

The Shang Ring Technique of Circumcision: A Pilot Study - First in India

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Introduction

Circumcision is the surgical procedure for excision of the penile foreskin [1]. Circumcision was practiced in the ancient times with a history of over 15000 years, dating back to Egyptian mummies and wall reliefs. It has been performed for 5000 years in Africa in the Middle East, it has a slightly more recent history of 3000 years [1].

Presently 15% of all men worldwide are circumcised although it varies in different countries. For instance, the proportion of circumcised men is reported to be 48% in Canada, 24% in England, and 82% white men and 54% of African American men in the USA [1].

Indications of Circumcision

Common indications in accordance to the frequency are phimosis, balanitisxeroticaobliterans(BXO), chronic balanoposthitis, paraphimosis, ammonia dermatitis, penile lymphodema, preputial cysts, redundant foreskin [8].

Neonatal Circumcision Techniques

Besides classical surgical method, three different circumcision clamps have been used in the neonates: Plastibell, Gomco and Mogen clamps [8]. Of these Gomco clamp is most frequently used and it provides a superior cosmetic appearance [8]. Although Plastibell clamp can be easily used, it is not generally preferred due to the requirement of longer stay of the device on penis [7,8].

Most common complications of the conventional circumcision method are hemorrhage (35%), wound infection (10%), meatitis (8-20%), and UTI (2%) [8]. Infrequently, wound gaping, inadequate removal of the foreskin, skin bridges and inclusion cysts, amputation of the glans penis, sepsis, frenulum breve and buried penis are also seen [8].

The Shang Ring

Adult male circumcision (AMC) has reduced the incidence of HIV transmission by 40-60% in sub-Saharan Africa (SSA). The WHO and UNAIDS recommends elective AMC to hyper-endemic communities in SSA [3]. Despite these recommendations, the potential effects of AMC have been marred by low uptake, with only 5% of all such men undergoing the surgery to date [3]. Traditional, time-consuming methods of AMC that require formal surgical training limit the uptake in under developed countries [3]. Training and implementation by non-physician health providers is hampered by the relatively long learning curve. Although many male circumcision devices are available, most of them have

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not gained widespread acceptance due to high complication rates or difficulties with their use [3].

The Shang Ring was invented by Mr. Jian-Zhong Shang, China. Since 2006, it has been used to circumcise over 350,000 males including young boys, adolescents and adults in China [2]. It has shown promising and optimistic results in 5 registered clinical trials (RCT) in Kenya, Zambia and Uganda and has widened the spectrum of available options for safe and voluntary medical male circumcision (VMMC) and facilitate rapid scale-up of male circumcision for HIV prevention in Africa [2]. The simplicity of this procedure has made even non-physician health care providers being able to learn this procedure and to safely perform circumcisions in resource-poor regions in Africa [2].

Working Principles

The foreskin is sandwiched between the inner and outer ring, so there is minimal to no bleeding when the foreskin is cut [2]. Deeper tissues in the surgical area are not exposed, reducing the risk of infection. The coronal sulcus is well exposed, which eliminates the environment for anaerobic bacteria [2].

Features [2]

- Suture-less technique.
- Quick procedure time.
- Minimal to no bleeding.
- Coronary sulcus gets exposed up.
- Frenulum is well preserved.
- Fewer complications.

- Excellent post-circumcision appearance.
- Easy to learn and teach.
- High satisfaction among physician, medical providers and patients [2].

The Procedure

Etiology	No. of pts
Phimosis	3
Balanoposthitis	1
Lichen sclerosus	1

Etiology

Age group (years)	no. of pts
<10	2
10 to 20	1
30 to 40	1
>60	1

We have performed this procedure on 5 patients in our department on a pilot study basis. To understand the feasibility of this procedure among all age groups, we have selected our patients accordingly. Two patients were between 6-10 years of age, one patient of 17 years, one patient of 33 years of age and one patient in his 60s with Lichen sclerosus changes in the preputial skin.

In children the procedure was done under short general anesthesia while in others it was done under local anesthesia (ring block).

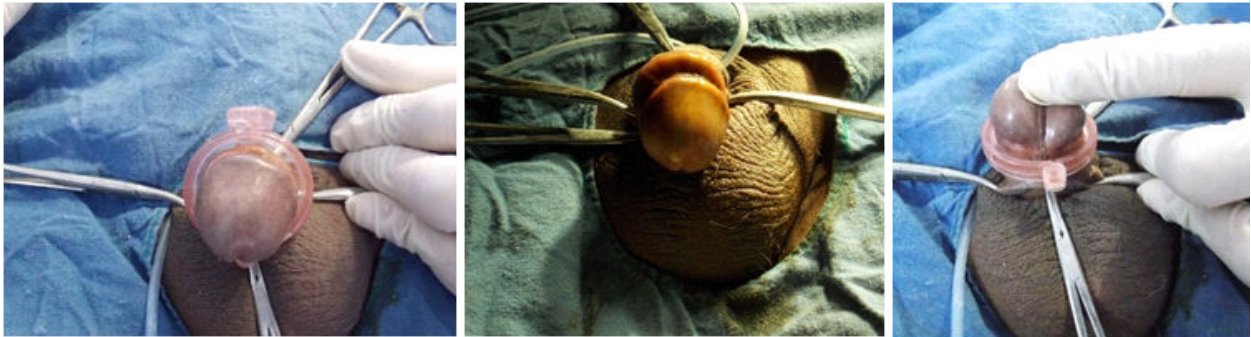
There are two ways of applying the rings around the prepuce- as explained by the illustrations.



A 60years old diabetic patient with phimosis and balanoposthitis.



Placement of the inner ring and eversion of the prepuce over it.



Placement of the outer ring and locking it



Excision of the foreskin - without any bleeding at all.



Look of the Shang Ring in place.



Minimal dressing around the ring.



Day 7



Wound after removal of the ring.



Day 21: Final appearance.

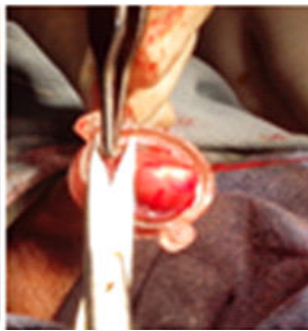
Procedure in a child of 6 years



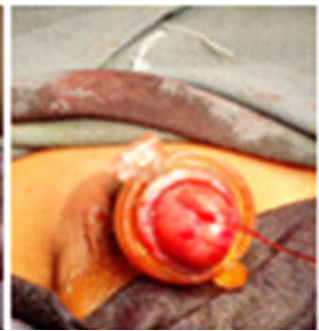
Inner ring placement



Outer ring placement



Excision of the foreskin



Final appearance at 21 day.

The average procedure time was 7-10 minutes and bleeding was minimal. All patients were discharged on the day of procedure, provided with sterile gauze dressings and instructed to change them if they get wet until the first follow-up appointment. Post-operative follow-up was done at one hour after the procedure and on the 3rd, 7th and 21st post-operative days. On day 7 the ring was removed in minor OT without any anesthesia. Antibiotic and analgesic requirement were the same as with conventional circumcision technique. There was no incidence of hemorrhage, slippage of the rings, wound gaping, scarring or poor healing and meatitis. There is no evidence of increased risk of local infection with the Shang Ring. As a result, our patient acceptance was quite high and all the patients were satisfied with the final appearance of the wound at day 21.

Conclusion

The Shang Ring technique is a safe, easy to use, feasible in all age groups, time saving compared to conventional circumcision techniques, easy to learn and teach and highly acceptable among patients [2,3,4,5,6,7].

This pilot study was done to have a firsthand knowledge of the technique which is already popular in China and Africa. Though the technique described by Mr. Shang places the inner ring on outer skin followed by external ring on the inner preputial skin, we have done this by the reverse method also i.e placing the inner ring on the inner preputial skin first followed by the external ring on the outer skin. In our study both the techniques gave identical results. The final result and outcome were similar to the published data available [8]. We further plan to continue this clinical trial to compare the Shang Ring technique to traditional circumcision methods in a larger number of patients.

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