

A Study of the Clinical Profile & Complications in Adults Undergoing Circumcision: An Observational Study

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Abstract: ***Background:** Circumcision is one of the oldest & also one of the most common surgeries performed worldwide. WHO estimates that globally 30% of males aged 15 & above are circumcised, with almost 70% of these being Muslims. Very little data is available on the clinical profile & complications of adults undergoing circumcision. **Method:** This is an observational study carried out between May 2017-Aug 2019 in 118 patients who presented to a tertiary care hospital for circumcision. **Results:** 73% of the patients belonged to age group between 20-39 yrs. 67% of them were married, with a vast majority coming from urban backgroundie 89%. Most common indication for surgery was phimosis seen in about 84% of the patients. And the most common complications seen were pain with edema & hemorrhage seen in 7% & 3% of the patients respectively. **Conclusion:** Circumcision despite being considered a minor surgery, can have multiple complications, most of which can be managed conservatively.*

Keywords: Circumcision, Balanitisxeroticaobliterans (BXO), Erectile Dysfunction (ED), Surgical site infection (SSI)

1. Introduction

Circumcision is one of the oldest surgical procedures known to mankind. It is defined as the excision of foreskin of penis, done for various indications. Most common among indications is the religious indication practiced by the Muslims & Jews, who generally get it done at a young age. Other communities get it done for medical indications like phimosis, balanoposthitis, etc. In certain cases it may be required for cases like cancer penis as well. In the last decade or so, circumcision has been promoted as an important measure for HIV prevention, mainly in African countries with high prevalence of HIV.

In general, circumcision is considered to be one of the minor surgeries. However if not performed with caution, it can rarely lead to disastrous results. Hence in depth knowledge of the pre-op preparation, intra-op surgical steps & complications- both intra-op & post-op is important for a satisfactory outcome.

Most common complications associated with the surgery are bleeding, pain & edema, which generally subside with time. However, other known complications include infections, poor cosmesis, inadequate excision of foreskin, increased or loss of penile-sensitivity, chordee, urethral injury, penile amputation, etc.

In the Indian context, circumcision is seen as an important marker of religious & cultural belief, and very little literature is available about the same. The focus of this study was to study the clinical profile of adult patients undergoing circumcision & the complications associated with it, both in short term and long term, about which the literature remains very sparse. A lot has already been documented about neonatal & paediatric circumcision; hence more focus was laid on adult circumcision & its complications.

2. Material & Methods

This study was an observational descriptive study conducted in a tertiary care teaching hospital in western India between March 2017- August 2019.

Inclusion criteria:-All the patients who underwent circumcision for any indication were included in the study.

Exclusion criteria:-Patients who were less than 20 years of age, non-consenting patients.

Prior informed consent for inclusion into the study and follow-up was taken from all the participants. All the data of patients was compiled and analysed with respect to different variables e.g.

1. Clinical profile – age, indication for surgery, socioeconomic status, etc
2. Complications- both early & late

3. Results

Of 118 cases studied, 42 (35.6%) had age between 20 – 29 years, 31 (26.3%) had age between 30 – 39 years, 12 (10.2%) had age between 40 – 49 years, 12 (10.2%) had age between 50 – 59 years, 13 (11.0%) had age between 60 – 69 years and 8 (6.8%) had age above 70 years. Mean \pm SD of age of cases studied in the entire study group was 39.9 ± 16.5 years and the minimum – maximum age range was 20 – 84 years.

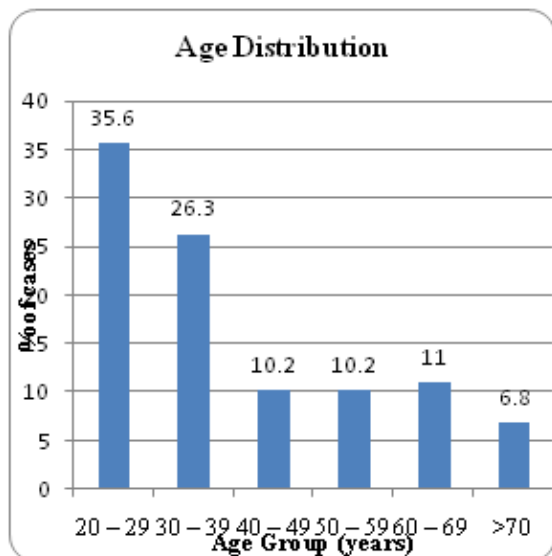


Figure 1: Age distribution

Of 118 cases studied, 13 (11.0%) had rural residence and 105 (89.0%) had urban residence in the study group.

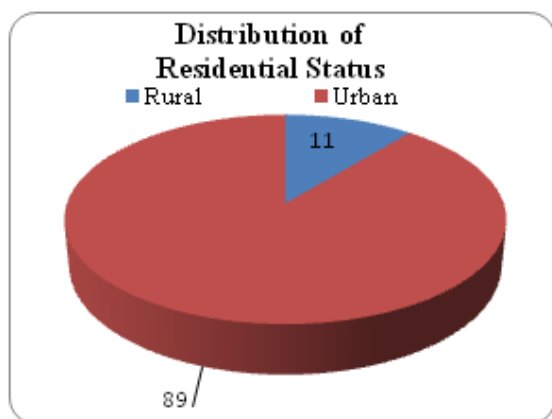


Figure 2: Distribution of residential status

Of 118 cases studied, 79 (66.9%) were married and 39 (33.1%) were unmarried in the study group.

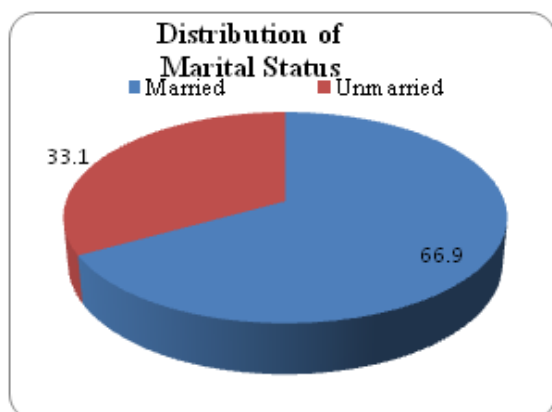


Figure 3: Distribution of marital status

Of 118 cases studied, 99 (83.9%) had Phimosis, 9 (7.6%) had Balanoposthitis, 3 (2.5%) had Phimosis + BXO, 3 (2.5%) had Recurrent Balanoposthitis, 2 (1.7%) had Short Frenulum, 1 (0.8%) had BXO and 1 (0.8%) had religious indication for circumcision in the study group.

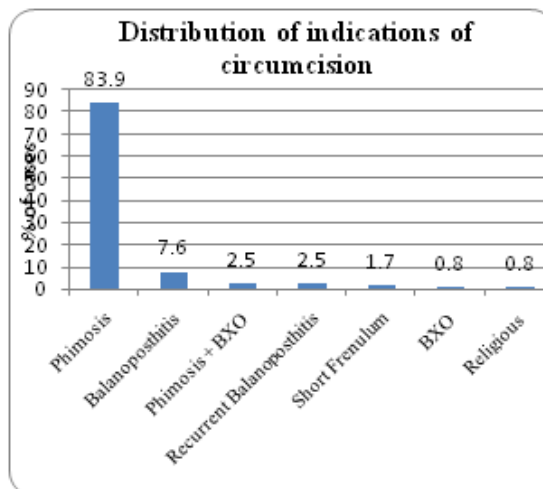


Figure 4: Distribution of indications of circumcision

Of 118 cases studied, 2 (1.7%) had Modified Kuppusswamy's score more than 25, 20 (16.9%) had score between 16 -25, 58 (49.2%) had score between 11-15, 32 (27.1%) had score between 5-10, and 6 (5.1%) had scoreless than 5, with majority of the population belonging to the lower middle and upper lower class.

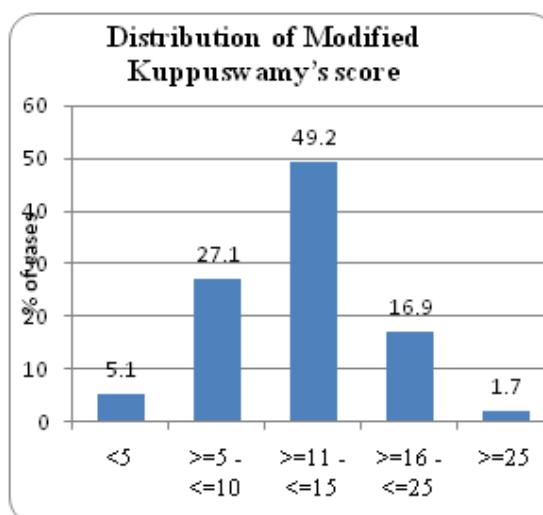


Figure 5: Distribution of socio-economic status as per Modified Kuppusswamy's score

Of 118 cases studied, 101 (85.6%) did not have any complications, 8 (6.8%) had pain + edema, 4 (3.4%) had hemorrhage, 1 (0.8%) had Pruritus + Edema, 1 (0.8%) had Decreased stream + Edema, 1 (0.8%) had ED, 1 (0.8%) had SSI and 1 (0.8%) had discomfort in the study group. None had recurrence in the study group.

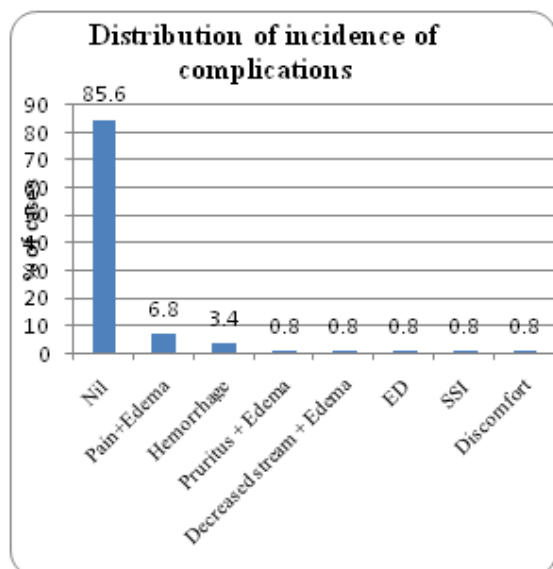


Figure 6: Distribution of incidence of complications

4. Discussion

Circumcision is amongst the oldest and most widely performed surgeries described in medical literature. In the Indian setting of a Hindu-dominant country, almost 33% of the general population is estimated to be circumcised [1], largely influenced by the religious and cultural beliefs. From the initial days when the surgery was performed using crude instruments to the modern day techniques under strict asepsis, the surgery has evolved day by day. Overall it is considered to be a minor surgery, but the results can be disastrous if few critical steps go wrong.

WHO describes four techniques of circumcision for adolescent boys and adults forceps-guided, dorsal-slit, sleeve-resection & device-worn techniques. Each have got its pros and cons. Forceps-guided is quick to learn and faster to perform but it can leave a wider cuff of mucosal skin proximal to corona. Dorsal slit is commonly used for medical reasons like phimosis, it is the fastest technique, but carries the risk of urethral meatus injury. Sleeve resection has best cosmetic outcomes with minimal blood-loss but is technically more demanding and has a longer learning curve. Device worn techniques are quick, simple, suture-free but have to be worn for about a week and completion of procedure requires a second visit to the clinic. This is generally a preferred technique for infants and children. The ultimate aim of all the techniques is to ensure a safer, cleaner, cheaper, socially acceptable and cosmetically superior surgery.

In the setting of India, where resources are generally deficient and the most common indication for circumcision in adults is phimosis, forceps-guided and dorsal-slit techniques are more commonly used. Outcomes are overall satisfactory with acceptable complication rates. Most common complications being pain, edema and haemorrhage, which are managed conservatively.

In the present series out of 118 patients, considering the age distribution, majority of the patients were young adults between 20 and 40 years of age, comprising 62% of the

cases. The youngest patient was a 20 years old college going student while the oldest was a 84 years old carpenter from a rural background. Mean age \pm SD of age of all the cases studied was 39.9 ± 16.5 years. Majority of the patients belonged to the urban background comprising about 88% of the total cases, and thus had access to health care facilities. About two-thirds (66.9%) of the patients were unmarried which corresponds with the age distribution of the patient. Similarly the most common comorbidities associated was hypertension alone seen in about 11.9% of the patients, while others had diabetes mellitus, COPD, etc seen in the elderly age group as expected. When the religion was taken into consideration, for the adults presenting for circumcision, it revealed that the majority was Hindus (94.1%) as expected and the Muslims comprised only 1.7%, which could be attributed to the fact that most Muslims are already circumcised before attaining adulthood.

The most common indication for circumcision was phimosis seen in about 83.9% of the patients. Other indications included balanoposthitis, BXO, recurrence, etc. There was single adult who presented for religious circumcision in the entire study group. The duration of symptoms with which the patients presented was less than 6 months in majority of the cases (65.3%). On studying the socioeconomic status according to the Kuppuswamy scale, most of the patients belonged to the lower middle & upper lower class, comprising nearly 76.3% of all the patients.

Most of the patients had no significant complications. However amongst all the complications, the most common complications were pain & edema seen in total of 8 patients (6.8%). For assessment of severity of pain, visual analogue scale was used, which revealed that for majority of patients who complained of pain in the post-op evening period had maximum VAS score 4-5, which was managed adequately with additional oral analgesics. On subsequent days, the VAS score decreased and were managed with tapering doses of analgesics. By post-op day 4, most required analgesia only on SOS basis.

Only 4 patients (3.4%) of all the cases had mild to moderate bleed, which was managed with adequate compression only. None of them required redo surgeries or transfusions. These findings are in accordance with most of the studies which also suggest that complications are very rare in hospital settings and usually range between 5-30% for minor complications & <5% for major complications [2]. Overall the cosmesis was satisfactory to good in >95% of the patients and only a few had more expectations than the final outcome. As most of the patients were complication-free, the length of hospital stay was less than four days in about 93.2% of the cases, and the return to normal physical activity of pre-op state was less than 10 days in about 89.8% of the patients.

Off late there has been lots of discussion about the sexual effects following circumcision. Senkul et al said that circumcision enhances the sexual pleasure by increasing the ejaculatory latency time [3]. However in this study there was a single elderly patient complaining of erectile dysfunction on long term follow, which can be considered

to be a major complication. Therefore the overall incidence of major complication is <1%, which corresponds with other studies and is expected in a high-volume hospital setup.

Over the last decade, WHO has promoted circumcision as an additional prophylactic measure to prevent HIV infection in developing countries with high burden of HIV especially in sub-Saharan African countries. This was supported by multiple studies conducted mostly in African countries which concluded that communities where male circumcision was promoted showed 60% decrease in heterosexual transmission of HIV [4]. However in the present study, there were no volunteers presenting for the same. This could be attributed to the socio-cultural beliefs of the Indian population where circumcision is taken as an important marker of religion hence is not acceptable, and only medical indications outweigh the faith.

On studying the post-operative histopathology of the resected prepuce skin, majority (61%) had normal prepuce skin, while the rest had various forms of inflammatory changes e.g., posthitis, consistent with BXO, etc. There was one isolated case of plasma cell balanitis.

In 2014, Sahay et al in an Indian multi-centric study concluded that the communities need to discuss and create new social norms about male circumcision for better social acceptance [5]. They also said that further studies are required to explore the feasibility of circumcision as an individual specific option for the high risk group. Rupani and Shaikh concluded that religious/cultural opposition was not a major barrier and recommended that the government should launch voluntary male medical circumcision to decrease HIV transmission [4].

Recent developments in the field of circumcision advocate the novel technique where the frenulum is to be spared during surgery. Studies by Shenoy et al in 2015 suggested that this has the advantage of circumventing the potential complications of bleeding, is time saving and the cosmesis is also acceptable [6].

Tiwari et al have tried the use of tissue-glue (cyanoacrylate), rather than sutures, and concluded that their technique of sutureless circumcision is cosmetically superior and less time consuming [7]. However this approach is yet to gain popularity.

5. Conclusion

Male circumcision can be performed at any age; however they are mostly performed in infancy or childhood on religious backgrounds. In Indian setup, circumcision in adults is performed for very specific medical indications, most commonly phimosis. Multiple techniques have been described for circumcision in literature. The technique of choice should depend on the doctor's expertise and patient preference. Complications related to circumcision are usually minor and treatable.

It is important for health care providers to be updated about all the modalities of circumcision available and provide the best suitable one for a patient on individual to individual basis, which will improve the patient's acceptability and safety profile for male circumcision.

Conflicts of interest: The authors declare no conflicts of interest.

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