



## ORIGINAL RESEARCH PAPER

## Surgery

### A PROSPECTIVE RANDOMIZED COMPARISON BETWEEN CONVENTIONAL DORSAL SLIT TECHNIQUE AND MODIFIED DORSAL SLIT TECHNIQUE FOR CIRCUMCISION

**KEY WORDS:** circumcision, dorsal slit technique, open method, operative technique

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#### ABSTRACT

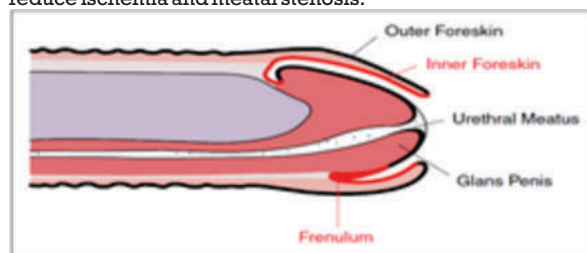
Circumcision is a very common surgical operation practiced in many societies since ancient past for religious purposes. There are several methods and each methods have its merits and demerits. It can be classified into two thereof: conventional circumcision (without devices) and shield and clamp devices. In systematic review of studies done in East and Central Africa, traditional circumcision could result in complications like wound infection, incomplete circumcision requiring re-circumcision and delayed wound healing. WHO recommends open type of conventional surgeries which includes dorsal slit, sleeve resection, use of forceps for guidance and amputation is done. this study was conducted to compare between conventional dorsal slit and modified dorsal slit techniques. ultimate goal of any method of circumcision is that it should be safe and complication free. In terms of intraoperative bleeding, the modified dorsal slit technique have significantly less intraoperative blood loss. In terms of operating time, the conventional dorsal slit technique has significantly lesser time required for surgery. In terms of surgeons compliance from procedure, there was no any significant difference in both the methods. In terms of postoperative pain, the modified dorsal slit with excision of prepuce technique have significantly less postoperative pain and in terms of cosmetic outcome from procedure, there was no any significant difference in both the methods. The modified dorsal slit with excision of prepuce method has advantage of significantly lower blood loss in surgery and significantly less postoperative pain may be due to less rough handling of tissue. There was no any significant difference in both the methods in terms of operating surgeons compliance with procedure, incidents of postoperative bleeding, postoperative urinary retention, postoperative local site oedema and infection rate. We thus recommend modified dorsal slit and excision method for management of circumcision in all cases undergoing circumcision by open method.

#### INTRODUCTION

Circumcision is a very common surgical operation in surgical practice and has been practiced in many societies since ancient past. Historically, male circumcision has been associated with religious practice and ethnic identity. Circumcision was practiced among ancient Semitic peoples, including Egyptians and Jews with the earliest records depicting the practice coming from Egyptian tomb work and wall paintings dating from around 2300 BC.(1)

There are several methods and each of the methods have their merits and demerits. The global prevalence of male circumcision in individuals aged above 15 years is estimated to be about 30-33%. (2) About 70% are estimated to be Muslims living in Asia, Middle East, and North Africa, and non-Muslim male contribute only about 13%.(3) Circumcision methods can be classified into two thereof: conventional circumcision (without devices) and shield and clamp devices.(4)Many of the methods in use today fall into one of these major classes. Shield and clamp adopt the use of the device to effect circumcision obviating the use of knife in majority of cases. Recently studies have shown that not only males who are circumcised have lower risk of HIV infection than those who are not circumcised but also areas with high rate of circumcision have lower prevalence of HIV. (28,31,33) In a study in Uganda it has been shown that the protection rate is 51%-60%. (34) These findings explain why countries with similar HIV risk behaviors have different pattern of HIV prevalence. It has been also found that circumcised males have reduced risk of infecting their female partner with HIV. (31) Both facts discussed above attests to the importance of male circumcision in prevention of this deadly disease. The dorsal slit method of circumcision (DST) is often performed; however, due to traction placed on the skin and mucosa during this process, the frenulum frequently cannot be retained at the mucosal location of 6 o'clock, the frenular

artery is damaged as a result. On the other hand, the frenulum and the anatomical structures of the glans are safeguarded by the modified dorsal slit procedure (MDST). The frenular artery is protected in the modified dorsal slit to provide hemostasis and minimize partial ischemia, which lessens postoperative discomfort and problems and also have more symmetrical excision of preputial skin with less tissue manipulation. In Persad et al (58) study suggested that the preservation of the frenular artery during circumcision would reduce ischemia and meatal stenosis.



Sources: [www.googleimages.com/](http://www.googleimages.com/)

**Figure 1:** Anatomy of prepuce

#### MATERIAL AND METHODS:

This was prospective randomized comparative study. A total of 64 patients participated. Microsoft excel (2021) programme was used for data entry. The quantitative data were calculated by Mean and Standard deviation. It was analysed by independent t-test. The qualitative data were calculated by Proportion and analysed by Chi-square test. Medcalc software was used for data analysis for Mean, Standard deviation, p-value and chi-square test.

#### DISCUSSION

Circumcision in males is a surgical procedure of removing prepuce. Circumcision is performed very routinely. It is said

that 1 out of 4 new born undergoes circumcision. (52) Whichever technique is used for circumcision morbidity should be minimum. Open conventional surgeries include sleeve resection, dorsal slit, forceps guided and guillotine are WHO recommended. It is a time taking procedure as well as painful. It requires suturing.

The device methods of circumcision such as the Plastibell, The Mogen clamp, and the Gomco clamp was meant to avoid glanular and urethra injury. Unfortunately, these injuries still do occur with these methods, especially with the nonexperts. The dorsal slit method requires crushing and division of the inner and the outer preputial layers dorsally. The slit is extended to the corona. This enables the prepuce to be freed completely and then prepuce was excised, under direct vision.

The ultimate goal is that it should be safe and complication free. It should therefore be done by those trained to do it. Where nonexperts are to be involved, they should be trained, certified, and be monitored regularly.

## RESULT

In our study the mean operating time for Dorsal slit technique was 21.73 min with SD of 3.43. In Modified dorsal slit technique, it was 24.60 min with SD of 4.67. On comparing postoperative pain at 6 hours, dorsal slit technique has mean VAS score 3.58 with SD of 0.98 and modified dorsal slit technique has mean VAS score 2.73 with SD of 0.97. which shows a clinically significant difference with the p value of 0.04. ( $p < 0.05$ ). and mean blood loss of patient in conventional dorsal slit and excision technique group is 9.11 ml with SD of 2.03 and mean intraoperative blood loss of patients in modified dorsal slit and excision technique is 6.37 ml with SD of 2.07 with is also statistically significant.

## CONCLUSION

In terms of intraoperative bleeding, the modified dorsal slit technique has significantly less intraoperative blood loss. In terms of operating time, the conventional dorsal slit technique has significantly lesser time required for surgery. In terms of postoperative pain, the modified dorsal slit with excision of prepuce technique have significantly less postoperative pain. There was no any significant difference in both the methods in terms of operating surgeons compliance with procedure, incidents of postoperative bleeding, postoperative urinary retention, postoperative local site oedema, infection rate and patients/parents satisfaction from cosmetic outcome after surgery.

We thus recommend modified dorsal slit and excision method for management of circumcision in all cases undergoing circumcision by open method.

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