

Childhood Circumcision, Indications & Complications

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Abstract

Circumcision is the most commonly performed operation in males worldwide & is an integral part of several religions like Islam & Judaism. Medical indications of circumcision are a few. Circumcision is contraindicated in a number of congenital penile disorders, including hypospadias, epispadias, chordee, buried penis & micropenis. Various techniques are available for performing circumcision. Complications include haemorrhage, infection, and meatal injury resulting in stenosis, removal of incorrect amount of skin, penile injury, urethral injury & painful scarring. However many of these complications can be prevented by using precise surgical techniques, meticulous asepsis & haemostasis. **Objectives:** To note indications, age of children & complications developing after circumcision. **Patients & Methods:** The study was conducted in the Surgical Department of Ch. Rahmat Ali Memorial Hospital, Township, Lahore, from Jan 2009 to Dec 2011. A total of 1000 cases were included in the study. **Results:** 860 (86%)

children had circumcision performed in the surgical department & 140(14%) were referred to our unit after circumcision performed by quacks, barbers & general practitioners, after developing some complications. Ritual (religious) circumcision was done in 936 (93.6%). 64 (6.4%) had medical indications. Out of 936, 815 (87%) were Muslims & 121 (13%) were non Muslims. 64 (6.4%) children were circumcised because of medical indications, mainly phimosis & paraphimosis. 140 (14%) children were referred to our unit because of complications, mainly bleeding in 34 (24%), infection in 20 (14.2%), under circumcision in 85 (60.7%) & excessive removal of skin in 1 (0.7%) child. The only complication which occurred in children operated in the hospital was infection in 6 (0.7%) children. Ages of the children were:

Less than 1 month- 208 (20.8%)

1 to 12 months- 655 (65.5%)

1 to 5 years- 110 (11%)

More than 5 years- 27 (2.7%)

Key Words: Circumcision, Complications

INTRODUCTION

Circumcision is the most common surgical intervention performed in non medical setting within the community & is performed on millions of male children worldwide¹. Neonatal circumcision continues to be controversial issue, although it has been shown to have a preventive effect on many diseases^{10, 13, 15}.

It is considered religious law in Judaism³ & established tradition in Islam⁵ to circumcise sons. It is also practiced by certain African Tribes⁴. Despite controversies neonatal circumcision is one of the most commonly performed elective procedures in USA⁶. Although there is a wide variation in the rate of circumcision throughout the world, it is estimated that one third of males in the world are circumcised^{1,4}. Circumcision has been presented as a symbol of therapeutic state, a mutilating procedure, a religious

ritual & a prophylaxis against a variety of diseases^{1,3,13,15,20}. Circumcision (Latin Circumcido, to cut around)¹ is an elective surgical procedure, in which the skin covering the end of penis (prepuce or fore skin) is excised. The function of fore skin is uncertain, but protections of underlying penile glans & meatus, as well as reduction of friction during sexual intercourse have been proposed⁴.

Indications

Non-Medical:

1. Religious Ritual circumcision is an integral part of Islam⁵ & Judaism³.
2. Social, Circumcision is performed worldwide on majority of boys for non religious "social" reasons. One of the perceived advantages is

improved hygiene resulting in a reduction of venereal diseases, particularly HIV infection & human papilloma virus & a reduction in penile & cervical carcinoma^{17,18,19}.

Medical:

1. Pathological Phymosis, It is a non retractile scarred fore skin, caused by trauma, balanitis or recurrent balanoposthitis & is an indication of circumcision.
2. Recurrent infection of urinary tract, Several studies have suggested that UTI's are up to ten times more common in uncircumcised compared with circumcised infants¹⁸.
3. Paraphymosis, It occurs when retracted foreskin becomes stuck behind the glans. Acting as a tight constrictive band proximal to coronal sulcus it causes increasing preputial & glanular edema, resulting in pain & potential ischemia. Treatment is dorsal slit or circumcision⁴.
4. Delayed Physiological Phymosis, Majority will resolve spontaneously or can be managed conservatively. However if condition persists beyond 10 years of age, circumcision is indicated⁴.

Contra-Indications

The foreskin is used for surgical reconstruction of a number of congenital penile disorders including⁴:

- Hypospadias
- Epispadias
- Chordee
- Buried penis
- Micro penis

Circumcision is therefore contraindicated in these conditions but many children with these conditions are circumcised before a definitive surgical procedure is done⁴.

Different Methods of Circumcision

The aim of circumcision is to remove sufficient foreskin to expose the glans whilst ensuring that penile shaft skin is preserved⁴.

Non Operative:

- Biblical method
- Morgan clamp
- Gomco clamp
- Plastibell

Operative:

- Open
- Guillotine method (Bone Cutter method)
- Free hand
- Sleeve technique

The principles of surgical circumcision are

Retraction of foreskin

Release of preputial adhesions

Excision of foreskin leaving an adequate mucosal cuff

Meticulous haemostasis

Closure

Complications of Circumcision

Acute complications most commonly involve bleeding, infection or an incorrect amount of skin removed & significant acute complications are rare occurring in less than 1% of cases. Other more serious complications have also occurred but are extremely rare^{2,3,4,7,9}.

Haemorrhage:

Inadequate haemostasis during circumcision can result in post operative haemorrhage. Primary hemorrhage can be treated by pressure dressing, use of bipolar diathermy or sutures. Secondary haemorrhage usually responds to pressure & may be associated with infection¹.

Infection:

The incidence of infection is low & many surgeons routinely prescribe prophylactic topical antibiotic ointments. Established infection is treated by oral or systemic antibiotics³.

Meatal Stenosis:

It occurs when a urethral meatal ulcer heals with contraction of the scar or if recurrent balanitis involves the meatus. Meatal stenosis may respond to topical steroids, but meatal dilatation or meatoplasty is often required.

Incorrect Amount of Skin Excised

Too little or too much skin may be removed. Insufficient removal can result in retracted penis or poor cosmetic effect & recircumcision may be required. Excessive removal of foreskin can result in denuded penile shaft & reconstruction may be necessary.

Penile Injury

Amputation of all or part of glans is rare, but occurs if the glans is caught in the clamp devices or if devices are incorrectly sized. The use of monopolar diathermy

or local anesthetic agent with adrenaline can also result in partial or total penile ablation. Reconstruction can be attempted.

Urethral Injury:

The penile urethra runs close to ventral surface of penile shaft. Injury can occur when sutures on the ventral side are placed too deeply & this can result in urethral fistula.

Painful Scarring:

It occurs when sutures have been applied to the edge of glans rather than the mucosal cuff. It causes pain during erection & sometimes scar have to be released.

Patients & Methods:

The study was conducted in Ch Rahmat Ali Memorial Hospital, Township, Lahore from Jan 2009 to Dec 2011. A total of 1000 cases were included in the study. Children up to the age of 12 years were included in the study. A comprehensive data was collected regarding any serious illness in the children. Hb level & bleeding profile were done in all children. Cases of Hb level below 9.0 gm% or bleeding disorders were not included in the study.

860 (86%) children had circumcision in the surgical unit of the hospital. 140 (14%) children were referred to the hospital because of developing complications after circumcision has been done somewhere else. These children were treated on the merit after doing all routine investigations & inquiring the parents/attendants about the procedure.

RESULTS

860 (86%) were operated by qualified surgeons while 140 (14%) by non experts & were referred to us because of complications.

The only complication which occurred in 860 children operated in the hospital was infection in 6 (0.7%) children, which responded well to oral or topical antibiotics. 140 children referred to the hospital had following complications. Primary hemorrhage in 34 (24%), infection in 20 (14.2%) & incorrect removal of skin in 86 (61.5%). 85 (60.7%) had under circumcision while 1 (0.7%) had excessive removal of skin with denuded penis & testis was hanging outside. The child

Table-1

Age groups of children

Age	Number	Percentage
Less than one month	208	20.8%
1-12 months	655	65.5%
1-5 years	110	11%
More than 5 years	27	2.7%

underwent reconstructive surgery with good outcome. All children were treated on the merits with satisfactory results.

Table-2

Complications after circumcisions done by non-experts (total 140)

Complications	Number	Percentage
Haemorrhage	34	24%
Infection	20	14.2%
Under- circumcisions	85	60.7%
Excessive removal of skin	1	0.7%

Table-3

Indications

Indication	Number	Percentage
Ritual (Muslim)	815	87%
Social (non-Muslim)	121	13%
Phymosis	56	87.5%
Para-phimosis	8	12.5%

**Figure-1
Circumcision Injury**



DISCUSSION

In Western countries, controversies exist whether circumcision should be done or not. Circumcision proponents argue that circumcised boys have lower incidence of lower urinary tract infection, zipper injuries or para phymosis & also lower rate of sexually transmitted diseases^{13,15 20}.

In our country, circumcision is performed due to religious obligation in Muslims⁵, although social & cultural factors are also present in non Muslims¹².

In our study the procedure was done by open technique. It was also noted that under circumcision was a

common complication after the procedure done by non experts. The only complication that occurred was infection in 0.7% children. This matches all related world study results as well^{6,7}.

CONCLUSION

Circumcision is not a trivial procedure in infants & children. It should be performed by an experienced person who can evaluate the children pre operatively, identify contra indications to the procedure, manage possible complications & evaluate children post operatively. Non experts should be discouraged to perform the procedure as they are not trained in this respect. People need to realize the importance of having this procedure done by experts and not by quacks and self proclaimed doctors.

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