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Comparative Study Of Merits And Demerits Of Exteriorisation Of Uterus During Cesarean Section.

Dr. Girija M K
MBBS MS Professor

Dr T G Gowridev
Junior Resident
(Obstetrics And Gynaecology, Dr BR Ambedkar Medical College, India)

Abstract:
Background*: The exteriorization of the uterus during a caesarean section involves carefully bringing the uterus out of the abdominal cavity and placing it on the woman's abdomen, affording surgeons better visualization and access during the procedure. Advocates of this technique argue for its routine adoption, emphasizing potential benefits such as enhanced surgical precision and reduced risk of complications. Conversely, critics raise concerns regarding associated risks, including increased likelihood of infection and prolonged surgical time. In the complex landscape of obstetric care, the decision to exteriorize the uterus during a caesarean section is multifaceted, influenced by a myriad of factors including patient characteristics, surgical expertise, and institutional protocols. This discussion seeks to comprehensively explore the merits and demerits of uterine exteriorization, examining the current evidence base and clinical practices to inform decision-making and optimize maternal and neonatal outcomes. Through a nuanced evaluation of the benefits and risks, obstetricians can navigate the complexities of uterine management during caesarean sections, ultimately striving to provide safe and effective care for both mother and baby.*
Materials and Methods: *The present prospective observational study was conducted on 100 patients in the Department of obstetrics and gynecology, Dr. B. R. Ambedkar Medical College and Hospital carried out from October 2022 to September 2023. Prior to the initiation of the study, Ethical and Research Committee clearance was obtained from Institutional Ethical Committee.*
Results*: The study conducted a comparative analysis of various demographic, clinical, intraoperative, and postoperative variables between two groups undergoing cesarean section. Results showed no statistically significant differences in age (p = 0.1484), BMI (p = 0.152), area of residence (p = 0.183), marital life (p = 0.651), gestational age (p = 0.595), parity (p = 0.4312), indications for cesarean section (p = 0.1134), or type of cesarean section (p = 0.3915) between the groups. However, a significant difference was found in mean uterine incision closure time (p = 0.03), with Group I having a shorter time. Group I also exhibited a lower mean drop in hemoglobin (p = 0.251) but reported more moderate postoperative pain (p = 0.05) and required additional postoperative analgesia (p = 0.05) compared to Group II. No statistically significant differences were observed in the time for return of bowel sounds (p = 0.531), hospital stay (p = 0.198), surgical site infections (p = 0.554), endomyometritis (p = 0.732), or fever (p = 0.819) between the groups. These findings suggest potential areas for optimizing postoperative pain management in cesarean section patients.*
Conclusion: *The comparative analysis between Group I and Group II revealed no significant disparities in demographic factors, indications, or types of cesarean section. However, Group I exhibited a shorter mean uterine incision closure time and a lower mean drop in hemoglobin compared to Group II. Conversely, Group I experienced a higher incidence of moderate postoperative pain and required more additional postoperative analgesia. Other postoperative variables, including time for return of bowel sounds, hospital stay, and the occurrence of surgical site infections, endomyometritis, and fever, showed no significant differences between the groups. Further exploration is necessary to understand the clinical implications of these findings and to optimize postoperative management strategies.*
Keywords: *Exteriorization, Caesarean Section, Surgical Procedure, Benefits and Risks*

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I. Introduction

Caesarean section is the most common intraperitoneal surgical procedure in obstetrics. Though over the years there is a wider recognition of the desire to reduce caesarean section rate, there has being little debate on

the operating technique. Various studies on the technique of performing caesarean section have focused on reducing the operating time, blood loss, wound infection and cost with improved anaesthesia, availability of effective antibacterial agents, blood transfusion facilities and improved surgical techniques have made caesarean section safer than before. Being the most commonly performed operation in obstetrics, the obstetrician should be familiar with the basics of the procedure as well as recent innovations of techniques relying on evidence based medicine. The incidence varies worldwide between 3 to 31%. In England in 2003-2004, 23% of all babies were born by caesarean delivery, which was an increase from 15% in 1993-1994.Similar trends are seen in figures from the United States (31% in 2006) and Australia (29% in 2004). Numerous different surgical techniques for caesarean section delivery have been described, and the debate about the optimal caesarean technique to minimize surgical morbidity is ongoing. The blood loss at time of caesarean section is approximately ranging between 600 and 1000 millilitres. The amount of blood loss is influenced by a number of factors including the uterine size, presence of leiomyomata uteri, obesity, and location of the uterine incision, the time of repair, the location of the placenta, presence of infection, intra-operative complications and the efficiency of the medical provider. Since haemorrhage continues to be one of the greatest cause of maternal death in the world so reduction of blood loss during the operation could have a significant impact on overall maternal health.

II. Material And Method

The present study is a prospective observational Study was carried out in the Department of obstetrics and gynaecology in Dr B R Ambedkar Medical College and Hospital. The study is conducted on 200 patients.

Study design: Prospective observational Study.

Study location: The present study was carried out in the Department of Obstetrics and Gynecology, Dr. B. R. Ambedkar Medical College and Hospital.

Study duration: The study was carried out from October2022 to September2023.

Sample size: The study was carried out from October2022 to September2023.

Inclusion criteria:
- Patients with previous LSCS (one or more).
- Patients with singleton pregnancy.
- Patients with elective or emergency LSCS.
- Whether booked cases or unbooked cases.
- Patients with term or preterm gestational age.
- Patients with the foetus is alive or dead.
- Patients with ruptured or unruptured membranes.
- Patients willing to give consent.
- Patients willing to participate.

Exclusion criteria:
- Patients with multiple pregnancies.
- Patients with classical caesarean section.
- Patients with all medical disorders (diabetes in pregnancy, hypertension, heart disease, renal disease in the mother).
- Patients who were not willing to give consent.
- Patients not willing to participate.

Statistical analysis

The collected data was entered into Microsoft Excel Worksheet-2010 and data was taken into IBM SPSS Statistic for windows, version 24 (IBM Corp., Armonk, N.Y., USA) software for calculation of frequency, percentage, mean, standard deviation and probability value.

Qualitative data was represented in the form of frequency and percentage.
- Association between qualitative variables was assessed by Chi Square test with continuity correction for 2 x 2 tables and
- Fisher's exact test for all 2 x 2 tables, where P value of chi square test was not valid due to small counts.

Quantitative data was represented using mean and standard deviation.

- Analysis of quantitative data within the groups was done using paired t test if data passes 'Normality test'.
- One Way Analysis (ANOVA) was used to compare more than two groups.
- A 'P' value of <0.05 was considered statistically significant.

III. Results

The table 1 the below table gives data on distribution of study subjects based on their gestational age.

Majority subjects in group I were found in the gestational age of 37 to 40 weeks, i.e., 30 subjects (60%); followed by 18 subjects (36%) in the gestational age of 41 to 42 weeks and finally 2 subjects (4%) in the gestational age of ≥42 weeks.

Majority subjects in group II were found in the gestational age of 37 to 40 weeks, i.e., 32 subjects (64%); followed by 14 subjects (28%) in the gestational age of 41 to 42 weeks and finally 4 subjects (8%) in the gestational age of ≥ 42 weeks.

The p-value calculated was 0.595 indicating no statistical difference in the gestational age wise distribution of subjects.

Table No 01. Distribution of subjects based on their gestational age.

Gestational age (Weeks)	Group I	Group II	P value
37 to 40	30 (60%)	32(64%)	
41 to 42	18(36%)	14(28%)	0.595
≥42	2(4%)	4(8%)	
Total	50(100%)	50(100%)	

The above table gives data on distribution of study subjects based on their gestational age.

Majority subjects in group I were found in the gestational age of 37 to 40 weeks, i.e., 30 subjects (60%); followed by 18 subjects (36%) in the gestational age of 41 to 42 weeks and finally 2 subjects (4%) in the gestational age of ≥42 weeks.

Majority subjects in group II were found in the gestational age of 37 to 40 weeks, i.e., 32 subjects (64%); followed by 14 subjects (28%) in the gestational age of 41 to 42 weeks and finally 4 subjects (8%) in the gestational age of ≥ 42 weeks.

The p-value calculated was 0.595 indicating no statistical difference in the gestational age wise distribution of subjects.

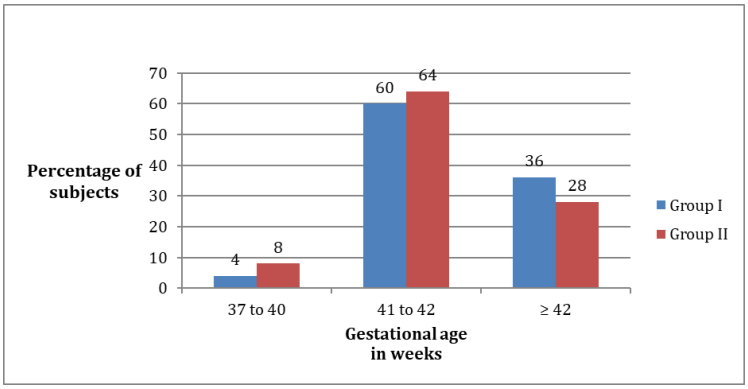

Table No 02. Distribution of subjects based on their parity.

Parity	Group I N%	Group II N%	P value
Nulliparous	28(56%)	30(60%)	
Multiparous	22(44%)	30(40%)	0.4312
Total	50(100%)	50(100%)	

The above table gives data on distribution of study subjects based on their parity.

Majority subjects in group I were found in nulliparous, i.e., 28 subjects (56%); followed by 22 subjects (44%) in multiparous.

Majority subjects in group II were found in nulliparous, i.e., 30 subjects (60%); followed by 20 subjects (40%) in multiparous.

The p-value calculated was 0.4312 indicating no statistical difference in the parity wise distribution of subjects.

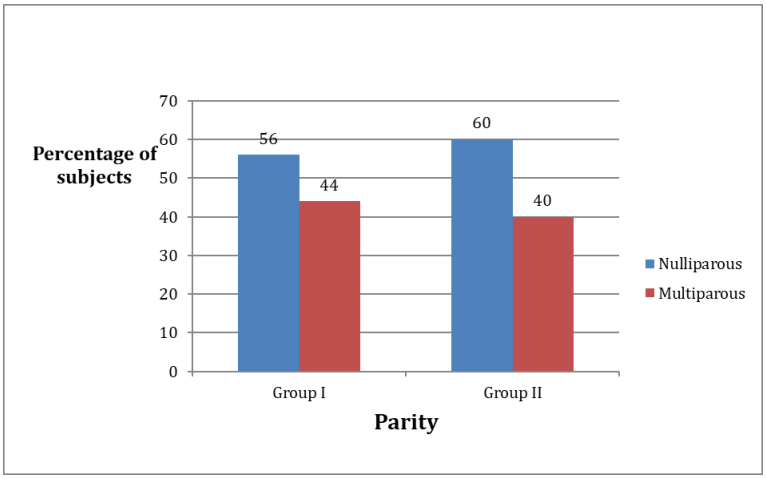

Table No 03- Distribution of subjects based on the indications for cesarean section

Indications for caesarean section	Group I N%	Group II N%	P value
Previous section	14(48%)	26(52%)	
Foetal distress	16(32%)	17(32%)	
Dystocia / Cephalopelvic Disproportion	5(10%)	4(8%)	0.1134
Malpresentation	5(10%)	3(6%)	
Total	50 (100 %)	50 (100 %)	

The above table gives data on distribution of study subjects based on the indications for cesarean section.

Majority subjects in group I had previous cesarean section i.e., 14 subjects (48%); followed by 16 subjects (32%) with foetal distress; 5 subjects (10%) with dystocia / cephalopelvic disproportion and finally 5 subjects (10%) with malpresentation.

Majority subjects in group II had previous cesarean section i.e., 26 subjects (52%); followed by 17 subjects (34%) with foetal distress; 4 subjects (8%) with dystocia / cephalopelvic disproportion and finally 3 subjects (6%) with malpresentation.

The p-value calculated was 0.1134 indicating no statistical difference between the groups in the indications for cesarean section.

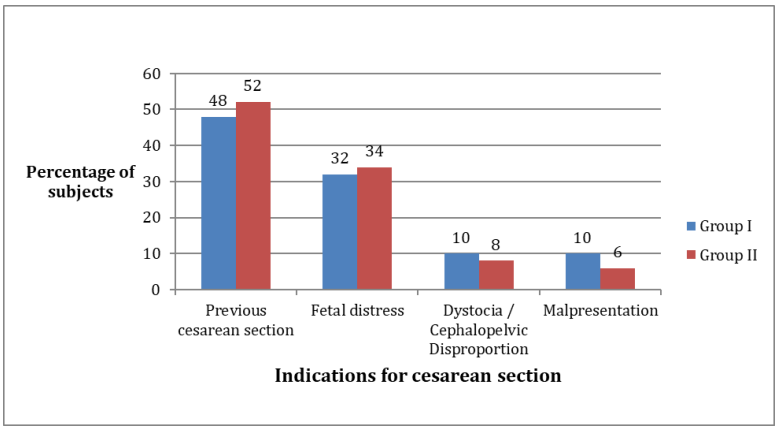

Table No 04. Distribution of subjects based on the type of cesarean section.

Type of cesarean section	Group I N (%)	Group II N (%)	P value
Elective	19(38%)	18(36%)	
Emergency	31(62%)	32(64%)	0.3915
total	50 (100 %)	50 (100 %)	

The above table gives data on distribution of study subjects based on the type of cesarean section.

Majority subjects in group I had emergency cesarean section, i.e., 31 subjects (62%); followed by 19 subjects (38%) with elective cesarean section.

Majority subjects in group II had emergency cesarean section, i.e., 32 subjects (64%); followed by 18 subjects (36%) with elective cesarean section.

The p-value calculated was 0.3915 indicating no statistical difference in the type of cesarean section.

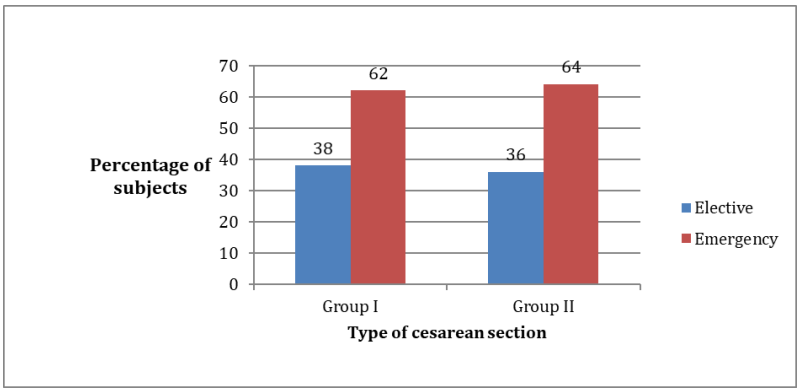

Table No 05-Comparison of mean uterine incision closure time between the groups.

	Group I Mean ± SD	Group II Mean ± SD	P value
Mean uterine incision closure time (minutes)	11.5 ± 2.65	12.8 ± 2.73	0.03

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The above table gives data on mean uterine incision closure time between the groups.

The mean uterine incision closure time of group I subjects was 11.5 ± 2.65 minutes and that of group II subjects was 12.8 ± 2.73 minutes.

The p-value calculated was 0.03 indicating a significant statistical difference between the groups in terms of mean uterine incision closure time. The closure time was lower in Group I subjects comparatively.

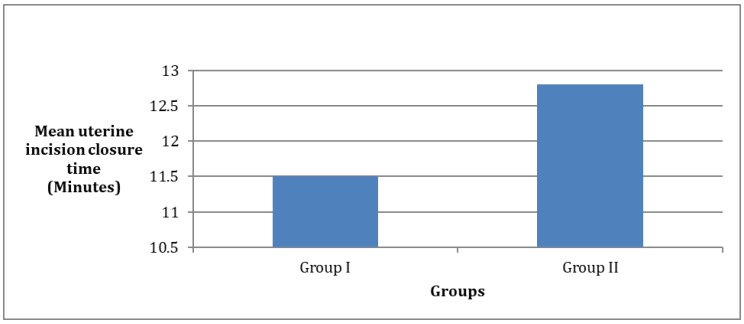


Table No 06. Comparison of mean drop in haemoglobin between the groups.

Mean drop in hemoglobin (g/dL)	Group I N (%)	Group II N (%)	P value
mild	0.31 ± 0.11	0.55 ± 0.11	0.001

The above table gives data on mean drop in hemoglobin between the groups.

The mean drop in hemoglobin the group I subjects was 0.31 ± 0.11 g/dL and that of group II subjects was 0.55 ± 0.11 g/dL.

The p-value calculated was 0.001 indicating a significant statistical difference between the groups in terms of mean drop in haemoglobin. The mean drop in haemoglobin was lower in group I comparatively.

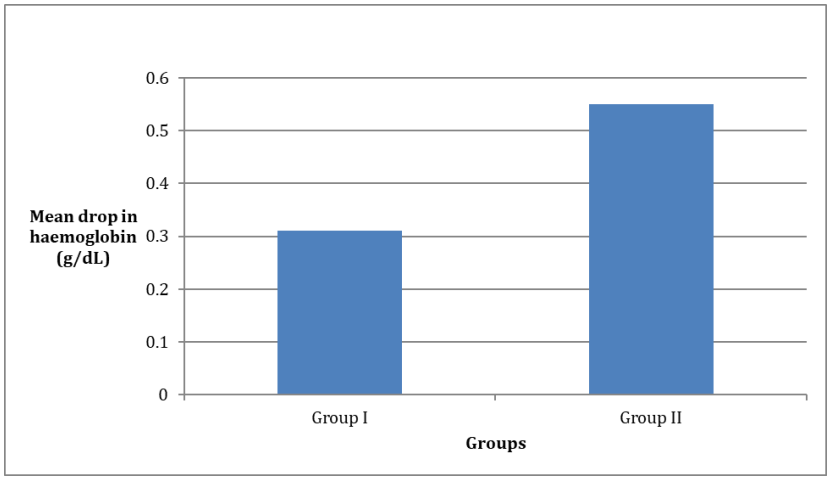


Table 07: Distribution of subjects based on their postoperative pain.

Postoperative Pain	Group I N (%)	Group II N (%)	P value
mild	3 (6%)	2 (4%)	
moderate	16 (32%)	11 (22%)	0.03
severe	6 (12%)	1 (2%)	

The above table gives data on distribution of subjects based on their postoperative pain.

Majority subjects in group I had moderate postoperative pain i.e., 16 subjects (32%); followed by 6 subjects (12%) with severe pain and finally 3 subjects (6%) mild pain.

Majority subjects in group II had moderate postoperative pain i.e., 11 subjects (22%); followed by 2 subjects (4%) with mild pain and finally 3 subjects (6%) severe pain.

The p-value calculated was 0.05 indicating a significant statistical difference between the groups in terms of distribution of subjects based on their postoperative pain. Group I subjects had more pain comparatively.

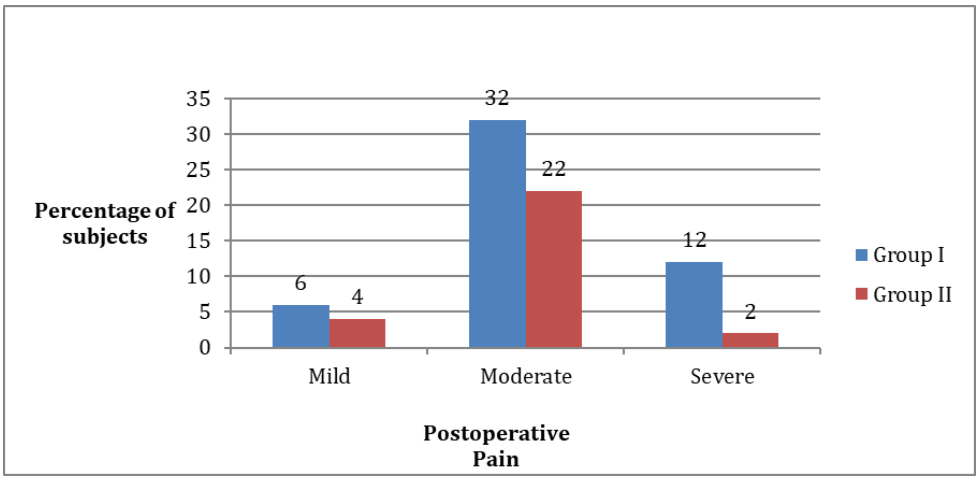


Table No 08. Distribution of subjects based on additional postoperative analgesia requirement.

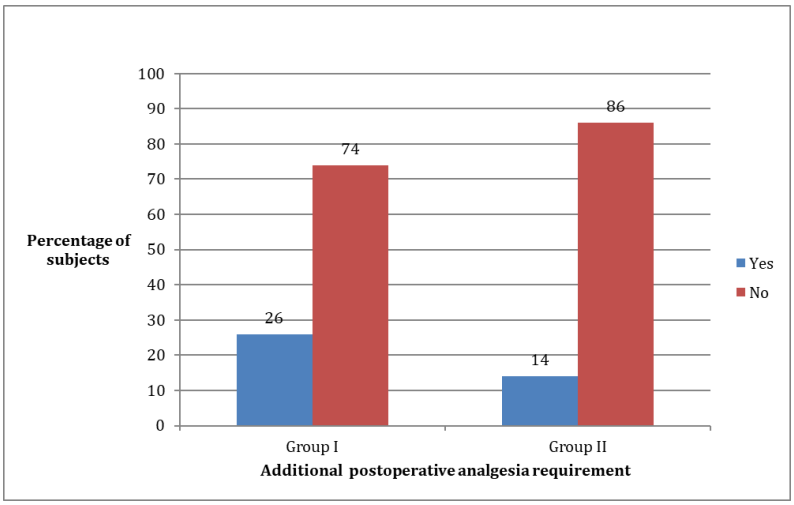
Additional-postoperative analgesia requirement	Group I N (%)	Group II N (%)	P value
Yes	13 (26%)	7 (14%)	
No	37 (74%)	43 (86%)	0.05
Total	50 (100 %)	50 (100 %)	

The above table gives data on distribution of subjects based on the additional postoperative analgesia requirement.

Majority subjects in group I did not require postoperative analgesia, i.e., 37 subjects (74%); followed by 13 subjects (26%) with postoperative analgesia requirement.

Majority subjects in group II did not require postoperative analgesia, i.e., 43 subjects (86%); followed by 7 subjects (14%) with postoperative analgesia requirement.

The p-value calculated was 0.05 indicating a significant statistical difference between the groups in terms of distribution of subjects based on additional postoperative analgesia requirement. Group I subjects required more postoperative analgesia comparatively.



IV. Discussion

The present study summarizes the following points:

Majority subjects in both groups were found in the gestational age of 37 to 40 weeks, i.e., 60% and 64% in group I and II respectively. The p-value calculated was 0.595 indicating no statistical difference in the gestational age wise distribution of subjects.

Majority subjects in both groups were found in nulliparous, i.e., 56% and 60% in group I and II respectively. The p-value calculated was 0.4312 indicating no statistical difference in the parity wise distribution of subjects.

Indications for caesarean section in group I subjects were previous cesarean section (48%) foetal distress (32%); dystocia / cephalopelvic disproportion (10%) and malpresentation (10%) and in group II subjects were previous cesarean section (52%) foetal distress (34%); dystocia / cephalopelvic disproportion (8%) and malpresentation (6%). The p-value calculated was 0.1134 indicating no statistical difference between the groups in the indications for caesarean section.

Majority subjects in both groups had emergency caesarean section, i.e., 62% and 64% in group I and II respectively. The p-value calculated was 0.3915 indicating no statistical difference in the type of caesarean section.

The mean uterine incision closure time of group I subjects was 11.5 ± 2.65 minutes and that of group II subjects was 12.8 ± 2.73 minutes. The p-value calculated was 0.03 indicating a significant statistical difference between the groups in terms of mean uterine incision closure time. The closure time was lower in Group I subjects comparatively.

The mean drop in hemoglobin the group I subjects was 0.31 ± 0.11 g/dL and that of group II subjects was 0.55 ± 0.11 g/dL. The p-value calculated was 0.001 indicating a significant statistical difference between the groups in terms of mean drop in haemoglobin. The mean drop in haemoglobin was lower in group I comparatively.

Majority subjects in both groups had moderate postoperative pain i.e., i.e., 32% and 22% in group I and II respectively. The p-value calculated was 0.05 indicating a significant statistical difference between the groups in terms of distribution of subjects based on their postoperative pain. Group I subjects had more pain comparatively.

Majority subjects in both groups did not require postoperative analgesia, i.e., 74% and 86% in group I and II respectively. The p-value calculated was 0.05 indicating a significant statistical difference between the groups in terms of distribution of subjects based on additional postoperative analgesia requirement. Group I subjects required more postoperative analgesia comparatively.

V. Conclusion

The comparative analysis between exteriorization group and in situ group revealed no significant disparities in demographic factors, indications, or types of caesarean section. Exteriorization of uterus exhibited a shorter mean uterine incision closure time and a lower mean drop in hemoglobin compared to in situ uterine repair. Conversely, subjects with exteriorization of uterus experienced a higher incidence of moderate postoperative pain and required more additional postoperative analgesia. Other postoperative variables, including

time for return of bowel sounds, hospital stay, and the occurrence of surgical site infections, endomyometritis, and fever, showed no significant differences between the groups. Further exploration is necessary to understand the clinical implications of these findings and to optimize postoperative management strategies.

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