Circumcision

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Snip or don't snip?

In 2012, the American Academy of Pediatrics declared that the benefits of circumcising boys outweighed the risks of the procedure. They cited health benefits that, while not great enough to warrant a recommendation for all males to undergo the procedure, were significant enough that it should be available to all, and that it should be covered by insurance. Not long after, the CDC concurred.

Let's look at the evidence. For years, pediatricians have cited studies that show that being uncircumcised is a risk factor for developing a urinary tract infection. They point to research that shows that circumcised penises have lower levels of yeast and bacteria. Even more compelling, cohort studies showed that there was a tenfold increase in the rate of urinary tract infection in boys who were uncircumcised versus those who were.

The actual rates of urinary tract infection were 1.1 percent versus 0.1 percent, for an absolute rate difference of 1 percent. This means that 100 boys would need to be circumcised to prevent one urinary tract infection. Other studies say the number might be higher.

It's really hard to argue that this decrease is worth a permanent, surgical procedure. It's especially hard to argue given that we don't really have data from randomized controlled trials. It's possible that there's something else different between boys who were circumcised and those who were not, especially since the vast majority (more than 80 percent) of boys in these studies were circumcised. Regardless, this amount of benefit seems to pass the threshold for coverage by insurance (which is low), so the procedure is available.

Another benefit sometimes mentioned is a reduced risk of penile cancer. Case control studies have reported that uncircumcised men have a three times greater chance of developing penile cancer. Again, this is relative: Penile cancer is very rare in the United States, so the actual risk reduction from circumcision is very, very small. It's estimated that more than 300,000 infants might need to be circumcised to prevent one case of penile cancer.

Some argue that circumcision can reduce the chance of contracting a sexually transmitted infection later in life. A systematic review of 26 studies found that circumcised men are at a lower risk of syphilis or chancroid. There might be some protection against herpes, but it's less significant.

The strongest case for circumcision can be made as a benefit against the transmission of H.I.V. In Africa, where H.I.V. is much more prevalent, randomized controlled trials of circumcision have been performed. The results were quite convincing. Absolute rate reductions of 1-2 percent over one to two years were seen. Some estimate that for 10 to 20 males circumcised, one fewer man might contract H.I.V. over a lifetime. One study likened circumcision to a vaccine of high efficacy.

Again, though, these results apply to countries with a much higher prevalence of H.I.V. than we see in the United States. The protection afforded, therefore, is much less significant here.

Opponents of circumcision point to its potential downsides. Surgical complications, while rare, are greater than zero. Pain is a concern as well; evidence exists both to support and rebut the notion that infants recover quickly.

More prominent concerns focus on sexual function and satisfaction. Opponents argue that the foreskin, like much of the penis, contains many nerve endings. It also protects the head of the penis; without it, the penis might become less sensitive over time.

But does this actually happen? A recent study in the Journal of Urology, discussed in The New York Times, measured penile sensitivity in circumcised and uncircumcised men and found no real difference. It wasn't the first, or the best, study to look at this.

A randomized controlled trial of more than 2,700 men in Kenya found that after circumcision they experienced increased sensitivity, and that they had an easier time reaching orgasm. A systematic review and meta-analysis found that circumcision was unrelated to premature ejaculation, erectile dysfunction or difficulty achieving orgasm.

Over all, the evidence arguing for and against circumcision fails to make a compelling case in either direction. The benefits, while arguably real, are small; likewise the harms. In such cases, we usually leave the decision to the patient.

There is, of course, an ethical problem here, since the choice is almost always made by parents, not by the boys themselves. Circumcision is irreversible, and many argue, quite stridently, that this is "genital mutilation" inflicted on children for no reason.

All cards on the table: I'm Jewish, and I'm circumcised, as are both my sons. The procedure has a spiritual weight in my community. When confronted by people who use terms like mutilation, I generally recoil. Circumcising my boys was a personal decision for my wife and me, and I understand the various arguments for and against. People angry about this choice seem to imagine that we haven't thoroughly considered it.

I also live with the knowledge that it's possible that my children might have chosen differently. But we also have to recognize that parents make many, many decisions for their children with a greater and more meaningful impact on them than circumcision. That's what parents do. Assuming that this is the most consequential one we might have made about our boys' lives, and focusing so much attention on it — when evidence makes the value of either choice unclear — seems out of proportion.

That doesn't mean opponents don't have a point. Circumcision is much rarer in most other industrialized countries. Health organizations in those countries don't advocate the procedure as we do in the United States. An argument can also be made for waiting until boys are old enough to make a decision for themselves. A number of factors make that difficult, though. It's a more complicated procedure then, with greater risks and higher costs.

Given that religion and culture are tied up in this, it's clear that this issue won't be decided soon. It's also clear that evidence won't make anyone's choice easier. In the end, the decision as to whether parents opt to have their babies circumcised will remain a personal one.

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CIRCUMCISION OVERVIEW

Circumcision in the male is the removal of the foreskin of the penis. The practice of circumcision dates to ancient times. In ancient Egypt, prior to biblical times, circumcision was performed to improve male hygiene. Later, routine circumcision of male infants was part of the Abrahamic covenants with Jehovah, giving rise to religious circumcisions that continue to this day in the Jewish and Muslim faiths.

Circumcision rates in the United States vary according to geographic area, socioeconomic status, religious affiliation, insurance coverage, hospital type, and racial and ethnic group. The incidence in 2008 was approximately 55 to 57 percent based on hospital coding data, but this is probably an underestimate of the true incidence of circumcised males, which is likely closer to 80 percent, due to miscoding and because some circumcisions are performed after hospital discharge or later in life for religious, medical, or personal reasons [1]. Based on coding data, circumcision rates are highest in the Midwestern states (74 percent), followed by the Northeastern states (67 percent) and Southern states (61 percent), and are lowest in the Western states (30 percent).

There are no studies that give reliable data about the number of males who are circumcised after birth for elective or surgical indications.

An Australian survey found that approximately 18 percent of males who were not circumcised as infants reported that they were circumcised subsequently [2,3].

NORMAL PENILE DEVELOPMENT AND HYGIENE

At birth, the foreskin, sometimes called the prepuce, is attached to the end of the penis, an area known as the glans (picture 1). Over time, the foreskin separates from the glans, forming a space between the skin and the glans. Separation is completed in 50 percent of boys by age 3 years, 95 percent by age 5 years, and 99 percent by adolescence. In a small number of uncircumcised males, partial adhesions leading to accumulation of smegma may persist throughout childhood, and even into adolescence.

Care of an uncircumcised penis — The foreskin should never be forcibly pulled back when there is resistance. Forcibly retracting the foreskin while it is still attached to the glans could cause injury.

The uncircumcised penis is generally easy to keep clean. Parents of an infant should gently wash the genital area while bathing. Later, when the foreskin is fully retractable, boys should be taught the importance of washing beneath the foreskin on a regular basis. The foreskin should be dried before pulling it forward.

BENEFITS OF CIRCUMCISION

There are several medical benefits to male circumcision. However, factors other than circumcision (eg, number of sexual partners, use of condoms, human papillomavirus (HPV) immunization, penile hygiene) are probably much more important risk factors for penile medical disorders than not being circumcised.

Reduction in urinary tract infection — Urinary tract infections (UTIs) are uncommon in males; the greatest risk is in male infants less than one year old. Studies consistently report that uncircumcised male infants are at higher risk of UTI compared with circumcised male infants. UTIs in infants can result in kidney infection requiring hospitalization and, rarely, severe infection and death. If the urinary tract is normal, long-term sequelae from UTI are unlikely.

Cancer — Cancer of the penis is rare, but uncircumcised men are at increased risk for developing the disease. Good hygiene and HPV immunization may reduce or negate this risk.

Cervical cancer is more common in women whose male sexual partners are not circumcised. HPV immunization may reduce or negate this risk.

Penile problems — Uncircumcised males are at increased risk for inflammation of the glans; this problem rarely occurs in circumcised men, as well. Uncircumcised boys who practice good penile hygiene are less likely to experience penile inflammation.

Infection — Studies suggest that circumcision helps decrease the risk of acquisition of human immunodeficiency virus (HIV), HPV, and probably herpes simplex virus type 2 (HSV-2), and also some evidence that it may protect against trichomonas and chancroid infection. Circumcision does not protect against infection from gonorrhea, chlamydia trachomatis, or syphilis. It is important to note, however, that many circumcised men acquire these diseases. Circumcision may lower the risk of acquiring the infection, but it does not eliminate it.

Hygiene — In the uncircumcised male, the space between the foreskin and the glans must be cleaned regularly. Proponents of circumcision argue that it is difficult for uncircumcised boys and men to maintain proper hygiene.

ADVERSE EFFECTS OF CIRCUMCISION

Procedural risks — An accurate complication rate is difficult to determine because the largest studies are based on coding diagnoses and inconsistent definitions. In addition, data have generally not been stratified to account for timing of the procedure, technique, provider type, setting, length of follow-up, timing of complications, and severity of complications.

- In two studies that included a total of over 200,000 circumcisions performed in United States hospitals, the rate of complications during and in the first month after the procedure was approximately 0.2 percent [4,5].
- A systematic review identified 16 prospective studies of complications following neonatal and infant circumcision by a variety of providers from 12 countries and primarily using the Plastibell [6]. The median frequency of any adverse event was 1.5 percent (range 0 to 16 percent) and the median frequency of any serious adverse event was 0 percent (range 0 to 2 percent); nine studies reported no serious adverse events, but three studies reported that 1 to 2 percent of boys had a serious complication, including amputation of the glans penis, infection requiring antibiotics and meatal ulcer. Complication rates were slightly lower in 10 retrospective studies.

Complications/sequelae of circumcision include:

- Inadequate skin removal, which may result in an unsatisfactory cosmetic appearance and revision of the procedure. This is a common complaint, although the frequency is poorly documented in the literature.
- Bleeding, which is usually mild and controlled with local pressure, but surgical intervention and transfusion may be required on rare occasions.
- Infection, which is usually mild and treated by local antibiotics, but sepsis can occur and death has been reported.

●Urethral complications, including urethrocutaneous fistula and meatal stenosis. Meatal stenosis is a potential consequence of circumcision but is not related to the procedure itself. This can occur when urine from a wet diaper irritates the exposed ventral urethral meatus (opening) of the circumcised penis and causes a chemical dermatitis (skin inflammation) with subsequent scarring. Meatal stenosis rarely if ever occurs in uncircumcised males since the foreskin protects the meatus from scarring.
●Glans injury, including penile amputation.
●Removal of excessive skin, which may result in a denuded penile shaft.
●Epidermal inclusion cyst.
●Adhesions, which range from mild to dense.
●Skin bridges.
●Cicatrix (a circumferential scar that usually develops at the incision line and is often associated with a hidden penis).
●Complications from anesthesia.

Other considerations — Some men believe that the end of the penis becomes less sensitive when the foreskin is removed and that sexual sensation may be decreased. However, studies have failed to show any decrease in sensation, arousal or orgasm in circumcised males.

Parents should be aware that some health plans do not cover the cost of circumcision. Parents should call their health plan directly to find out if the procedure is covered.

PAIN CONTROL DURING CIRCUMCISION

Studies in newborns have shown that signs of stress/pain occur during the circumcision procedure. These include crying, increased heart rate, and increased blood pressure.

All physicians in Tillamook give numbing medication to help with pain during and after the procedure, however, babies still feel the procedure and circumcisions do cause discomfort in varying amounts in all babies. In Tillamook we also use, oral sugar solutions, and acetaminophen.

CIRCUMCISION PREPARATION AND PROCEDURE

Before circumcision, the doctor who will perform the procedure will review the informed consent. This is a discussion of the reasons for circumcision, the benefits, risks, and alternatives, and ensures that the parents understand what will happen during the procedure.

There are a few situations that may cause a circumcision to be delayed. For example, in babies who are born prematurely, circumcision is usually delayed until they are ready to be discharged from the hospital. Babies who are born with a defect of the penis should be evaluated by a urologist, who may recommend delaying circumcision. If there is a family history of a bleeding disorder or the baby has bleeding problems, circumcision is delayed until it has been determined that the baby is not at increased risk of bleeding during the procedure.

Technique — The infant is placed in a restraint (picture 2). The penis and an area of skin around the base of the penis are thoroughly cleaned.

There are several techniques for performing circumcision; the choice of which technique is used depends upon the physician's preference and experience. The three major methods of circumcision are the Gomco clamp, the Plastibell device, and the Mogen clamp. The procedure takes approximately 15 to 30 minutes.

Post-procedure care — After the circumcision is completed, a gauze dressing is usually applied (picture 3A-B). Use of a lubricant under the gauze helps to prevent it from sticking to the glans. The gauze should be removed and replaced with every diaper change for 24 hours. The circumcision site is cleaned with warm water and a cotton ball once or twice a day. Normally the infant urinates within 12 hours of the procedure.

After the first 24 hours, the gauze is omitted and the lubricant is applied directly to the penis for three to five days. This helps keep the area clean and keeps the wound site from adhering to the diaper. At first, the penis will appear red (picture 4). In a few days, a soft yellow scab will develop. This is normal and will go away in a few days. During this process, parents should watch for worsening redness, swelling, bleeding (larger than a quarter-size on the diaper) or drainage that does not go away. Any of these signs should prompt a call to the infant's health care provider.

Usually the penis needs no further care once it has healed.

PUBLIC AND PROFESSIONAL OPINIONS ON CIRCUMCISION

Professional societies and lay groups have expressed a wide range of views concerning the advantages and disadvantages of routine circumcision.

- In 2012, the American Academy of Pediatrics (AAP) task force on circumcision of the male infant concluded that "the health benefits of newborn male circumcision outweigh the risks; furthermore, the benefits of newborn male circumcision justify access to this

procedure for families who choose it. Specific benefits from male circumcision were identified for the prevention of urinary tract infections, acquisition of HIV, transmission of some sexually transmitted infections, and penile cancer. Male circumcision does not appear to adversely affect penile sexual function/sensitivity or sexual satisfaction" [7]. Compared with their previous statement, this statement is a stronger affirmation of the health benefits of circumcision. However, the AAP did not recommend routine circumcision. They said, "Parents should weigh the health benefits and risks in light of their own religious, cultural, and personal preferences, as the medical benefits alone may not outweigh these other considerations for individual families" [7].

MAKING A DECISION ABOUT CIRCUMCISION

Making the decision to circumcise an infant can be difficult for some parents. A father may be concerned that his son's penis appear similar to himself or to other men. Some parents may be concerned about the risks versus the benefits of the procedure. Other parents have no difficulty making a decision because of cultural or religious rules that require circumcision.

A decision is best made before the baby is born, although parents should feel comfortable discussing their questions or concerns with their health care provider after the child's birth. The procedure can be performed at the hospital before the mother and baby are discharged, or can be performed as an outpatient procedure with local anesthesia as late as three months after birth. After three months, the procedure usually requires general anesthesia.