

## A Retrospective Observational Study to Compare the Efficacy between Dorsal Slit Technique and Sleeve Technique for Circumcision Performed At BMC Sagar

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### Abstract:

**Introduction:** Circumcision is the commonly performed surgical procedure. It can be done via several techniques. Dorsal slit technique is the most commonly used procedure. The sleeve technique introduced later on which helps in preventing common complications of open technique for male circumcision.

**Objective:** Our aim in this study is to assess the efficacy between dorsal slit technique and sleeve technique for circumcision.

**Methods:** A total of 80 patients were studied out of which 40 patients underwent dorsal slit technique and 40 patients underwent sleeve technique the outcomes were measured in terms of post-operative pain, post-operative edema, cosmetic outcomes and duration of hospital stay.

**Results:** 80 subjects were enrolled. Circumcision via dorsal slit technique had no significant difference from sleeve technique In terms of surgical site infection, none observed in any case. On the other hand, sleeve technique resulted in better outcome in terms of post-operative pain, post-operative edema, cosmetic outcomes and duration of hospital stay.

**Conclusion:** Sleeve technique in circumcision has an over dorsal slit technique since it results in reduced post-operative pain, better cosmetic outcome, reduced duration of hospital stay. Thus, it may emerge as a better alternative to improve patient outcome.

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### Introduction

Circumcision is a common surgical operation in pediatric surgical practice. Circumcision is the surgical excision of the long preputial skin to expose the glans penis and the corona glandis.

The most common indications are religious reasons and sometimes also used for medical reasons. Religious circumcision is commonly performed in Muslims, Black Africans, Australian aborigines, and other ethnic groups in different parts of the world. In Western societies, circumcision is mostly performed for medical reasons, the most common of which is phimosis. The historical records and archeological evidence date the practice back to ancient Egyptians in the 23<sup>rd</sup> century BC In Israel, neonatal male circumcision is routine practice. According to Jewish law, circumcision is the physical representation of the covenant between God and Abraham described in the Old Testament and is required for the inclusion of males in the Jewish faith.

Newborn boys are circumcised in a traditional ceremony called a brit milah, where the foreskin of the penis is removed by a religious figure, known as a mohel, on the 8th day after birth. Most mohelim are not medically trained, although training and certification is available through the Israel Ministry of Health [2]. The procedure is performed as a celebratory event, in clean but not sterile conditions, and often in the presence of family and friends. Circumcision can be done via several techniques. Dorsal slit and sleeve technique are among the most popular one. For Dorsal Slit Technique- Two artery forceps are applied on 11 o'clock and 1 o'clock positions of prepuccial skin. Prepuccial skin is crushed at 12 o'clock position. Dorsal slit is made at 12 o'clock position, extending just proximal to corona. Slit is extended downwards and laterally on either side till frenulum. Frenular artery is tied with figure of 8 stitch. Edges are pulled together, and stitches taken

with 4-0 vicryl/ chromic on cutting needle. The wound is first covered with Jelonet (a gauze lubricated generously with petroleum jelly) and finally by a clean gauze on top of it.

For Sleeve Technique - A circumferential incision is made on the inner prepuce skin leaving a sleeve of 0.25-0.5cm proximal to corona. Prepuce is returned over the glans penis. With slight traction on the prepuce, another circumferential incision is made over penile skin just proximal to corona. A longitudinal cut is made between the two circumferential cuts and strip of skin was removed. Any bleeding during the procedure is stopped with the use of bipolar diathermy. Both Edges are pulled together, and stitches taken with 4-0 vicryl/ chromic on cutting needle. The wound is first covered with Jelonet (a gauze lubricated generously with petroleum jelly) and finally by a clean gauze on top of it.

The aim in this study is to assess the efficacy between dorsal slit technique and sleeve technique for circumcision, in terms of post-operative pain, post-operative edema, cosmetic outcomes and duration of hospital stay.

#### Materials and Methods

In this retrospective observational, single-center study undertaken at General Surgery Department of Bundelkhand Medical College, Sagar, a total of 80 patients undergoing circumcision were studied. This study was performed in Bundelkhand Medical College, Sagar, from June 2022 to May 2023. Ethical approval was obtained from the hospital review committee before conducting the study.

Inclusion criteria were 1) Age group: 15 yrs to 30 years 2) Patients with intact prepuce requiring circumcision for religious or cultural reasons. 3)

Medical indications for circumcision such as phimosis, paraphimosis, and balanoprophitis. Following counselling with a member of the research team and provision of written patient information relating to the study prospective, signed informed consent was obtained from each patient before inclusion.

Exclusion criteria included: 1)Hypospadias 2)Bleeding Disorders 3) Buried penis, 4)any patient incapable of providing informed consent, and 5)those unable to commit to the medical follow-up of the study for geographical, social, or psychological reasons.

The patients were divided into two groups Dorsal slit technique group and sleeve technique group A (Dorsal slit technique group) and group B (Sleeve technique group)

The outcomes were measured in terms of

- post-operative pain,
- post-operative edema ,
- cosmetic outcomes
- Duration of hospital stay.

Data was entered in password-protected Microsoft Excel software and the outcome in terms of visual analogue scale (for post-operative pain), post-operative pain, post-operative edema, cosmetic outcomes duration of hospital stay was calculated and compared

#### Results and Discussion

Study to compare the efficacy of Dorsal slit technique versus Sleeve technique for circumcision was carried out for 80 subjects. Circumcision via dorsal slit technique had no significant difference from sleeve technique In terms of surgical site infection, none observed in any case.

**Table 1: Visual Analogue Scale Scoring For Post-Operative Pain in Study Subjects**

VAS	Dorsal Slit Technique	Sleeve Technique
0	18 (22.5%)	20 (25%)
1-3	10 (12.5%)	16 (20%)
4-6	7 (8.75%)	3 (3.75%)
7-9	5 (6.25%)	1 (1.25%)
10	0 (0%)	0 (0%)
	40 (50%)	40 (50%)

Post-operative pain was less in sleeve technique in comparison to Dorsal slit technique as assessed by Visual Analogue Scale. Post-operative edema in cases of sleeve technique was less as compared to dorsal slit technique. Cosmetic outcome was better in sleeve technique.

**Table 2: Comparison of Duration of Hospital Stay in Study Subjects**

Duration of Hospital Stay	Dorsal Slit Technique	Sleeve Technique
Days		
0-1	10 (12.5%)	16 (20%)
1-3	25 (31.25%)	23 (28.75%)
>3	5 (6.25%)	1 (1.25%)
	40 (50%)	40 (50%)

Average duration of Hospital Stay was maximum during 1-3 days period in both cases. The percentage of patients being discharged within 1 day was higher in sleeve technique (20%) than in dorsal slit technique (31.25%). Thus, in terms of outcome, sleeve technique seems to be a promising alternative in circumcision.

### Conclusion

Sleeve technique appears effective in decreasing pain after circumcision. It also results in reduced morbidity in terms of post-operative edema and reduced duration of hospital stay. It is also deemed more promising in cosmetic outcome. Thus, it can be concluded that sleeve technique is more efficacious in circumcision over dorsal slit technique.

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