

Policy Statement On Circumcision

This revised policy has been developed at the instigation of the Paediatrics and Child Health Division of The Royal Australasian College of Physicians, following critical literature analysis by a working party of representatives from a number of professional organisations.

The policy represents an agreed position adopted by the following:

- Paediatrics & Child Health Division of The Royal Australasian College of Physicians
- Australasian Association of Paediatric Surgeons
- New Zealand Society of Paediatric Surgeons
- Urological Society of Australasia
- Royal Australasian College of Surgeons
- Paediatric Society of New Zealand

The purpose of this document is to assist clinicians in their discussions with parents who are considering having this procedure undertaken on their male children. A separate parents' brochure can be purchased from the Paediatrics and Child Health Divisional Office, by email: paed@racp.edu.au or phone: (02) 9256 5409.

September 2004

ROUTINE CIRCUMCISION OF MALE INFANTS AND BOYS - SUMMARY STATEMENT

The Paediatrics and Child Health Division, The Royal Australasian College of Physicians (RACP) has prepared this statement on routine circumcision of infants and boys to assist parents who are considering having this procedure undertaken on their male children and for doctors who are asked to advise on or undertake it. After extensive review of the literature the RACP reaffirms that **there is no medical indication for routine neonatal circumcision.**

Circumcision of males has been undertaken for religious and cultural reasons for many thousands of years. It remains an important ritual in some religious and cultural groups. In Australia and New Zealand, the circumcision rate has fallen considerably in recent years and it is estimated that currently only 10%-20% of male infants are routinely circumcised. Circumcision is now generally performed with local or general anaesthesia, and when the procedure is carried out for a medical indication this is usually outside the neonatal period. The best recognised medical indication for circumcision is phimosis.

In recent years there has been evidence of possible health benefits from routine male circumcision. The most important conditions where some benefit may result from circumcision are urinary tract infections, HIV and later cancer of the penis.

- Urinary tract infections affect 1%-2% of boys, and may be about 5 times less frequent in circumcised boys, whilst circumcision has a complication rate of 1% to 5%. On current evidence routine neonatal circumcision cannot be supported as a public health measure on this basis.
- While there is some evidence, particularly from sub-Saharan Africa, that male circumcision reduces the risk of acquisition of HIV, evidence is conflicting and would not justify an argument in favour of universal neonatal circumcision in countries with a low prevalence of HIV.
- Penile cancer is a rare disease with an incidence of around 1 per 100,000 in developed countries. Even though the evidence suggests neonatal circumcision may reduce the risk 10-fold, the rarity of the condition and its other recognised predispositions are such that universal circumcision is not justified on these grounds alone.

The complication rate of neonatal circumcision is reported to be around 1% to 5% and includes local infection, bleeding and damage to the penis. Serious complications such as bleeding, septicaemia and meningitis may occasionally cause death.

The possibility that routine circumcision may contravene human rights has been raised because circumcision is performed on a minor and is without proven medical benefit. Whether these legal concerns are valid will be known only if the matter is determined in a court of law.

If the operation is to be performed, the medical attendant should ensure this is done by a competent operator, using appropriate anaesthesia and in a safe child-friendly environment.

In all cases where parents request a circumcision for their child the medical attendant is obliged to provide accurate information on the risks and benefits of the procedure. Up-to-date, unbiased written material summarising the evidence should be widely available to parents.

Review of the literature in relation to risks and benefits shows there is no evidence of benefit outweighing harm for circumcision as a routine procedure in the neonate.

1. RECENT LITERATURE AND POLICY STATEMENTS

There is an extensive literature on circumcision in general, and male neonatal circumcision in particular. This includes a number of books^{1,2} and recent reviews³ including those by the Canadian Paediatric Society (CPS)⁴ and the American Academy of Pediatrics (AAP)^{5,6}.

The CPS recommended "Circumcision of newborns should not be routinely performed" (reaffirmed February 2001: (www.cps.ca/english/statements/FN) and the AAP concluded "we can not recommend a policy of routine newborn circumcision". (www.aap.org/mrt/factsCir.htm).

Following the present review of the evidence, the RACP concurs with these statements and endorses the 1996 statement of the Australian College of Paediatrics (now the Division of Paediatrics and Child Health of RACP) and Australasian Association of Paediatric Surgeons that "Neonatal male circumcision has no medical indication".

2. HISTORY OF CIRCUMCISION

Circumcision of males has been undertaken for religious and cultural reasons for many thousands of years. It probably originated as a hygienic measure in communities living in hot, dusty and dry environments. It remains an important ritual in several religious and cultural groups.

Medicalisation of male circumcision seems to have occurred in the 19th century in English speaking countries. Being circumcised was a sign that the individual had been delivered by a doctor rather than by a midwife¹. Over the years, circumcision has been seen as a cure or preventative measure for all manner of conditions including paralysis, insanity, epilepsy, tuberculosis, enuresis, masturbation and phimosis and more recently for prevention of urinary tract infections in boys, and penile cancer and sexually transmitted diseases in adult males.

During the last 50-100 years, routine neonatal male circumcision became widespread in many English speaking countries. Until the late 1960's or early 1970's, it was generally performed without any form of anaesthesia.

The rates of circumcision vary from country to country, being about 60% in the USA (with recent data suggesting falling rates, particularly amongst the growing Hispanic population), 30% in Ontario, Canada, 6% in the UK (rates fell when circumcision became unavailable on the NHS), and less than 2% in Scandinavia. Estimates for Australia range between 10%-20% and for New Zealand somewhat less than that. Most circumcisions for a medical indication are performed under general anaesthesia well beyond the neonatal period. The procedure is more common in Pacific Island communities where traditional circumcisers are often used.

3. ANATOMY OF THE FORESKIN

3.1 BACKGROUND

The foreskin is a redundant fold of penile skin which overlaps the glans penis⁷. It first appears at eight weeks of fetal life and soon grows forwards over the glans penis. By 16 weeks it covers the glans. At this stage the epidermis of the under-surface of the foreskin is continuous with the epidermis covering the glans. Both consist of squamous epithelium. The foreskin (prepuce) and glans penis enclose a potential cleft, the preputial sac. A preputial space is then formed by a process of desquamation, and the prepuce increasingly separates from the glans⁸.

At the time of birth this process is incomplete in the vast majority of boys, and the foreskin is non-retractable. Complete separation of the foreskin with full retractability occurs in almost all boys by the time of puberty⁹.

3.2 CARE OF THE FORESKIN

It is normal for the inner surface of the foreskin to be fused to the glans in newborn males. Separation of the foreskin from the glans occurs spontaneously during childhood. By five years of age most of boys are able to retract their foreskin⁹. A small percentage of boys are unable to fully retract their foreskin until puberty.

The foreskin requires no special care during infancy. **It should be left alone**¹⁰. Attempts to forcibly retract it are painful, often injure the foreskin, and can lead to scarring and phimosis.

Later in childhood, the foreskin can be gently retracted to the point where resistance is met and the distal portion of the penis and the urethral meatus become visible. The glans and the inner-surface of the foreskin can be cleaned along with the rest of the body once separation has occurred and the foreskin is fully retractable¹¹.

By around the time of puberty, all uncircumcised boys should be able to retract their foreskin and clean underneath it in the bath or shower. It is important that they always return the foreskin to its original position after they have finished. If the foreskin is left retracted behind the glans, it may swell up and become painful (paraphimosis).

As the foreskin separates from the glans, dead skin cells will collect between the two layers. These dead cells appear as white crumbly or cheesy material and have been termed smegma. Smegma may produce a noticeable (and often asymmetrical) swelling beneath the foreskin. This material rarely causes problems and usually discharges spontaneously. Accumulation of smegma assists the normal process of separation of the inner surface of the foreskin to the glans of the penis in the young boy. Infection of smegma as it is released may cause inflammation.

Although there is evidence that boys who are uncircumcised have a higher incidence of urinary tract infections, there is no evidence that the increased incidence of infection is due to poor hygiene.

4. MEDICAL INDICATIONS FOR CIRCUMCISION

4.1 PHIMOSIS

Pathological phimosis, which needs to be distinguished from the normal non-retractile foreskin of early childhood¹², is an indication for circumcision^{13,14}. The condition occurs in at least 1% of boys^{15,16}, is rare in the first five years of life and may be due to secondary cicatrisation of the foreskin due to balanitis xerotica obliterans (BXO)^{17,18}. Topical application of steroid ointment may resolve phimosis in the majority of boys^{19,20} except in those with BXO where steroids are rarely successful.

Physiological phimosis (normal narrowing of the foreskin that may make visualisation of the glans difficult during infancy) will normally resolve by the age of three to four years and requires no treatment. If pathological (ie non-physiological) phimosis fails to respond to steroid cream/ointment applied to the tight part of the foreskin two to four times a day for two to six weeks, there is a reasonable probability that it will cause problems in the future and the child may well benefit from circumcision. In a proportion of boys the phimosis redevelops after cessation of applications of steroid treatment.

4.2 RECURRENT BALANOPOSTHITIS

Recurrent balanoposthitis is a relative indication for circumcision. The condition needs to be distinguished from the more benign ammoniacal dermatitis¹³. Balanoposthitis affects 3%-4% of boys, and is recurrent in about 1% of boys²¹. Balanoposthitis and balanitis may also occur in adults. Diabetes may be a risk factor²².

4.3 PARAPHIMOSIS

Recurrent paraphimosis is extremely rare and may represent a relative indication for circumcision. In children, the condition is usually secondary to forceful retraction of the foreskin and is associated with a minor degree of phimosis. In adults, paraphimosis typically occurs in the elderly. Men requiring frequent bladder catheterisation are particularly at risk²³. Treatment in children involves manipulation of the foreskin forwards over the glans, and requires some form of analgesia (general or local). In a minority of children, after reduction of paraphimosis circumcision may be required, if topical application of a steroid preparation fails to resolve the underlying phimosis, or if paraphimosis recurs.

5. THE ROLE OF CIRCUMCISION IN PREVENTING OTHER CONDITIONS

5.1 URINARY TRACT INFECTIONS (UTIS)

The cumulative incidence of UTI in boys by the age of about 10 is 1-2%^{24,25}. Ginsburg and McCracken²⁶ first reported a higher incidence of UTIs in uncircumcised boys. This is biologically plausible because uropathogens have been shown to bind to the foreskin and then gain access to the renal tract via the ascending route: removal of the foreskin would abolish this mechanism. Other factors may be important in determining the prevalent organisms. For example, rooming in with mother may favour colonisation with non-pathogenic bacteria^{4,27}, and breast feeding has been associated with lower rates of UTI than bottle feeding in one brief report²⁸.

There have now been ten case control and cohort studies published, which have evaluated the association between circumcision and UTIs^{24,29-37}, but no randomised controlled trials have been done. All have demonstrated a statistically significant reduction in risk of UTI in circumcised males compared with uncircumcised males, with most data concerning the risk of UTI during infancy. The magnitude of the reported protective effect varies from a three-fold reduction to a twelve-fold reduction in risk of UTI due to circumcision. These data may be used to assess possible benefits and harm from neonatal circumcision. Assuming an annual incidence of UTI of 1% during the first year of life for uncircumcised boys, the risk of UTI may be reduced from 10 per 1,000 to 1-3 per 1000, a difference of 7-9 per 1,000, or a need to circumcise between 110 to 140 boys to prevent one UTI during the first year of life.

On the other side of the equation, taking a mid-range figure of 2% (20 per 1,000) for major complications from circumcision, mainly from haemorrhage and infection (see earlier section), for every 1,000 infants circumcised, about eight fewer will develop a UTI but 20 will develop a significant complication. Assuming that the "harm" of a UTI is about the same as a complication, routine circumcision is difficult to advocate as a public health measure.

Other figures can be used to come to a different conclusion but even then many parents and caregivers would believe this should not be the only consideration³⁸.

The benefit-harm trade-off is also sensitive to the baseline risk of UTI. Assuming the same protective benefits of circumcision for the prevention of UTI extends to boys at higher risk of UTI, such as those with underlying renal tract abnormalities, then is it likely that a small group of boys, who continue to have symptomatic recurrent UTI despite conventional clinical care such as chemoprophylaxis, will benefit from circumcision. The risk of UTI in these boys is not 1% as it is in the general population, but closer to 30%^{39,40} so that only 4-5 boys would need to be circumcised to prevent UTI, or 200-270 UTIs prevented for every 1000 circumcisions with about 20 complications.

In summary, routine circumcision in boys cannot be justified on the basis of preventing a UTI. On the other hand, there may be a role for circumcision in boys with recurrent symptomatic UTI and/or underlying renal tract abnormalities.

5.2 SEXUALLY TRANSMITTED INFECTIONS (STIS)

The published evidence concerning the relationship between circumcision and STI is often conflicting⁴¹. A history of intercourse with an uncircumcised man may be a risk factor for herpes simplex type 2 (HSV-2) infection in women^{41a}. An Australian study from 1983⁴² suggested herpes genitalis, candidiasis, gonorrhoea and syphilis were all more common in uncircumcised men. A more recent Australian study⁴³, however, suggested that circumcision has no significant effect on the incidence of common STI's. One study has suggested a higher risk of non-gonococcal urethritis among circumcised men than among uncircumcised men⁴⁴. Genital ulcer disease, on the other hand, has been reported as being more common among uncircumcised men, and those with a genital ulcer are more likely to contract HIV.

There is increasing evidence, particularly from sub-Saharan Africa, which suggests an increased risk of female to male transmission of HIV in uncircumcised men⁴⁵⁻⁴⁸. However, how much circumcision could contribute to ameliorate the

current epidemic of HIV is uncertain⁴⁹. Whatever the future direction of this debate it can not be seen as an argument in favour of universal neonatal circumcision in countries with a low prevalence of HIV.

5.3 HUMAN PAPILLOMA VIRUS AND CARCINOMA OF THE CERVIX

A recent international study reported an increased risk of human papilloma virus (HPV) infection in uncircumcised men who indulged in high-risk behaviours, compared with circumcised men⁵⁰. Monogamous women whose male partners had six or more sexual partners and were circumcised had a lower risk of cervical cancer than women whose partners were uncircumcised. Public health measures aimed at early detection have been shown to decrease cervical cancer fatalities; targeting sexually promiscuous men to decrease risk taking and increase condom use may inhibit sexual transmission of HPV and prophylactic vaccination against HPV is being developed. At present it is not possible to know whether advocating neonatal circumcision would be of additional benefit to these strategies⁵¹.

5.4 CARCINOMA OF THE PENIS

Carcinoma of the penis is a rare condition, with an annual incidence of approximately 1:100,000 men in developed countries, regardless of whether there is a high or a low circumcision rate^{4,5,5a}. There is evidence that neonatal circumcision confers protection from carcinoma of the glans penis but not of the penis shaft⁵²⁻⁵⁶. Even though the evidence suggests neonatal circumcision does reduce the risk of carcinoma 10-fold, universal circumcision is clearly not justified on these grounds⁴⁶.

Other risk factors for penile cancer include phimosis (which is limited to uncircumcised men), genital warts, increased number of sexual partners and cigarette smoking^{57,58}. It has been hypothesised that good penile hygiene may help prevent both phimosis and penile cancer⁵⁹.

6. COMPLICATIONS OF CIRCUMCISION

Apart from pain and distress, and the side effects of local anaesthesia, there have been many complications of circumcision reported^{5,60,61}. Most complications are minor, but some can be more severe, such as penile amputation and even death. The overall reported rate of complications after circumcision varies between 0.06%⁶² to 55%⁶³ depending on the situation in which it is performed and the precise definition of complication. Most series describe a complication rate of about 2%-10%⁶⁴⁻⁶⁶. A detailed summary of complications has been provided by Williams and Kapila⁶¹, and includes the following:

- Haemorrhage
- Infection
- Glanular ulceration
- Meatal stenosis
- Inadvertent injury of the urethra (fistula)
- Too much skin removed
- Loss of penis (1 in 1,000,000)
- Anaesthetic complications
- Psychological trauma
- Secondary phimosis
- Secondary chordee.

The true incidence of **major** complications after newborn circumcision is unknown but is reported to be from between 0.2% and 0.6%⁵ to 2%-10%⁶¹. The most frequent acute problem is haemorrhage, and may indicate an underlying vitamin K deficiency or haemophilia. Infection is usually minor, but rarely septicaemia and meningitis may occur. Longer term complications include meatal stenosis, cutaneous tags, poor cosmetic appearance, and psychological trauma. Children with prominent prepubic fat may have a concealed penis following surgery which tends to resolve at puberty.

6.1 ABSOLUTE CONTRAINDICATIONS TO NEONATAL CIRCUMCISION

Contraindications to routine neonatal circumcision include:

- Hypospadias and other congenital anomalies of the penis, e.g. epispadias
- Chordee (ventral angulation of the penis)
- Buried penis

- Sick and unstable infants
- Family history of a bleeding disorder or an actual bleeding disorder
- Inadequate expertise and facilities.

7. LEGAL AND BIOETHICAL ISSUES

The legal and bioethical issues surrounding male neonatal circumcision have been discussed in recent legal journal reviews^{60,67}. Parents have the right, indeed duty, to make informed medical decisions on behalf of their children. It is equally established in law that parents may not make decisions about their child's medical care when such a decision is not in the child's best interests. Many legal precedents exist to establish that Courts will deny parents the right to refuse medically indicated procedures required by their child that are contrary to their religious beliefs.

The difficulty with a procedure which is not medically indicated is whether it may still be in the child's "best interests" (that is, in the case of circumcision, decreasing the risk of UTI and penile cancer, and ensuring acceptance within a religio-cultural group) on the one hand⁶⁰ or whether it may constitute an assault upon the child and be a violation of human rights on the other⁶⁷. Arguments to justify the "best interests" case are based upon data to suggest a decreased risk of medical conditions later in life, none of which, with the possible exception of UTI's in boys, requires a decision in the neonatal period, and this could be seen to be an argument to defer a decision until the individual can express his own preferences. Generally the courts have avoided jurisdiction in this area⁶⁰. However, there has been a 1999 UK case where separated parents disagreed on the question of circumcision with the court finding circumcision not to meet the "paramountcy of welfare" standard and not be in the best interests of the child⁶⁰. One issue, which is agreed, is that before parents make a decision about circumcision they should have access to unbiased and clear information on the medical risks and benefits of the procedure. Whether this has always been the case in the past is uncertain, and many parents make such a decision on cultural and religious grounds alone⁶⁸.

8. ANALGESIA

Until recent times a majority of neonatal circumcisions were performed without analgesia. Stated justifications for not using analgesia include a belief that circumcision causes minimal pain, that rapid expert circumcision causes less pain than that engendered by local anaesthetic procedures and that newborns have no memory of pain. There are good experimental data to refute the first two of these contentions and, even though the third suggestion can not be considered a sufficient reason to withhold analgesia, there is an emerging body of evidence to show that painful neonatal experiences do have long term consequences, even if not rooted in conscious memory⁶⁹. Taddio reported that circumcised boys had higher pain and cry scores during routine immunisation at 4-6 months of age than uncircumcised boys⁷⁰ and scores were again higher if circumcision was unaccompanied by analgesia compared with those receiving topical anaesthesia⁷¹.

Newborn infants subjected to a variety of noxious stimuli have hormonal, physiological and behavioural responses⁷². There have been **two recent consensus statements on the prevention and management of pain in the newborn**^{73,74} which should be used to guide the clinical approach to analgesia for circumcision *if such an operation should be deemed necessary*. Both statements emphasise that compared with older age groups newborns may experience a greater sensitivity to pain, such pain may have long term consequences, and a lack of behavioural response (for example lack of crying) does not necessarily indicate a lack of pain.

While general anaesthesia will often be used for circumcision beyond the neonatal period it has rarely been considered as an option for newborn circumcision. Local or regional anaesthesia for newborn circumcision has been provided by local application of a eutectic mixture of local anaesthetics (EMLA cream), dorsal penile nerve block (DPNB), penile ring block (PRB) and caudal epidural block.

Recent trials have demonstrated that combined analgesia and local anaesthesia (for example, pre- and post-operative paracetamol, EMLA cream to the abdomen and foreskin, oral sucrose, and DPNB or PRB⁷⁵), are more effective than either alone^{74,76,77}. In Australia circumcisions undertaken in boys older than six months are mostly performed under a general anaesthetic, with local anaesthetic often being administered during the general anaesthetic.

9. TECHNIQUE OF CIRCUMCISION

When a circumcision is performed in an older child it is usually performed under general anaesthesia and regional block⁷⁸.

There are numerous descriptions of circumcision but in most, the following steps are undertaken⁷⁸:

1. Any residual adhesions between the inner surface of the foreskin and the glans are separated until the coronal groove is fully exposed circumferentially. Any smegma is removed.
2. The foreskin is returned to its normal position and a dorsal slit is made, stopping short of the coronal groove.
3. A similar manoeuvre is performed on the ventral surface as far as the frenulum.
4. The foreskin is excised around each side leaving a rim of inner surface adjacent to the coronal groove.
5. The edges of the foreskin are retracted to enable haemostasis. Usually the vessels are ligated with absorbable suture, or diathermied.
6. The edges of the foreskin are sutured around the circumference with interrupted absorbable sutures.
7. No circumferential dressing is applied, because of the risk of making the glans ischaemic if swelling occurs.

Potential intra-operative problems include:

1. Removal of excessive skin
2. Removal of inadequate skin
3. Haemorrhage
4. Injury to the urethra

Early postoperative complications include bleeding, infection and glanular ulceration.

APPENDIX

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