Circumcision: a surgical perspective

MARTIN J. GLASSON MB BS, FRCS, FRACS

Today, fewer boys are circumcised in Australia than half a century ago and the majority of these operations are performed for nonmedical reasons in boys with a normal prepuce. With the diversity of opinion regarding the issue involving both medical circles and the general public, what is the medical practitioner's role? Dr Glasson presents a surgeon's view.

Circumcision, the operation to remove the prepuce (foreskin), has been in wide use since prehistoric times. In Australia, fewer boys are circumcised now than 50 years ago, but the subject still provokes considerable and often emotional debate. At one end of the spectrum is the idea that all male humans should be circumcised, preferably at birth, regardless of race or creed;[1] at the other end is the conviction that routine circumcision is quite wrong and that the unfortunate men who have been circumcised should consider preputial reconstruction.[2] These opposing viewpoints are irreconcilable.

Medical aspects

Indications

Traditionally, medical students are taught that the indications for circumcision are phimosis, paraphimosis and recurrent suppurative balanitis.

Phimosis is stenosis of the prepuce that causes the underlying urethral meatus and glans penis to not be seen when an attempt is made to retract the prepuce. Phimosis resulting from balanitis xerotica obliterans (usually affecting school-aged boys) is an unequivocal indication for circumcision. Phimosis with otherwise normal preputial skin almost always responds to betamethasone valerate (0.1% Betnovate, Celestone-V), a topical corticosteroid, and circumcision can thus be avoided.[3]

Paraphimosis is an acute condition in which the prepuce is retracted to coronal level and remains there, acting as a tourniquet, with resultant congestion and oedema of the glans. Frequently, paraphimosis is successfully reduced by manipulation and subsequent circumcision is optional. Some cases require a dorsal slit or circumcision as an urgent procedure.

Dr Glasson is former Head, Department of Surgery, The Children's Hospital at Westmead, and Consulting Paediatric Surgeon, Royal North Shore Hospital, Sydney, NSW.

Recurrent suppurative balanitis requiring systemic antibiotic therapy is an uncommon but valid indication for circumcision.

Circumcision is sometimes indicated for recurrent urinary tract infection in boys who have normal imaging studies (renal ultrasound examination and micturating cystourethrogram) and those with a major urological abnormality (such as vesicoureteric reflux) when infections occur despite chemoprophylaxis.

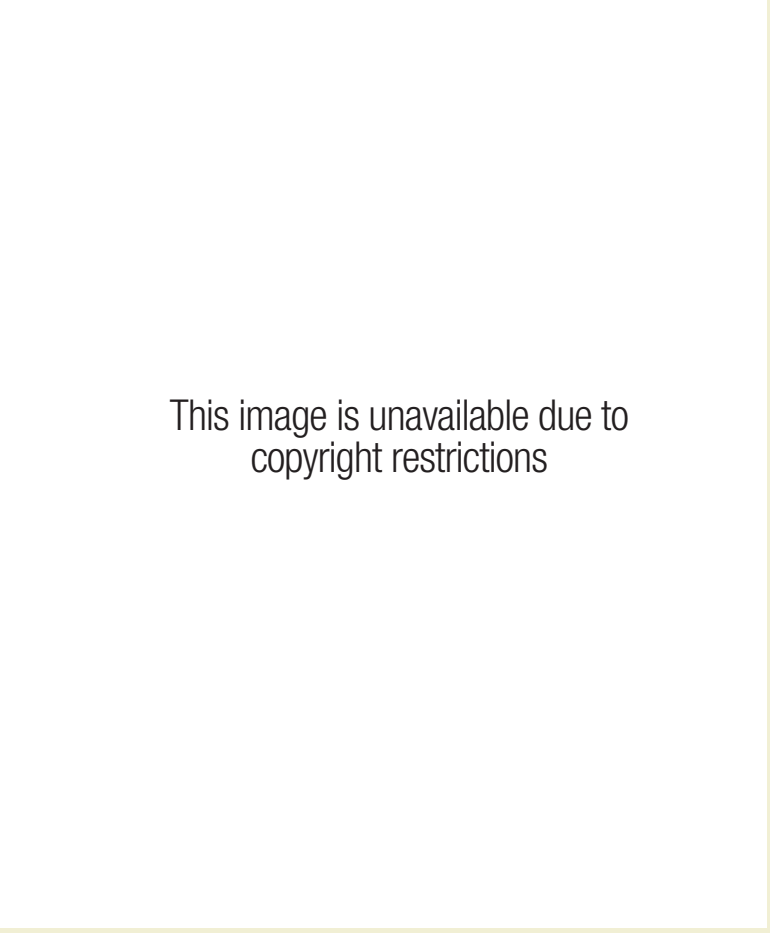
Contraindications

Circumcision as an isolated operation is contraindicated in boys with hypospadias because the prepuce will be used in the repair with the aim of producing a straight penis with the urethral meatus on the tip of the glans and an acceptable cosmetic appearance.

Coagulopathies such as haemophilia are not necessarily a contraindication for circumcision, but perioperative administration of coagulation factors will be essential.

Elective circumcision

When parents seek circumcision for their son, a discussion of the benefits and risks of the procedure is essential (see the box on the page opposite, and the discussion of complications below). In this dialogue, the clinician should adopt a neutral stance aiming to provide information and answer questions in an honest and unbiased manner. More often than not the family has a firm commitment to the operation because of religious, cultural or social factors or perhaps a simple preference. However, sometimes the outcome of the consultation is a decision not to proceed with the circumcision.



FPG

The operation

The prepuce has inner and outer layers. Proximally, the inner layer is attached to the corona at the base of the glans penis whereas the outer layer merges with the penile shaft skin. At circumcision, the first step is to separate adhesions between the inner layer and the glans. After cleaning the separated prepuce, circumferential incisions are made into both layers to allow their dissection and removal (there are many methods of making and placing the incisions). Haemostasis is achieved (preferably with bipolar diathermy), and the cut edge of shaft skin is sutured to the residual inner layer close to the corona using absorbable suture material (Figure 1).

Anaesthetic considerations

Circumcision under general anaesthesia by a skilled surgeon has little morbidity. Some patients will develop ulceration of the glans penis as a consequence of separating the prepuce from the glans; these cases respond well to topical antibiotic therapy.

With a qualified anaesthetist in a hospital setting, general anaesthesia is not associated with particular risk, but it is an intricate undertaking in very early life. Accordingly, elective circumcision is best deferred until a child is at least 6 months of age so that, with day-stay arrangements and general anaesthesia, he is in the hospital precincts for a very short time and can rapidly return to normal.

The penis is an extremely sensitive organ and a focal point for the emotions, yet many circumcisions are performed as an office procedure with the patient conscious. This practice has rightly been described as barbaric.[12] It also predisposes the

What are the effects of circumcision? A look at the evidence

Urinary tract infections

The case for routine circumcision at birth has been supported by studies in North America suggesting that the incidence of urinary tract infections in the first year of life is 10 or 20 times higher in uncircumcised boys than in boys who were circumcised during the first month.[4] Foreskin removal allegedly prevents uropathogens resident in the area from ascending the renal tract. However, a 1998 Canadian study showed a much lower risk of hospital admission for urinary tract infections for the uncircumcised cohort, and that 195 neonatal circumcisions are needed to prevent one such admission in the first year.[5] The relevance of circumcision to urinary tract infection has probably been exaggerated.

Sexually transmitted diseases

An apparently increased risk of HIV-AIDS and genital ulcer disease in uncircumcised men has been highlighted by those who promote routine circumcision.[6] However, a 1999 literature review has exploded this theory by demonstrating that a man with a circumcised penis is at greater risk of both acquiring and transmitting the infection than a man with an uncircumcised penis.[7]

A recent study in Baltimore concluded that women with uncircumcised partners are not at increased risk of vaginal infections such as gonorrhoea and chlamydia.[8]

Carcinoma

Circumcision of newborn babies has been claimed to exert a highly protective effect against invasive penile carcinoma and a less protective effect against carcinoma *in situ* occurring in adult life.[9] However, the influence of other potentially relevant variables (such as the frequency of intercourse) is not known and, in any event, penile carcinoma is very rare. Furthermore, a report of penile carcinoma in a 76-year-old circumcised man concluded that men who had been circumcised after 1 month of age may be at higher risk for penile cancer than those who had never been circumcised.[10]

Sexual pleasure

It is not possible to make an accurate appraisal of sexual pleasure (for either partner) resulting from a circumcised penis compared with an uncircumcised penis, and the issue is not usually discussed. A recent study found that women prefer uncircumcised partners.[11]

Figure 1. An optimal cosmetic result immediately following circumcision under general anaesthesia.

Figures 2a and b. Poor cosmetic results after circumcision without general anaesthesia. a (left). Removal of insufficient skin. b (right). Much residual inner layer giving a 'frilled neck lizard' appearance.

patient to the more horrible complications – the surgeon has a moving target and is in a hurry, asepsis is not guaranteed, haemostasis is less certain and an unhappy cosmetic result is more likely (Figures 2a and b). Patients – even neonates – inevitably experience excruciating pain, which is unacceptable. Despite the protestations of protagonists, regional nerve blocks (dorsal penile, ring or caudal) do not provide complete pain relief.[13-15] Topical EMLA cream (a mixture of lignocaine and prilocaine) is ineffective.

Complications

The complications of circumcision, in descending order of frequency and ascending order of seriousness, are:

- glans ulceration
- local sepsis
- haemorrhage
- incomplete circumcision
- meatal stenosis
- removal of excess amounts of skin
- invasive sepsis (bacteraemia, septic arthritis, meningitis)
- urethrocutaneous fistula
- penile amputation (partial or total).

The incidence of these complications is influenced by factors relating to the operation, the anaesthetic and the operator. Inadequate control of bleeding points predisposes to postoperative haemorrhage; sloppy siting of the preputial incisions causes removal of incorrect amounts of skin. Inclusion of a segment of the urethral wall in a ligature produces urethrocutaneous fistula.

The operator

Medical practitioners should undertake only surgical procedures for which they have been trained. The community today demands high surgical standards and is increasingly litigious. General practitioners who undertake circumcision with general anaesthesia in a hospital setting should have no problem, but those who perform the operation as an office procedure do so at their peril. Incompetence will not be rewarded, as illustrated by two recent examples.

First, last year in New South Wales the Medical Tribunal deregistered a general practitioner for what was described in the newspapers as 'botched circumcisions'. The Tribunal noted that the practitioner had performed well over 1000 circumcisions in his surgery, but that he had not had any particular training for the procedure. He had witnessed the operation while serving urology and obstetric and gynaecology terms as a resident medical officer. His patients varied in age up to 9 months. Inevitably, he found himself in deep trouble when serious complications occurred repeatedly.

Second, a patient who lost the prepuce and almost all of his penile shaft skin at circumcision performed in early infancy by a general practitioner required penile reconstruction with skin grafting as an adult. The patient initiated court proceedings and received a widely publicised payment of $360,000. At least one other similar case is in the medicolegal pipeline.

The message

The following recommendations are made in accordance with the published policies of the Paediatric Divisions of the Royal Australasian College of Surgeons and the Royal Australasian College of Physicians:

- Circumcision for nonmedical reasons should be discouraged but never refused, especially by specialist surgeons.
- When discussing circumcision with a child's parents, medical practitioners must be even handed and not express a personal preference for or against the operation. If the patient has no medical indication, this absence must be conveyed to his parents.

Reviewers' comments

This article presents the 'mainstream' view of circumcision. The author is strongly against neonatal circumcision without a general anaesthetic, which is still the method of choice for a considerable number of parents. Therefore, until there is no longer any such expectation within the community there will be conflict between parents and doctors.

Then, the reader should ask, should there be any expectation in the community for social and religious circumcision, especially if there is no medical indication for the surgery? There are inherent risks of circumcision and the anaesthesia. In our institution, circumcision is the procedure with the highest complication rate (albeit minor complications), and the routine operation consumes already scant resources that could better be used for patients who have more cogent indications for surgical treatment. Nevertheless, refusal is also fraught with difficulties, as there may be legal consequences if a patient then develops a medical complication, such as recurrent balanitis, that could have been prevented by circumcision. The dilemma will remain.

Mr W.D. Andrew Ford
Associate Professor
Department of Paediatric Surgery and Urology
Women's and Children's Hospital, Adelaide

The author's bias is clearly that GPs do not perform circumcisions, which flies in the face of two realities. First, GPs still do a lot of circumcisions, although admittedly in very limited cultural areas. Second, in the past GPs did the majority of circumcisions – and some of us developed considerable experience and skill.

My opinion is that GPs have been successfully deskilled at this procedure, and that they should not perform it unless they get training. Having said this and in spite of the list of complications, the procedure is not so complex that only surgeons can do it. Some GPs (including myself) could not be blamed for being suspicious of surgeons who try to shut out GPs from work that was originally the GP's province.

Dr Ian Chung
General Practitioner, Sydney

- Circumcision is unwise in the first weeks of life. The operation is best performed in hospital under a general anaesthetic when patients are at least 6 months of age.
- If circumcision is to be performed, the procedure must be done by a competent and experienced person. MT

The list of references is available on request to the editorial office.

Medicine Today 2001; 2(11): 108-113

Circumcision: a surgical perspective

MARTIN J. GLASSON MB BS, FRCS, FRACS

References

1. Morris, BJ. In favour of circumcision. Sydney: UNSW Press, 1999.
2. Circumcision Information Resource Centre Australia (CIRCA), PO Box 423, Moonee Ponds, Melbourne, and Sixth International Symposium on Genital Integrity, Sydney, 7–9 December 2000.
3. Wright JE. The treatment of childhood phimosis with topical steroid. Aust N Z J Surg 1994; 64(5): 327-328.
4. Wiswell TE, Roscelli JD. Corroborative evidence for the decreased incidence of urinary tract infection in circumcised male infants. Pediatrics 1986; 78(1): 96-99.
5. To T, Agha M, Dick, PT, Feldman W. Cohort study on circumcision of newborn boys and subsequent risk of urinary tract infection. Lancet 1998; 352(9143): 1813-1816.
6. Lavreys L, Rakwar JP, Thompson ML, et al. Effect of circumcision on incidence of human immunodeficiency virus type 1 and other sexually transmitted diseases: a prospective cohort study of trucking company employees in Kenya. J Infect Dis 1999; 180(2): 330-336.
7. Van Howe RS. Circumcision and HIV infection. Int J STD AIDS 1999; 10(1): 8-16.
8. Zenilman JM, Fresia A, Berger B, McCormack WM. Bacterial vaginosis is not associated with circumcision status of the current male partner. Sex Transm Infect 1999; 75(5): 347-348.
9. Schoen EJ, Oehrli M, Colby CD, Machin G. The highly protective effect of newborn circumcision against invasive penile cancer. Pediatrics 2000; 105(3): E36.
10. Cold CJ, Storms MR, Van Howe RS. Carcinoma *in situ* of the penis in a 76-year-old circumcised man. J Fam Pract 1997; 44(4): 407-410.
11. O'Hara K, O'Hara J. The effect of male circumcision on the sexual enjoyment of the female partner. BJU Int 1999; 83(Suppl 1): 79-84.
12. Carlsson E, Nilsson GD. Ritual circumcision of small boys is barbaric [article in Swedish]. Lakartidningen 1998; 95(18): 2107-2108.
13. Howard CR, Howard FN, Fortune K, et al. A randomized, controlled trial of a eutetic mixture of local anaesthetic cream (lidocaine and prilocaine) versus penile nerve block for pain relief during circumcision. Am Obstet Gynecol 1999; 181(6): 1506-1511.
14. Holliday MA, Pinckert TL, Kiernan SC, et al. Dorsal penile nerve block vs topical placebo for circumcision in low-birth-weight neonates. Arch Pediatr Adolesc Med 1999; 153(5): 476-480.
15. Stang HJ, Snellman LW, Condon LM, et al. Beyond dorsal penile nerve block – a more humane circumcision. Pediatrics 1997; 100(2): E3.