January 2016

Conservative Treatment Alternatives to Male Circumcision

A publication of Doctors Opposing Circumcision
www.doctorsopposingcircumcision.org
Seattle, Washington

Circumcision is not a medical decision. Preventing an improbable future infection is a spurious indication. The standard of care is antibiotics, not amputation.

– Eileen Marie Wayne, M.D.

Introduction

Male circumcision is an invasive operation that excises a normal body part, the prepuce, and destroys its multiple physiological functions.[1,2,3] The Medical Ethics Committee of the British Medical Association states, "to circumcise for therapeutic reasons where medical research has shown other techniques to be at least as effective and less invasive would be unethical and inappropriate."[4] The goal of conservative treatment is preservation of the foreskin and its restoration to health.[5]

Some commonly cited indications for circumcision are phimosis, balanoposthitis, paraphimosis, hypospadias, and urinary tract infection. Literature on alternatives to circumcision for each of these conditions is reviewed in the text that follows.

Phimosis

Phimosis (Greek for 'muzzling') is the term that designates a non-retractile foreskin. Circumcision has been a traditional treatment for non-retractile foreskin. Non-retractile foreskin, however, is not a disease and does not necessarily require treatment, unless it causes problems.

Multiple studies have shown that non-retractile foreskin is the normal condition in children and some adolescents.[6-9] The foreskin usually becomes retractable with maturity, spontaneously and without treatment.[10] Thorvaldsen and Meyhoff report that the mean age at full natural retractability is 10.4 years.[11] Numerous studies have shown significant rates of misdiagnosis of normal penile development as pathologic, often leading to unnecessary circumcision.[12-16]

If treatment of non-retractile foreskin is deemed necessary, there are three non-invasive or less invasive alternatives to circumcision:

1. topical application of steroids with gentle stretching
2. manual stretching to accomplish tissue expansion
3. minimally-invasive preputioplasty

Topical steroids – There have been numerous trials in several nations of topical steroids for the treatment of non-retractile foreskin.[17-30] However, most of these trials have been carried out on very young boys, when the prepuce still is undergoing the natural developmental process, and thus no treatment is actually needed. Nevertheless, the treatment thins the skin[21] and works in about 80 to 95 percent of cases. Few, if any, complications have been reported.[20,24,27] Topical steroid application is the standard treatment of non-retractile foreskin in boys (if treatment is deemed necessary).[29,30] A study of treatment with steroids in children aged 3 to 6 showed that this avoids the psychological trauma of circumcision.[31]

Manual stretching – Manual stretching also is effective for creating a retractile foreskin by tissue expansion. Manual self-stretching is suitable for adolescents and adults and is cost-free.[32] Stretching has been reported using several techniques, including daily manual stretching using forceps,[33] masturbation techniques that mimic the dynamics of coitus,[34] balloon dilation with local anesthesia,[35] and retraction of the foreskin under anesthesia.[36,37] Note that the majority of children in these latter two studies did not have a medical indication for circumcision, however.

One study showed that conservative management required more visits to the hospital and caused more complications than circumcision, but in this study the majority of children, again, did not have an actual pathologic process needing circumcision.[38] In this study, circumcision complications were only determined by self-report by the patient, and the patients were not monitored afterwards. The loss of the foreskin and its inherent functions, experienced by all boys undergoing circumcision, was not considered a complication, despite the significant effects this has on a person's life.

It is wise to remember that no intervention of any kind is in the child's best interest if the only problem to begin with is a lack of understanding of normal foreskin development.

Preputioplasty – Preputioplasty is an operation to alter the shape of the prepuce without removing it. European surgeons have reported using several variations of this minimally invasive plastic operation with great success for more than a decade.[39-44] Plastic operations preserve the foreskin and its functions and have an easier and quicker recovery period with less pain.[39]

Summary – Understanding natural foreskin development and waiting for maturity to make the foreskin retractable is the lowest-cost treatment of non-retractile foreskin in children. Manual self-stretching of the foreskin also can be performed cost-free. Topical steroid treatment costs less than preputioplasty, with circumcision being the most costly treatment for non-retractile foreskin.[45,46]

A retrospective analysis from Scotland provides an example of what can be achieved. There, better physician training on normal development of the foreskin, greater use of steroid medical treatment, and preferential use of preputioplasty reduced the number of circumcisions performed for phimosis by half over a ten-year period.[47] With fuller use of conservative treatment, the number of circumcision operations for phimosis could decrease even further.

Circumcision now is outmoded as a treatment for non-retractile foreskin and should be discarded.[48] The exception is when a competent adult patient chooses it, after he is completely and thoroughly informed of its likely complications and risks, including loss of foreskin functions, alterations to penile sensation (with complete loss of the sensation provided by the foreskin and variable effects on other penile sensations), and potential impact on sexual performance and satisfaction.[49-51]

Balanoposthitis

Balanoposthitis is inflammation of the glans penis and foreskin; balanitis is inflammation of the glans penis; and posthitis is inflammation of the prepuce.

In order to determine the most effective treatment, the physician first must determine the cause of the inflammation. After taking a careful patient history to determine risk factors for varying causes of balanitis, such as *Candida* infections (often associated with diabetes), sexually transmitted diseases, or dermatologic disease, appropriate work-up is undertaken. Complete work-up may require urinalysis, cultures, and biopsy. Many pathogens, such as fungus, anaerobes, aerobes, protozoa, and viruses, may cause infection. Each requires individualized management. Dermatologic diseases such as psoriasis and eczema are also often associated with balanitis. Predisposing factors include diabetes, over-washing, use of over-the-counter medications, and non-retraction of the foreskin (for cleaning).[52]

Management of underlying conditions, such as diabetes, eczema, or risky sexual behaviors is important for preventing further episodes. If the condition recurs, careful attention should be paid to ensuring all pathogens have been eradicated, proper hygiene is being followed, and underlying causes of inflammation or disease predisposition are treated.

Little medical research has been done on the normal flora of the foreskin, but it is likely that the importance of a healthy microbiome inside the gut, vagina, mouth, and other areas of the body exposed to the outside world is equally important inside the foreskin. Fleiss reports that *Acidophilus* culture restores healthy bacteria and may be applied directly to the foreskin to promote healing.[53]

European guidelines for the management of balanoposthitis suggest conservative measures to complement treatments prescribed.[52] These include keeping the foreskin retracted if possible until healing (while ensuring the patient is advised to avoid paraphimosis), saline baths, over-the-counter talcum powders for drying the area, and avoiding soap.[54,55] More specific treatments for each type of balanoposthitis can be found in the European guidelines.

BXO – One cause of balanitis for which circumcision is often considered is balanitis xerotica obliterans (BXO), or lichen sclerosus (LS).[56,57] The management of this disease is covered in the above European guidelines,[52] yet it deserves special mention. BXO/LS once was considered to be an absolute indication for circumcision,[58-60] but that is not the case today.[61]

Treatment with topical steroid cream is now considered the first line and mainstay of treatment for BXO/LS.[52,61,62] Multiple studies have shown treatment with sub-lesional, intra-lesional, or topical steroids to be successful in reducing symptoms and slowing disease progression, especially in mild cases.[17,58,63-69] One team of researchers reported a 30 percent rate of resolution treating boys with topical steroid cream, with success being limited to patients with minimal scarring.[68]

Other treatments showing efficacy in treating BXO/LS include topical calcineurin inhibitors,[52,69,70] and carbon dioxide laser treatment to remove lesions.[71-75]

In addition to medical treatment, surgery may be necessary in some cases of BXO/LS. Meatotomy or urethroplasty may be required in severe cases to relieve obstruction and ease voiding.[52] Dewan, an Australian pediatric urologist, has recommended preputioplasty instead of circumcision to relieve phimosis,[76] although the continuing inflammatory process might result in re-stenosis.[77] Laser treatment may be useful in the treatment of meatal stenosis.[61]

BXO/LS has been identified as a risk factor for development of squamous cell carcinoma (SCC) in adults.[52,61] The risk of SCC in children is unclear. Biopsy may be indicated to rule out SCC.[61,62]

Summary – Determining and directly addressing the cause of balanoposthitis is critical for helping patients achieve health. Balanoposthitis is often merely one symptom of a disease process that is affecting the entire patient. Addressing the root cause can have numerous benefits for the patient. Circumcision fails to do this, and should only be considered as a last resort, and only in patients who have been presented with all conservative options, been given support in pursuing these options, and who thoroughly understand the potential risks of circumcision.

Paraphimosis

Paraphimosis is a painful condition in which the foreskin becomes stuck behind the glans penis. The most common cause is iatrogenic: the caregiver retracts the foreskin to clean or examine the penis, or to insert a catheter, and fails to return it to its anatomic position covering the head of the penis.[78] Note that catheterization can be safely and easily performed without retraction in those with physiologic phimosis.[79]

Paraphimosis is a medical emergency. Failure to return the foreskin to its anatomic position can result in ischemia of the glans, potentially leading to tissue necrosis. When diagnosed, efforts should be made to reduce the foreskin immediately.

A manual reduction technique is often effective, in which the fingers are placed on either side of the shaft, just behind the retracted foreskin, and the glans is pushed with the thumbs back into the foreskin cuff.[80, 81]

Manual reduction can be facilitated with several techniques to reduce the edema. The first is gentle squeezing. When examining the patient, the glans and edematous tissue should be gently

squeezed with steady pressure and held for at least 2-3 minutes. After this, reduction of the foreskin may be more easily performed.

Other reported techniques include applying ice packs, using compressive elastic bandages, injection of hyaluronidase, the application of granulated sugar around the edematous tissue to osmotically extract fluid, and puncturing the edematous tissue with an 18-gauge needle followed by manual compression.[78,81,82] If an initial effort to reduce the foreskin manually fails, one may consider a penile nerve block, topical anesthetics, or oral analgesia prior to proceeding with further options.[78,81]

In severe cases where the foreskin cannot be reduced, a dorsal slit may be used as an emergency operation to relieve the obstruction, which may be followed by preputioplasty for cosmetic reasons.[77] Circumcision is not recommended as an emergency operation because of technical difficulties due to edema, but it is commonly performed later in the United States. The purpose of this operation is not functional or therapeutic, but reflects the inaccurate belief held by many Americans that a circumcised penis looks more 'normal.' Preputioplasty is recommended as an alternative, with results more likely to approach the appearance of the natural, intact penis and to retain as much sexual sensitivity and biomechanical function as possible.[77]

Summary – Paraphimosis can often be reduced using manual techniques. In rare circumstances, a dorsal slit is required. Preputioplasty is a therapeutic option preserving more function and sensation than circumcision, as well as a more anatomically normal cosmetic appearance

Hypospadias

Hypospadias is a congenital condition in which the opening of the urethra (the meatus) develops on the underside of the penis. In most cases, the foreskin creates a 'dorsal hood' and does not form a complete ring at the underside of the penis. Foreskin tissue has often been used for urethral reconstruction,[83] but some surgeons reconstruct the foreskin when performing surgery for hypospadias, rather than removing it.[84]

In any case, the commonly held assumption that hypospadias is a birth defect that requires correction is being challenged. Many adults who underwent surgery for hypospadias as children are now speaking out about the complications they experienced,[85,86] and surgeons are acknowledging the high complication rate of hypospadias surgery.[87] Because of this, many believe that hypospadias surgery should not be performed on those who cannot directly consent to the operation themselves (i.e., children), and that full disclosure of the risks should be given prior to the decision being made.

Any conditions that interfere with physical well-being, such as the rare case of meatal stenosis, should be treated when diagnosed to relieve suffering and prevent the development of irreversible problems. However, operating on hypospadias simply to produce a 'normal' genital appearance cannot be as easily justified, not least because of the many potential complications of the surgery.[88,89] In fact, the belief that the 'normal' penis should have its opening at the tip has been shown in population-based studies to be unfounded.[90] Many men with hypospadias

experience no adverse effects as adults.[91,92] Many parents who have chosen hypospadias surgery for their children later experience regret.[93] Those who choose to pursue surgery for hypospadias may wish to consider a more directed operation to correct only those factors that the individual finds problematic.

Summary – In the case of hypospadias, parents should strongly consider whether the operation will truly benefit their child. Seeking information from adults who underwent the surgery as children can be helpful for understanding the implications. If operation is chosen, in some cases, preservation of the foreskin is a technical option. See our Resources page for support organizations.

Urinary tract infections

Circumcision is often recommended to prevent urinary tract infections (UTIs) in boys. It is considered a helpful strategy by many pediatric urologists in boys who are born with congenital urologic problems predisposing to severe urinary tract infection, such as reflux, posterior urethral valves, and ureteropelvic junction (UPJ) obstruction.

There are two beliefs underlying this recommendation that must be examined. The first of these has to do with the fact that, in the past, circumcision has often not been recognized as harmful. However, many parents are now aware of the real harms experienced immediately and later by little boys undergoing infant circumcision, and of the growing numbers of adult men who are speaking out, saying they wish they hadn't been circumcised.

The second belief is that removing the foreskin lowers the chance of acquiring a UTI. Though there are data to suggest that this might be true, methodological concerns have been raised. In addition, there is evidence contradicting this claim. For a more comprehensive discussion, please see the section on urinary tract infections elsewhere on this website.

However, even if the evidence is valid, most people who are truly aware of the risks and harms of circumcision do not feel the lowered risk of UTI justifies the harm. Parents and physicians would therefore do well to rethink the recommendation for foreskin removal in the case of a child with a problem related to UTIs.

If a child has a condition for which circumcision is being recommended to mitigate an actual threat to his health, these questions should be considered:

1) What other preventive measures can be tried that are less harmful than circumcision?

2) If these other preventive measures are less effective and the child does get a UTI, how serious is the threat to his health and well-being, with proper treatment?

3) Are there other therapeutic measures (such as repairing a UPJ obstruction) that can be taken to make the health threat from a UTI smaller?

It is worth noting that girls have a 4-8 times higher risk of UTI than boys.[94,95] The reason circumcision for little girls is not even considered as an option, is that no one has performed any studies to evaluate whether removing parts of their genitals might lessen their UTI risk. It is hypothetically possible, for example, that measures such as removing the labia minora would work in a similar way as removal of the male foreskin to lower UTI risk. However, such studies would be considered unethical, as would the treatment. Little girls with problems predisposing them to UTIs are typically treated with good toileting habits, preventive substances such as cranberry and low-dose daily antibiotics, therapeutic courses of antibiotics, observation, and surgery to correct anatomic abnormalities when it is believed that they will not improve with age. These treatments are also available and effective for little boys.

Conclusion

Better understanding of the functions of the prepuce, the advent of the human rights era, and advances in medical ethics have increased the demand for conservative treatment alternatives to circumcision that preserve the patient's genital integrity. Medical ethics requires that all reasonable conservative treatment alternatives must be exhausted before a more intrusive modality is considered. Circumcision – an irrevocable excision of functional and sensitive tissue – should only be adopted as a last resort.

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Updated January 2016 by Adrienne Carmack, M.D.