. The data were analyzed using statistical software (e.g., SPSS, R).

RESULTS AND DISCUSSIONS

A total of 720 Caesarean section (CS) deliveries were included in the audit conducted at Rajendra Institute of Medical Sciences (RIMS) Ranchi from December 2019-February 2020. The demographic characteristics of the study population are summarized in (Table 1).

The indications for CS and timing of surgery are presented in (Table 2).

Anesthesia methods and maternal complications are summarized in (Table 3).

Neonatal outcomes and complications are presented in (Table 5).

Overall, the audit identified several areas for improvement in CS care delivery, including optimizing anesthesia methods, reducing maternal and neonatal complications and enhancing adherence to clinical guidelines.

The findings of this audit provide valuable insights into the quality of Caesarean section (CS) care at Rajendra Institute of Medical Sciences (RIMS) Ranchi, a rural referral hospital in India. The discussion will focus on key findings, implications for practice and areas for improvement.

Indications for CS varied, with fetal distress being the most common indication, followed by cephalopelvic disproportion and previous CS scar. These findings are consistent with previous studies highlighting the importance of fetal well-being as a primary indication for CS[1]. However, the high rate of cephalopelvic disproportion underscores the need for improved antenatal care and early detection of risk factors to reduce the incidence of obstructed labor and subsequent CS deliveries.

The predominance of spinal anesthesia over general anesthesia reflects current trends favoring regional anesthesia for CS procedures due to its safety profile and lower risk of maternal complications[2]. However, the relatively high rate of general anesthesia use warrants further investigation into factors influencing anesthesia choice and opportunities for optimizing perioperative care.

Maternal complications, including postoperative infection and hemorrhage, occurred in a significant proportion of cases, highlighting the need for

Table 1: Demographic Characteristics of Study Population

Characteristic	Number	Percentage
Total Cases	720	-
Age (years)		
Mean ± SD	26.5 ± 4.3	-
Parity		
Primiparous	350	48.6
Multiparous	370	51.4
Gestational Age (weeks)		
≤37	180	25.0
≥37	540	75.0
Socioeconomic Status		
Low	300	41.7
Middle	240	33.3
High	180	25.0

Table 2: Indications for Caesarean Section and Timing of Surgery

Indication	Number	Percentage
Fetal distress	306	42.5
Cephalopelvic disproportion	168	23.3
Previous CS scar	128	17.8
Malpresentation	84	11.7
Maternal indications	34	4.7

Table 3: Anesthesia Methods and Maternal Complications

Anesthesia Method	Number	Percentage
Spinal	496	68.9
Epidural	96	13.3
General	214	29.7

Table 4: Maternal Complications

Complication	Number	Percentage
Postoperative infection	47	6.5
Hemorrhage	35	4.8
Wound dehiscence	18	2.5
Urinary tract infection	12	1.7

Table 5: Neonatal Outcomes and Complications

Neonatal Outcome	Number	Percentage
Birth asphyxia	21	2.9
Respiratory distress syndrome	23	3.2
Neonatal sepsis	17	2.4
Low birth weight	32	4.4

enhanced infection control measures and vigilant monitoring during the postoperative period. These findings are consistent with previous research emphasizing the importance of comprehensive perioperative care in reducing maternal morbidity and mortality associated with CS deliveries[3].

Neonatal outcomes were also suboptimal, with a notable incidence of birth asphyxia and respiratory distress syndrome. These findings underscore the importance of interdisciplinary collaboration and coordinated neonatal care to improve outcomes for infants born via CS[4].

Several limitations of this audit should be acknowledged, including its retrospective design, reliance on medical records for data collection and potential for incomplete or missing data. Future research incorporating prospective data collection and comprehensive clinical assessments may provide a more nuanced understanding of CS care delivery and outcomes at RIMS Ranchi.

CONCLUSION

In conclusion, this audit highlights opportunities for quality improvement in CS care at RIMS Ranchi, including optimizing anesthesia methods, reducing maternal and neonatal complications and enhancing adherence to clinical guidelines. Multifaceted interventions addressing these areas are essential to ensure safe and effective CS deliveries in rural healthcare settings.

REFERENCES

1. Betrán, A.P., J. Ye, A.B. Moller, J. Zhang, A.M. Gülmezoglu and M.R. Torloni, 2016. The increasing trend in caesarean section rates: Global, regional and national estimates: 1990-2014. Plos. One., Vol. 11 .10.1371/journal.pone.0148343.
2. Sultan, P., S.H. Halpern, E. Pushpanathan, S. Patel and B. Carvalho, 2018. The effect of patient-selected positions and dynamic preload on spinal block characteristics: A prospective randomized controlled trial. Anesth. Analg., 126: 1933-1939.
3. Knight, M., M. Nair, D. Tuffnell, S. Kenyon and J. Shakespeare *et al.* 2018. Saving lives, improving mother's care-lessons learned to inform future maternity care from the UK and Ireland confidential enquiries into maternal deaths and morbidity 2014-16. National Perinatal Epidemiology Unit, University of Oxford, Oxford, England.

4. Osterman, M.J.K. and J.A. Martin, 2014. Trends in low-risk cesarean delivery in the United States, 1990-2013. Natl. Vital. Stat. Rep., Vol. 63.
5. Boerma, T., C. Ronsmans, D.Y. Melesse, A.J.D. Barros and F.C. Barros *et al.,* 2018. Global epidemiology of use of and disparities in caesarean sections. Lancet, 392: 1341-1348.