

## Review Article

### Circumcision : Myths and Facts

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Since time immemorial one of the commonest surgery performed in the History of Mankind is Circumcision. The medical indications with sociocultural overlay surrounds it as a mysterious entity. This age old practice has been re-evaluated in the light of evidence regarding its relevance and usefulness in today's practice. Religious and medical indications has been reviewed in this article and Common Myths have been busted in light of emerging evidences.

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Circumcision means removal of penile foreskin. The evidence of Circumcision being done was seen in Ancient Semitic people like Egyptians & Jews. In the wall painting of Egyptians thumb around 2300 BC, there have been ritual of Circumcision among Judaism & Islam, citing improve penile hygiene & lower risk of infection. But, Buddhism & Hinduism along with European had a neutral take over it<sup>1</sup>.

Phimosis, paraphimosis and balanoposthitis along with Balanitis Xerotica Obliterans (BXO) forms common etiological factors for Circumcision<sup>2</sup>. The prevention of recurrent Urinary Tract Infection (UTI), HIV infection and Invasive Penile Cancer are other indications for circumcision<sup>3</sup>.

In Jews Community Circumcision is performed on 8th day of life. In the Muslim wide variability of age is seen regarding Circumcision ritual<sup>4</sup>. Sexual attributes of prepuce are given to increased number Meissner's corpuscles, secreting pheromones and stimulation of partner's genitalia giving her erotic pleasure. The protective function of foreskin have been related with prevention against injury, against UTI, extremes of temperature and by secreting lysosome making bacteriostatic film over the glans<sup>5</sup>. There are opponents of religious Circumcision and they emphasized the function of foreskin in many protective and sexual roles. They consider circumcision unnecessary, unscientific and disrespectful as it mutilates the body image & integrity. Other arguments against the Circumcision are the complications like meatal stenosis, poor breast

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#### Editor's Comment :

- Proper phallus examination to rule out congenital diseases before undertaking circumcision.
- Proper pre-operative evaluation to rule out bleeding disorder.
- Consideration of topical steroid as non-surgical management.
- A proper written and informed consent regarding complications of circumcision.
- Usage of device is a must only if one is well versed with it.

feeding and poor cognitive development<sup>5</sup>.

We shall analyze the data in the backdrop of claims of benefit and counter claims about harm regarding status of Circumcision mainly based on medical grounds.

#### Circumcision in HIV :

Evidences are furnished for beneficial role of Circumcision in population at risk of HIV (Human Immunodeficiency Virus). The association of chemokine receptors CCR-5 and HIV colonization on these receptors are linked. Also foreskin contains Langerhan cells, CD4 T cells and macrophages which are common target cells for HIV<sup>6</sup>.

#### Urinary Tract Infection (UTI) and Circumcision :

It has been seen ten times lesser risk of UTI in circumcised male infant than uncircumcised. A systematic review on reduction of risk of UTI shows risk reduction in the odds of 90%<sup>7</sup>. Studies also reveal that incidence of UTI in boys are far less than the number of complications of Circumcision. Hence, routine Circumcision is not recommended for prevention of UTI. The undisputed roles of Circumcision in various studies have been assigned to cases of recurrent UTI.

#### Sexually Transmitted Disease and Circumcision :

Common sexually transmitted diseases like HPV (Human Papilloma Viruses) Genital Herpes, Chancroid, Syphilis are prevented by male

Circumcision. There are many studies which cite little support or altogether refute these findings. Male Circumcision may act like a global vaccine to reduce the burden of infections transmitted by sexual contacts<sup>8</sup>.

#### **Cancers and Circumcision :**

Invasive Penile Cancer and Prostate Cancer are being prevented if Circumcision is done. Increased susceptibility to penile carcinoma among uncircumcised men may be mediated by Human Papilloma Viruses (HPV). The cervical carcinoma among female partner is also reduced as in circumcised men.

In a systematic review by Larke, *et al* concluded that men circumcised in childhood /adolescences are less prone to develop invasive penile cancers. The explanations postulated that removal of foreskin leads to depletion of smegma which causes repeated inflammation leading to cancerous changes<sup>9</sup>.

#### **Arguments against Circumcision :**

Common arguments proposed in opposing non therapeutic male Circumcision of minors for urinary Tract Infection in infancy is unnecessary and of little consequences and can be easily managed with antimicrobials both therapeutically and prophylactically.

The physical harm along with complications in the form of Meatal Stenosis, Glans Amputation, Urethrocuteaneous Fistula and Keratinization of Glans, make circumcision not a good option. In some studies, the reduction in sexual function in the form of decreased sexual gratification has been reported. The risk of HIV or sexually transmitted disease in hetrosexual intercourse has been challenged and simple barrier methods are advocated. The benefit of carcinoma is also contested in the light of rarity of penile carcinoma cases. The view of Human Rights Advocacy Group wants to hold Circumcision until boy is old enough to decide for himself<sup>10</sup>.

#### **Indications of Circumcision :**

Absolute indications for Circumcision includes Phimosis, paraphimosis, recurrent balanoposthitis and Balanitis Xerotica Obliterans (BXO). Absolute contraindications of Circumcision includes many congenital conditions like Hypospadias, Chordee, Webbed Penis. These patients should be evaluated carefully because redundant foreskin may be required for Penile Reconstruction, in Future Reconstructive Surgeries<sup>11</sup>.

#### **Age of Circumcision :**

The Neonatal Period is optimal & ideal age for Ritual Circumcision. Circumcision in infancy carries lower costs & lower risk of complications<sup>12</sup>.

#### **Operative Interventions :**

The goals of Circumcision are excision of foreskin along with inner prepuce skin, prevention of glans injury, proper hemostasis and cosmetically good looking phallus.

There are various methods for Circumcision which are broadly categorized into three types. These are free hand excision, slitting the prepuce dorsally and various devices used as shield & clamp. The Gomco clamp and Plastibell clamp are shielded devices used for Circumcision. The Mogen clamp is a non-shield device, so there is more chance of glans injury<sup>13</sup>.

A meta-analysis was done in 2017 to assess the safety and efficacy of disposable Circumcision suture devices in the management of redundant prepuce and phimosis. In this study, it was found that Circumcision suture devices were better and safer than conventional Circumcision<sup>14</sup>. Yu Fan *et al* in 2016 to evaluate the safety and efficacy of insitu devices and circular disposable devices and concluded that insitu devices were found to have less intraoperative blood loss, less operative time and better wound healing<sup>15</sup>.

A meta-analysis was done to see the effect of three Circumcision techniques (Conventional circumcision, Shang Rings & Disposable Circumcision suture devices) and concluded that disposable Circumcision suture device had advantages over other procedures like shorter operative time, better penile cosmesis, fewer complications and shorter wound healing time<sup>16</sup>.

A meta-analysis was also done to evaluate the efficacy of tissue glue in Circumcision and found that tissue glue has reduced operation time, postoperative bleeding, hematoma, postoperative pain and also gives better cosmetic appearance<sup>17</sup>.

#### **Chemical Circumcision :**

Various literatures suggest that phimosis is over diagnosed & over treated. Sometime prepuce adhesion is mis-diagnosed as true phimosis and Circumcision performed<sup>18</sup>.

It is usually seen that problem with foreskin retraction at age of 3 years were 10% and at age of 16 years were 1%, 0.5% Betamethasone is commonly used for chemical circumcision. Due to anti-inflammatory effect & skin suppling effect Betamethasone is used in phimosis<sup>19</sup>.

Nicola zanuperi *et al* in his study concluded that early treatment with topical steroid shows much better result with high response rate between 4-8 years of

age. They analyzed 12 studies that included 1395 boys aged between 18 days to 17 years and it was found that topical steroid may be a safe alternative to treat phimosis in boys before undergoing surgical treatment<sup>20</sup>.

### Complications of Circumcision :

Approx one in three men are circumcised globally. Neonates and infants have fewer complications than older children. Overall complication rate was 2%-10%. Bleeding and infection are most common complications<sup>21</sup>.

### Special Conditions :

In Circumcision of Hemophilic patients bleeding and hematoma are the most common complication. If patient was diagnosed prior to surgery and appropriate preventing measures were taken then the risk of bleeding was insignificant. On the other hand if it was discovered postoperatively the risk of bleeding significantly increased to 30%. Hematoma formation was seen ranging from 0.2 to 43% in hemophilic patient<sup>22</sup>.

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