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PREVENTION OF POSTOPERATIVE PENILE ERECTION AND PAIN FOLLOWING CIRCUMCISION: A HOSPITAL BASED RETROSPECTIVE STUDY

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[doi: 10.33472/AFJBS.6.11.2024.1015-1023](https://doi.org/10.33472/AFJBS.6.11.2024.1015-1023)**ABSTRACT:**

Background: Painful erections are a postoperative complication of circumcision. **Objectives:** The primary objective of the present study was to evaluate the effectiveness of patient position in inhibiting painful postoperative erections after circumcision. The secondary objective was to evaluate the incidence of side effects with patient position. **Methods:** This was a hospital based comparative study conducted in the Department of General Surgery, Chettinad Academy of Research and Education, Chennai between January and June 2024 among males more than or equal to 16 years of age (up to 60 years of age) with phimosis or balanoposthitis who had undergone circumcision. **Results:** The study included 150 patients divided into three groups: supine position (Group A), right lateral position (Group B), and left lateral position (Group C). Group B had the lowest incidence of erections (22%), compared to Group A (52%) and Group C (70%). This difference was statistically significant ($p < 0.05$). Group B also had the lowest incidence of painful erections (16%), compared to Group A (36%) and Group C (70%). This difference was statistically significant ($p < 0.05$). Group B experienced significantly fewer side effects (10%) than Group A (60%) and Group C (32%) ($p < 0.05$). Group B reported lower VAS scores at all time points postoperatively. At 24 hours, the mean VAS score was 8.8 for Group B, 9.8 for Group A, and 9.7 for Group C. At 48 hours, scores were 6.4 (Group B), 7.0 (Group A), and 6.9 (Group C). At 72 hours, scores were 4.9 (Group B), 5.5 (Group A), and 5.4 (Group C). At one week, scores were 3.1 (Group B), 3.5 (Group A), and 3.4 (Group C). All differences were statistically significant ($p < 0.05$). **Conclusion:** The right lateral position significantly reduces the incidence of postoperative erections and painful erections compared to the supine and left lateral positions.

Keywords: Postoperative penile erection, Pain, Circumcision, India

1. INTRODUCTION

Circumcision, the surgical removal of the foreskin of the penis, is a common procedure performed for various medical, cultural, and religious reasons.(1) Despite its prevalence, circumcision is not without postoperative complications, which can include pain, infections, bleeding, and the occurrence of painful erections during the recovery period.(2) These complications can significantly impact patient comfort and satisfaction, as well as prolong hospital stays and increase healthcare costs. Therefore, optimizing postoperative care to minimize these adverse outcomes is crucial.

One potential strategy for improving postoperative outcomes is the use of specific patient positioning during the recovery period. Patient positioning has been extensively studied in various surgical contexts, where it has been shown to influence pain levels, recovery times, and the incidence of complications.(3) For example, certain positions can reduce pressure on surgical sites, improve circulation, and enhance respiratory function, all of which contribute to better recovery outcomes.(4) However, the impact of patient positioning on postoperative complications following circumcision has not been thoroughly investigated.(5)

The mechanism by which patient positioning might influence postoperative erections and associated pain is multifaceted. Postoperative erections, whether spontaneous or nocturnal, can cause significant discomfort and pain, particularly when they occur in the immediate postoperative period.(6) The physical strain on the surgical site during an erection can lead to pain and possibly compromise the surgical repair. Additionally, the position of the patient can affect blood flow and pressure distribution in the pelvic region, which might influence the frequency and severity of erections. Studies in other surgical domains have provided evidence that patient positioning can be an effective tool for managing postoperative pain and preventing complications. For instance, in abdominal surgeries, lateral positions have been associated with reduced pain and faster recovery times due to decreased pressure on the abdominal cavity.(7) Similarly, in orthopedic surgeries, proper positioning is critical for preventing pressure ulcers and ensuring proper alignment, which can significantly affect pain and healing outcomes.(8) Given the potential benefits observed in other surgical areas, it is hypothesized that patient positioning could play a crucial role in managing postoperative erections and pain following circumcision. Specifically, the primary objective of the present study was to evaluate the effectiveness of patient position in inhibiting painful postoperative erections after circumcision. The secondary objective was to evaluate the incidence of side effects with patient position. This study is significant for several reasons. Firstly, it addresses a gap in the literature regarding the role of patient positioning in postoperative care following circumcision. By providing empirical evidence on the effectiveness of different positions, the study aims to inform clinical practice and improve patient outcomes. Secondly, the findings have the potential to enhance postoperative care protocols, reducing the incidence of complications and improving patient comfort. This could lead to shorter hospital stays, lower healthcare costs, and increased patient satisfaction. Finally, the study contributes to the broader understanding of how simple, non-invasive interventions such as patient positioning can have a substantial impact on recovery outcomes in surgical patients.

2. MATERIALS AND METHODS

This was a hospital based comparative study conducted in the inpatient wards of the Department of General Surgery, Chettinad Academy of Research and Education, a tertiary healthcare facility in Chennai, India between January and June 2024. The study was approved by the Institutional Human Ethics Committee (IHEC), Chettinad Academy of Research and Education. The content of Participant Information Sheet (PIS) in local language was provided to the participants (and their attenders) and contents were read to them in their own language to their satisfaction. The participants were enrolled in the study after obtaining written informed consent. All the patients who underwent circumcision in the study period (between January and June 2024); in the Department of General Surgery, Chettinad Academy of Research and Education were enrolled, provided they were males more than or equal to 16 years of age (up to 60 years of age) with phimosis or balanoposthitis. We excluded patients with history of urological disorders, on medications for erectile dysfunction including antidepressants, statins, antihistamines, diuretics and hypertensive medications.

The positions evaluated included supine (Group A), right lateral (Group B), and left lateral (Group C). For the supine position, patients were placed flat on their backs on a standard hospital bed, with their heads supported by a pillow. Arms were positioned at the sides or slightly outwards, and legs were kept straight and uncrossed. Postoperative care involved monitoring the patient's comfort, adjusting pillows or bed settings as necessary, and encouraging slight movements such as bending the knees periodically to prevent stiffness and promote circulation. In the right lateral position, patients were positioned on their right side with a pillow under the head for support. The left leg was slightly bent at the knee and positioned in front of the straight right leg. A small pillow or folded towel was placed between the knees to prevent discomfort and pressure on the hips. Postoperative care included regular checks for proper alignment of the spine and limbs, adjusting pillows as needed to maintain comfort and prevent pressure sores, and encouraging patients to switch to a supine position periodically if discomfort arose. For the left lateral position, patients were positioned on their left side with a pillow under the head. The right leg was slightly bent at the knee and positioned in front of the straight left leg, with a small pillow or folded towel between the knees to prevent discomfort and pressure on the hips. Similar to the right lateral position, postoperative care involved regular checks for proper alignment, adjusting pillows as needed, and encouraging periodic switches to a supine position.

The outcome of interest (erections in the postoperative period) was noted as, patients experiencing or not experiencing erections during the immediate postoperative period (designated as the first week after the operation, or the length of time during which the patient was admitted). Patients experiencing nocturnal, spontaneous, or diminished erections and/or erections caused by stimulation were categorized as experiencing erections. Patients experiencing erections that were painful enough to cause them to take, or want to take, pain medication were further categorized as experiencing painful erections. To quantify the intensity of pain, we used visual analogue scale (VAS) scores (scores ranging between 0 and 10).⁽⁹⁾

The data obtained was manually entered into Microsoft Excel and analysed using Statistical Package for Social Sciences (SPSS) v23. All the categorical variables were summarised using frequencies and percentages. Continuous variables were summarized using mean (standard deviation) and/or median (interquartile range) (based on the results of data normality, tested using Kolmogorov–Smirnov test and the Shapiro–Wilk test). To test for statistical significance, Chi square test or Fisher exact test (for categorical variables) and independent “t” test or Mann Whitney U test (for continuous variables) was used. Statistical significance was considered at p value less than 0.05.

3. RESULTS

The present study included a total of 150 patients undergoing circumcision between January and June 2024 – 50 patients in Group A (supine position); 50 patients in Group B (right lateral position); and 50 patients in Group C (left lateral position).

Baseline characteristics of the study groups: The mean (SD) age of the patients in Group A was 29.3 years (7.3), patients in Group B was 28.2 years (9.1), and that among patients in Group C was 28.4 years (8.5). More than half the patients in Group A (58.0%) were less than 30 years of age; and similarly, more than half the patients in Group B (54.0%) and Group C (56.0%) were less than 30 years of age. Importantly, the test of association showed that the study groups did not vary significantly by age ($p > 0.05$).

Comparison of study groups by outcomes of interest: The results showed that 22.0% patients in Group B (right lateral position) had erections whereas, nearly three fourth patients (70.0%) in Group C (left lateral position) and more than half the patients in Group A (supine position) had erections – the difference in incidence of erections between the study groups (lower in

Group B, in comparison with Groups A and C) was found to be statistically significant ($p < 0.05$). In terms of painful erections, 8 patients (16.0%) in Group B had painful erections; nearly three fourth patients (35, 70.0%) in Group C and 36.0% patients in Group A had painful erections – the difference in incidence of painful erections (lower in Group B, in comparison with Groups A and C) between the study groups was found to be statistically significant ($p < 0.05$).

In terms of side effects, 10.0% patients in Group B had side effects; nearly one third patients (16, 32.0%) in Group C and nearly two third patients (30, 60.0%) in Group A had side effects – the difference in incidence of side effects (lower in Group B, in comparison with Groups A and C) between the study groups was found to be statistically significant ($p < 0.05$).

The mean (SD) visual analogue scale (VAS) scores at 24 hours in Group B was 8.8 (0.7), Group A was 9.8 (0.9), and in Group C was 9.7 (0.9); at 48 hours in Group B was 6.4 (0.4), Group A was 7.0 (0.5), and in Group C was 6.9 (0.5); at 72 hours in Group B was 4.9 (0.7), Group A was 5.5 (0.3), and in Group C was 5.4 (0.3); at 1 week in Group B was 3.1 (0.6), Group A was 3.5 (0.7) and in Group C was 3.4 (0.7). The lower VAS scores observed in Group B, in comparison with Groups A and C were statistically significant at all timepoints ($p < 0.05$).

4. DISCUSSION

The findings from this hospital-based comparative study provide significant insights into the role of patient positioning in managing postoperative complications, particularly painful erections, following circumcision. This study evaluated the effectiveness of three different patient positions (supine, right lateral, and left lateral) in preventing postoperative erections and associated pain. The results demonstrated a statistically significant difference in the incidence of postoperative erections among the three groups. Patients in the right lateral position (Group B) had the lowest incidence of erections (22%), while those in the supine (Group A) and left lateral positions (Group C) experienced considerably higher rates of erections (52% and 70%, respectively). This finding suggests that the right lateral position may be more effective in inhibiting postoperative erections compared to the other positions.(10)

Similarly, the incidence of painful erections followed the same trend, with the right lateral position resulting in the fewest cases (16%), while the supine and left lateral positions had higher incidences (36% and 70%, respectively). The significant reduction in painful erections in the right lateral position underscores its potential as a preferred postoperative position to enhance patient comfort and reduce the need for additional pain management. The relationship between patient positioning and postoperative complications has been explored in various surgical contexts. However, specific studies focusing on postoperative erections following circumcision are limited. Our study aligns with general findings from other surgical disciplines where patient positioning has been shown to influence postoperative outcomes, including pain and complication rates.(11) For instance, studies in abdominal and orthopedic surgeries have indicated that lateral positions can reduce pressure on certain body parts, thereby decreasing discomfort and the risk of complications such as pressure ulcers and pain.(12-14) Our findings extend these observations to the domain of postoperative care in circumcision, highlighting that the right lateral position can significantly mitigate the risk of postoperative erections and associated pain.

The mechanisms underlying the effectiveness of the right lateral position in reducing postoperative erections may relate to several factors. Firstly, this position might reduce pelvic congestion and pressure on the genital area, thereby decreasing the likelihood of spontaneous or nocturnal erections.(15) Additionally, the right lateral position might influence the autonomic nervous system differently than the supine or left lateral positions, leading to reduced stimuli that trigger erections.(16) From a clinical perspective, these findings are highly

relevant. Managing postoperative pain and discomfort is a critical aspect of patient care, and the ability to reduce painful erections through simple positional adjustments can significantly improve patient outcomes. Healthcare providers should consider adopting the right lateral position as a standard postoperative care practice for patients undergoing circumcision.

The study revealed that patients in Group B experienced significantly fewer side effects (10%) compared to those in Groups A (60%) and C (32%). This indicates that the right lateral position may reduce the risk of postoperative complications more effectively than the other positions. This aligns with existing literature suggesting that certain body positions can mitigate postoperative complications by enhancing circulation, reducing pressure points, and promoting better recovery conditions. The VAS scores for pain assessment provided critical insights into patient comfort and recovery. At all measured time points (24, 48, and 72 hours, and one week postoperatively), patients in Group B reported significantly lower pain scores compared to those in Groups A and C. Specifically, the mean VAS scores at 24 hours were 8.8 (Group B) versus 9.8 (Group A) and 9.7 (Group C), and these differences remained significant throughout the postoperative period. Lower pain scores in the right lateral position could be attributed to better pain management due to reduced pressure on the surgical site and more comfortable positioning, which potentially minimizes the likelihood of tension and stress on the affected area.(17)

Despite its strengths, this study has limitations. It was conducted at a single centre, which may limit the generalizability of the findings. Additionally, the study did not assess long-term outcomes beyond the first week postoperatively. Future research should aim to replicate these findings in larger, multicentre studies with longer follow-up periods. Further studies could also explore the physiological mechanisms in more detail, using advanced imaging and monitoring techniques to understand how different positions impact pelvic blood flow and autonomic nervous system activity during the postoperative period.

5. CONCLUSION

This hospital-based comparative study assessed the impact of patient positioning on postoperative outcomes following circumcision, with a particular focus on preventing postoperative erections, painful erections, and associated side effects. The study demonstrated that the right lateral position significantly reduces the incidence of postoperative erections and painful erections compared to the supine and left lateral positions. Additionally, patients in the right lateral position experienced fewer side effects and reported lower pain levels at all measured time points postoperatively. These findings suggest that the right lateral position can be an effective strategy for improving postoperative care in circumcision patients, leading to enhanced comfort, reduced need for pain management, and fewer complications. The implementation of the right lateral position as a standard postoperative care practice could result in better patient outcomes and potentially lower healthcare costs due to decreased complication rates.

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Table 1: Baseline characteristics of the study participants

		Group A N = 50	Group B N = 50	Group C N = 50	P value
		n (%)	n (%)	n (%)	
Age (in years) <i>Mean (SD)</i>		29.3 (7.3)	28.2 (9.1)	28.4 (8.5)	0.507
Age (in years)	Less than 30	29 (58.0)	27 (54.0)	28 (56.0)	0.687
	≥30	21 (42.0)	23 (46.0)	22 (44.0)	
SD, Standard deviation *Statistically significant at p<0.05					

Table 2: Comparison of study groups by outcomes of interest

		Group A N = 50	Group B N = 50	Group C N = 50	P value
		n (%)	n (%)	n (%)	
Erections	Present	29 (58.0)	11 (22.0)	35 (70.0)	<0.001*
	Absent	21 (42.0)	39 (78.0)	15 (30.0)	
Painful erections	Present	18 (36.0)	8 (16.0)	35 (70.0)	<0.001*
	Absent	32 (64.0)	42 (84.0)	15 (30.0)	
Side effects	Present	30 (60.0)	5 (10.0)	16 (32.0)	<0.001*
	Absent	20 (40.0)	45 (90.0)	34 (68.0)	

*Statistically significant at p<0.05

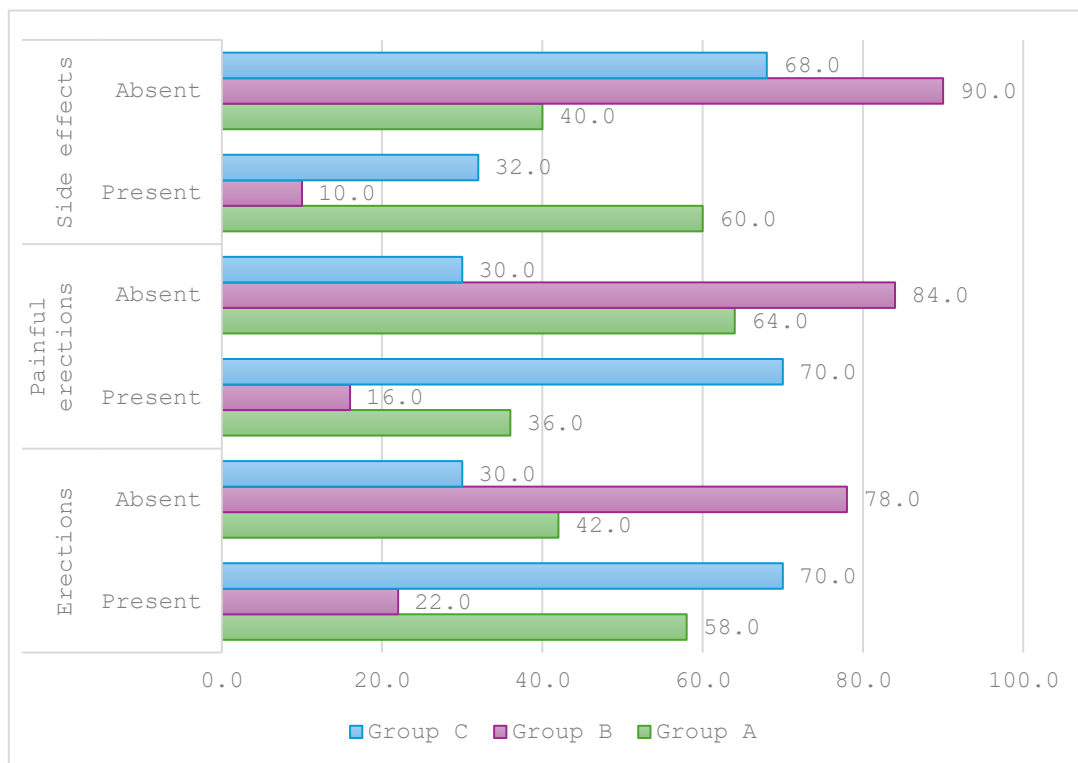


Figure 1: Comparison of study groups by outcomes of interest

Table 3: Comparison of study groups by visual analogue scale (VAS) scores

		Group A N = 50	Group B N = 50	Group C N = 50	P value
		Mean (SD)	Mean (SD)	Mean (SD)	
VAS scores	At 24 hours	9.8 (0.9)	8.8 (0.7)	9.7 (0.9)	<0.001*
	At 48 hours	7.0 (0.5)	6.4 (0.4)	6.9 (0.5)	<0.001*
	At 72 hours	5.5 (0.3)	4.9 (0.7)	5.4 (0.3)	0.001*
	At 1 week	3.5 (0.7)	3.1 (0.6)	3.4 (0.7)	0.041*

VAS, Visual analogue scale; SD, Standard deviation
*Statistically significant at p<0.05

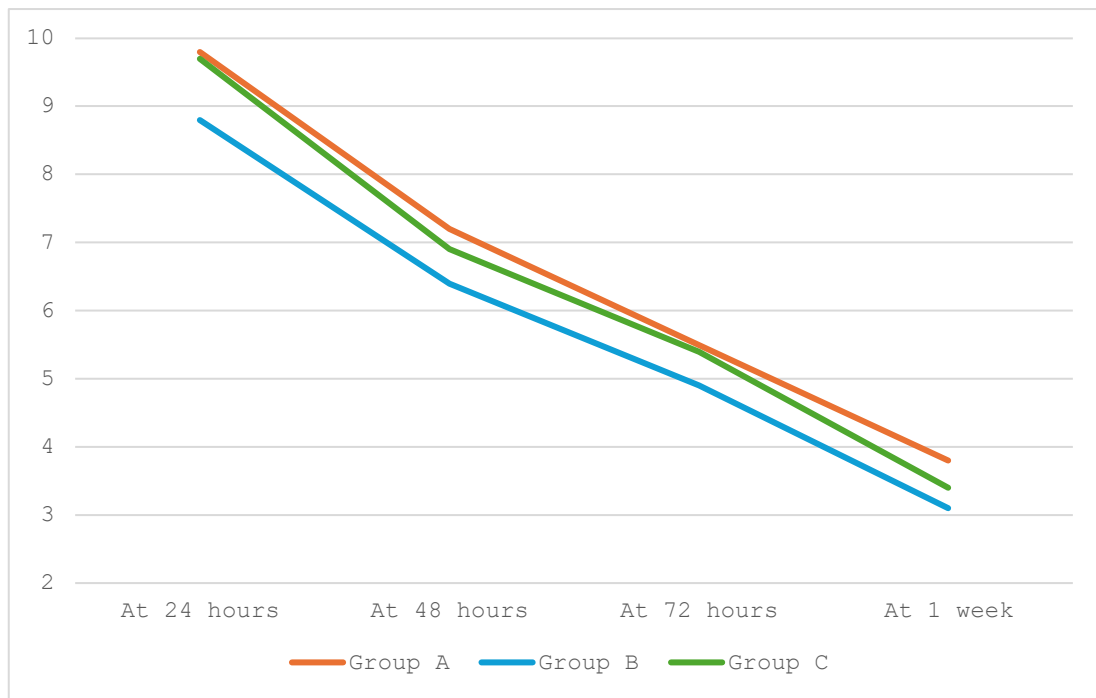


Figure 2: Comparison of study groups by visual analogue scale (VAS) scores