



ORIGINAL ARTICLE

Comparison of sleeve dissection vs plastibell circumcision in terms of operation time and post op complications - A prospective randomized controlled trial.

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ABSTRACT... Objective: To compare sleeve dissection vs plastibell circumcision. **Study Design:** Randomized Control Trial. **Setting:** Department of Surgical Outpatient, Gulab Devi Hospital, Lahore. **Period:** Between July 2021 and July 2022. **Material & Methods:** This study was conducted on 110 children of different ages who presented with uncircumcised phallus for circumcision. They were divided randomly for any of two methods: Sleeve dissection and Plastibell circumcision. The complications which were observed were: bleeding, incomplete circumcision, meatal stenosis and plastibell slippage. **Results:** A total of 110 boys (55 in each group) were operated for circumcision during the study period and were subjected to analysis. The mean age group of babies with plastibell was 2.25 ± 1.32 months as compared to sleeve dissection 2.87 ± 1.67 months and P-Value was found to be (0.034). The mean procedural time of babies with plastibell was 9.94 ± 3.22 minutes as compared to sleeve dissection 13.1 ± 3.07 minutes and P-Value was obtained as (0.000). Overall complication rate was 10.9% in plastibell technique while 14.5% complication rate was present in sleeve dissection technique with a P-value (0.388). **Conclusion:** As Plastibell circumcision has less rate of complication so Plastibell circumcision is considered safer and less time consuming as compared to Sleeve dissection circumcision.

Key words: Circumcision, Plasibell, Sleeve Dissection.

INTRODUCTION

Circumcision is a procedure in which foreskin is removed surgically which is the fold of skin that covers penis at tip.¹ It is the oldest and most frequently performed surgical procedure worldwide.² The practice of circumcision dates back thousands of years and has cultural, religious, and medical significance in various societies.³

Circumcision can be performed on newborns, infants, children, and adults. It is typically done for religious or cultural reasons, such as in the Jewish and Islamic traditions, where it is considered a religious obligation for males. In addition to religious and cultural reasons, circumcision is also performed for medical purposes. It may be recommended to treat certain conditions, such as phimosis.⁴

There are several techniques for performing circumcision, and the choice of technique may depend on factors such as the age of the patient, the healthcare provider's experience, cultural preferences, and the medical indications for the procedure. Here are some common techniques of circumcision:

1. **Plastibell Circumcision:** This technique involves using a plastic ring (the Plastibell) placed over the glans to guide the removal of the foreskin. The excess foreskin is then cut, and the Plastibell is left in place to act as a clamp until the foreskin sloughs off over time.
2. **Gomco Clamp Circumcision:** The Gomco clamp is a metal device that is used to secure the foreskin. The excess foreskin is pulled through a slit in the clamp, and the clamp is tightened to remove the foreskin. The Gomco

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- clamp remains in place for a short period to control bleeding before being removed.
3. Mogen Clamp Circumcision: Similar to the Gomco clamp, the Mogen clamp is another metal device used to secure the foreskin. The clamp is applied, and the foreskin is removed with a scalpel blade before the clamp is released.
 4. Plastibell and Shield Technique: This technique combines the use of the Plastibell with the application of a plastic shield, which helps protect the glans during the procedure and assists in the removal of the foreskin.
 5. Shang Ring Circumcision: The Shang Ring is a plastic device that is applied to the penis, trapping the excess foreskin. A special clamp is used to cut the foreskin outside of the ring, and then the ring remains in place until the foreskin is removed.
 6. Freehand Circumcision/Sleeve dissection Circumcision: In this technique, the circumcision is performed without the use of any specialized devices or clamps. The surgeon directly cuts and removes the excess foreskin using a scalpel or surgical scissors.
 7. Laser Circumcision: Some healthcare providers use laser technology to perform circumcision. The laser is used to cut and remove the foreskin, with the potential benefit of reduced bleeding.

Out of these Sleeve dissection and Plastibell circumcision are common methods of circumcision performed on infants and young children.⁵ Both of these procedure have their benefits and complications. Regarding technique Classical method is frequently applied method and most of surgeons performing it are well aware of procedure while plastibell method as it is relatively newer so sometimes it is difficult for some surgeons to perform.⁶ Any procedure has great importance of duration of procedure either it is performed in local or general anesthesia. Most of studies has proven that Plastibell method is easy and quick method to perform when in expert hands.⁷ Both procedures have their complication rates. Bleeding, Infection, excessive skin removal, post circumcision skin adhesions with glans and meatal stenosis are well known complications

associated with both these procedure.⁸ Out of these bleeding incidene is lower with Plastibell method.⁹

In some cases, the plastic ring used in the procedure may not fall off as expected in form of plastibell retention, leading to prolonged discomfort and the need for its removal by a healthcare professional.¹⁰ While unsatisfactory cosmetic outcome and scaring are associated with sleeve dissection method.¹¹

It's important to note that the decision to undergo circumcision should be based on informed consent, cultural or religious considerations, and medical advice. Both methods have their pros and cons. So purpose of our study was to compare the two most commonly used methods of circumcision in terms of procedure time and complications so that surgeons can make better choice for performing either method for circumcision.

MATERIAL & METHODS

This study was performed on 110 children of different ages who presented with uncircumcised phallus for circumcision in Surgical outpatient department of Gulab Devi Hospital, Lahore, between July 2021 and July 2022 after approval from institutional Review Board (ADMIN/GDEC/424/18). Informed consent was taken from parents of children.

They were divided randomly to any of two methods: Sleeve dissection and Plastbell circumcision. The patients who were aged range between 1 months to 6 months were enrolled and operated under local anesthesia. After aseptic measures, dorsal penile nerve block was given with 0.2 ml/kg of 2% lidocaine. Three minutes were allowed to pass after administration of anesthesia. In Plastibell method, slit was made and a plastibell of sizes from 1.2 to 1.7 were placed over the glans and under the foreskin. Suture was tied around the whole foreskin. This foreskin would fall off after necrosis within few days. In sleeve dissection group dissection was done and sutures were placed. This dissection was done with a circumferential incision along the

coronal sulcus and foreskin was retracted which exposed the glans. A second circumferential incision was made 1.5 cm proximal to the coronal sulcus. The foreskin was excised, vessels were ligated and the wound was closed using chromic catgut 4/0. Dressing was not applied in Plastibell method. In sleeve dissection mild compress dressing was done to prevent hemorrhage. Per operative time was noted for each case. Sitz bath was advised with warm water twice per day to all children. All patients were followed up till the wound was healed.

The complications which were observed were: bleeding, incomplete circumcision, meatal stenosis and plastibell slippage. Data were analyzed by SPSS 23. A P-value of <0.05 was considered a statistically significant difference. The frequency of complications between two groups was assessed by chi-square test, while operative time required for these two procedures was assessed by t test.

RESULTS

A total of 110 boys (55 in each group) were operated for circumcision during the study period and were subjected to analysis. Age wise distribution of cases in both groups is shown in Table-I.

The mean age group of babies with plastibell was 2.25 ± 1.32 months as compared to sleeve dissection 2.87 ± 1.67 months and P-Value was found to be (0.034) which was statistically significant.

The mean procedural time of babies with plastibell was 9.94 ± 3.22 minutes as compared to sleeve dissection 13.1 ± 3.07 minutes so mean time of operation for sleeve dissection was more than plastibell method and P-Value was obtained as (0.000) which is strongly significant.

The mean blood loss of babies with plastibell was 7.05 ± 15.32 ml as compared to sleeve dissection 8.96 ± 2.51 ml and P-Value found to be (0.364) which has no significant statistic value.

The mean healing times of babies with plastibell was 6.47 ± 1.30 days as compared to sleeve

dissection 6.72 ± 1.56 months and P-Value was (0.357) which is almost equal for both groups.

Overall complication rate was 10.9% in plastibell technique while 14.5% complication rate was present in sleeve dissection technique with a P-value (0.388) So Plastibell has less rate of complication as compared to sleeve dissection.

Only 1.81% babies developed post operative bleed in plastibell group as compared to 14.5% in sleeve dissection group with a P-value of (0.016) which is statistically significant.

Incomplete circumcision was only complication associated with the plastibell technique (5.45%) and P-Value was (0.122).

Meatal stenosis was seen only in sleeve dissection technique (1.81%) with a P-value of (0.500).

		Type of Procedure		Total
		Plastibell Circumcision	Sleeve Dissection Circumcision	
Age in months	1	16	19	35
	2	10	17	27
	3	12	11	23
	4	3	5	8
	5	10	0	10
	6	4	3	7
Total		55	55	110

Table-I. Age wise distribution of cases in both groups

DISCUSSION

Total of 110 patients were enrolled in our study with age range from 1-6 months and all procedures were performed in the local anesthesia to minimize the associated confounding factors affecting time of operation and Complication rate. Our this practice was in accordance of international protocols.¹²

Though using same age e.g; six months in plastibell method was seems to be difficult because of availability of sizes of circumcision in the market but we did not face any difficulty while performing the procedure by this method because of accommodative phallus size of children presented to us.

Procedural time of babies with plastibell was 9.94 ± 3.22 minutes as compared to sleeve dissection 13.1 ± 3.07 minutes so mean time of operation for sleeve dissection was more than plastibell method and P-Value was obtained as (0.000) which is strongly significant. This finding is consistent with other studies in literature.¹³

The mean blood loss of babies with plastibell was 7.05 ± 15.32 ml as compared to sleeve dissection 8.96 ± 2.51 ml and P-Value found to be (0.364) which has no significant statistic value and this variable for both groups came out with the same results.

Healing time is always a matter of concern for the parents while proceeding for circumcision of their children and in our study mean healing times of babies with plastibell was 6.47 ± 1.30 days as compared to sleeve dissection 6.72 ± 1.56 months and P-Value was (0.357) which is almost equal for both groups. So satisfaction rate according to this was same in both groups.

So plastibell found to be more safe and less time consuming as overall complication rate was 10.9% in plastibell technique while 14.5% complication rate was present in sleeve dissection technique with a P-value (0.388) Though statistically it could not be proven because of small sample size. So multicenter studies with larger sample size and systemic reviews and meta-analysis are needed to further elaborate these findings.

CONCLUSION






As Plastibell circumcision has less rate of complication so Plastibell circumcision is considered more safe and less time consuming as compared to Sleeve dissection circumcision. It can be safely performed by an expert surgeon in better way with minimum complications and more satisfaction of parents.

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AUTHORSHIP AND CONTRIBUTION DECLARATION

No.	Author(s) Full Name	Contribution to the paper	Author(s) Signature
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2	Mian Umar Javed	Drafting, Revision, Statistical analysis.	
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