International Journal of Science and Research (IJSR)
ISSN: 2319-7064
Impact Factor 2024: 7.101

Comparative Observational Study of General versus Regional Anesthesia in Placenta Previa Cases

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Abstract: ***Objective: To compare maternal and fetal outcomes in placenta previa cases managed with general anesthesia (GA) versus regional anesthesia (RA) during cesarean delivery. Methods: A retrospective observational study was conducted involving 60 patients with diagnosed placenta previa undergoing cesarean section. Thirty patients received GA and 30 received RA. Data were collected on intraoperative blood loss, hemodynamic stability, neonatal outcomes, and maternal complications. Results: Patients under RA had significantly lower mean blood loss (580 ± 120 ml) compared to GA group (820 ± 150 ml). Apgar scores at 1 and 5 minutes were significantly better in the RA group. Incidence of ICU admission and postoperative nausea were higher in the GA group. Conclusion: Regional anesthesia offers better maternal and neonatal outcomes in placenta previa cases compared to general anesthesia. Whenever feasible, RA should be preferred.***

Keywords: Placenta previa, General anesthesia, regional anesthesia, Cesarean section, Maternal outcomes, Neonatal Apgar score

1.Introduction

Placenta previa, a condition where the placenta partially or completely covers the internal cervical os, is a significant cause of obstetric hemorrhage. Cesarean section remains the delivery method of choice, and the anesthetic approach plays a crucial role in maternal and fetal outcomes. While general anesthesia (GA) offers rapid induction and airway control, regional anesthesia (RA) provides better hemodynamic stability and neonatal outcomes. This study aims to compare GA and RA in placenta previa cases undergoing cesarean delivery, focusing on intraoperative and postoperative outcomes.

2.Materials and Methods

Study Design: Retrospective observational study.

Study Setting: Department of Anesthesiology and Obstetrics, SIMS-Hapur, over a period of 12 months.

Sample Size: 60 patients with diagnosed placenta previa undergoing cesarean section.

Groups:
Group A (n = 30): Received General Anesthesia
Group B (n = 30): Received Regional Anesthesia (Spinal/Epidural)

Inclusion Criteria:
Diagnosed placenta previa via ultrasound
Singleton pregnancy
Elective or emergency cesarean section

Exclusion Criteria:
Placenta accreta spectrum
Coagulopathy or contraindications to regional anesthesia

Data Collected:
Demographics, intraoperative blood loss (ml), duration of surgery, Apgar scores, neonatal NICU admission, maternal complications.

Statistical Analysis:
Data analyzed using SPSS version 23. Mean values compared using t-test, p-value < 0.05 considered significant.

3.Results

Demographics:

Both groups were comparable in terms of age, BMI, and gestational age.

Intraoperative Findings:

Mean blood loss: GA group = 820 ± 150 ml, RA group = 580 ± 120 ml ($p < 0.01$)

Hemodynamic instability (need for vasopressors): GA = 20%, RA = 6.6%

Surgery duration: Similar between both groups (~50 min)

Neonatal Outcomes:
Apgar score at 1 min: GA = 6.8 ± 1.2, RA = 8.1 ± 0.8
Apgar score at 5 min: GA = 8.5 ± 1.0, RA = 9.3 ± 0.5
NICU admission: GA = 26.6%, RA = 10%

Maternal Complications:
ICU admission: GA = 16.6%, RA = 3.3%
Nausea/vomiting: GA = 40%, RA = 13.3%

4.Discussion

Our study demonstrates that regional anesthesia is associated with better maternal and neonatal outcomes in placenta previa cases compared to general anesthesia. Lower intraoperative blood loss in the RA group can be attributed to stable hemodynamics and sympathetic blockade-induced vasodilation. Improved neonatal Apgar scores in RA are likely due to the absence of systemic anesthetic depressants. Previous studies, including those

by Gizzo et al. and Dyer et al., also report better outcomes with regional anesthesia.

However, general anesthesia remains indispensable in certain emergency situations, especially when maternal or fetal distress mandates rapid delivery. Limitations of the study include its retrospective nature, small sample size, and institutional practice bias.

5.Conclusion

Regional anesthesia provides better hemodynamic stability, less blood loss, and superior neonatal outcomes compared to general anesthesia in cesarean sections for placenta previa. Whenever not contraindicated, RA should be preferred in managing such cases.

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