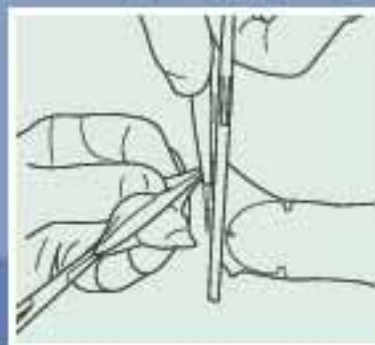




Manual for
Male Circumcision
under **Local**
Anaesthesia



World Health
Organization



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Male Circumcision
under **Local**
Anaesthesia

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PREFACE

Male circumcision has been performed on boys and young men for many years, primarily for religious and cultural reasons or as a rite of passage to mark the transition to adulthood. Data from cross-sectional epidemiological studies conducted since the mid-1980s showed that circumcised men have a lower prevalence of HIV infection than uncircumcised men. This finding was supported by data from prospective studies that showed a lower incidence of HIV infection in circumcised men than in uncircumcised men. Although the analysis adjusted for cultural and social factors associated with male circumcision, it was not clear from these studies whether promoting male circumcision among men who would not otherwise be circumcised would result in a lower incidence of HIV infection. To address this question, three randomized controlled trials were launched in Kenya, Uganda and South Africa in 2004. The results from the South African study were published in late 2005, and showed a 60% lower incidence of HIV infection among men randomly assigned to undergo immediate circumcision compared with those assigned to delayed circumcision. Confirmatory results from the two other trials were released in December 2006. These data led WHO and UNAIDS to recommend in 2007 that male circumcision should be considered an additional way of reducing risk of HIV infection in men and programmes for safe male circumcision should be expanded rapidly in countries and settings with generalized HIV epidemics and low prevalence of circumcision.

There is increased demand for male circumcision in several countries with a high incidence of HIV, but there is little technical guidance on how services can be safely expanded given the limited resources available. Reports of high complication rates following circumcisions performed on young men by traditional circumcisers in southern and eastern Africa are common, but the true incidence is not known. Technical guidance on the provision of safe male circumcision services is therefore necessary. Although circumcisions are widely performed by surgeons and general practitioners in an appropriate clinical environment, resources are not currently adequate to meet the anticipated increased demand.

This technical manual on male circumcision is aimed at providers of male circumcision services and programme managers. No attempt is made to describe all possible methods for male circumcision. The methods covered have been selected on the basis of their safety and practicality for use in resource-limited settings. The manual forms part of a comprehensive package, which includes training guides and materials, as well as a male circumcision quality improvement framework for use by providers, programme managers and national medical authorities to ensure high-quality services. While providing detailed technical information on the different surgical approaches, the manual also addresses broader issues of sexual and reproductive health of men, and emphasizes that male circumcision must be set within the context of other strategies for reducing risk of HIV infection. A full description of best practices for surgery and anaesthesia in resource-limited settings can be found in the WHO publication, *Surgical care at the district hospital* (Geneva, WHO, 2003).

The manual has been developed by the World Health Organization (WHO), in collaboration with the Joint United Nations Programme on HIV/AIDS (UNAIDS) and Jhpiego, as part of work to support countries in providing safe male circumcision services, and ensuring that circumcised men do not perceive themselves as fully protected against HIV and other sexually transmitted infections and consequently forgo other HIV risk-reduction strategies.

The manual was developed from reproductive health and surgery training materials, as well as on the basis of experience with service provision in Africa, the Eastern Mediterranean,

and developed countries. The manual and materials were reviewed by actual and potential providers of male circumcision services representing a range of health care and cultural settings where demand for male circumcision services is high.

This manual is one of several documents and guidelines developed by WHO, UNAIDS and partners to assist countries develop and implement programmes for safe medical male circumcision for HIV prevention within the context of their existing HIV prevention activities, and sexual and reproductive health programmes. All documents can be downloaded from the Clearinghouse on Male Circumcision for HIV Prevention (www.malecircumcision.org), a web site created to share technical and policy guidance, knowledge, tools and experience relevant to implementing male circumcision programmes. The most relevant documents include:

New data on male circumcision and HIV prevention: Policy and programme implications – provides guidance to policy makers and programme managers on issues that need to be considered and addressed when planning for programme scale-up.

Operational guidance for scaling up male circumcision services for HIV prevention. This document provides operational and programmatic guidance to decision-makers, programme managers and technical support agencies on scaling up programmes in the public and private sectors.

Male Circumcision Quality Assurance: A Guide to Enhancing the Safety and Quality of Services – outlines the roles and responsibilities of national and district programme managers for implementing safe quality male circumcision services and provides guidance for the planning of a national quality assurance programme. It defines ten quality standards against which the quality of services can be measured and used as part of a continuous process of service improvement. The guide is supplemented by the *Male circumcision services quality assessment toolkit* which is used by facility managers and providers to assess their own performance. It can be used by national and district managers to conduct external assessments of facilities. The toolkit includes a scoring tool, into which users can enter assessment findings and monitor progress towards meeting the standards.

Considerations for implementing models for optimizing the volume and efficiency of male circumcision services for HIV prevention. This document provides guidance to help programmes improve the efficiency of clinical and surgical activities so that they can strengthen their capacity to meet demand for male circumcision services. It addresses clinical techniques, staffing, facility space, client scheduling and flow, commodities management, cost efficiencies, and quality assurance. It also includes detailed model lists of equipment and supplies required to support a male circumcision programme.

A guide to indicators for male circumcision programmes in the formal health care system lists indicators that programmes can use to monitor and evaluate progress towards their programme objectives. Adaptable to different country situations, the guide includes indicators of demand for, and supply of, male circumcision services, as well as measures to assess secondary effects of the programme, such as changes in sexual behaviours at the individual and community levels.

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ABBREVIATIONS AND ACRONYMS USED IN THIS MANUAL

AIDS	acquired immunodeficiency syndrome
ALAT	alanine amino transferase
ARV	antiretroviral drugs
EMLA	eutectic mixture of local anaesthetics
HBV	hepatitis B virus
HCV	hepatitis C virus
HIV	human immunodeficiency virus
HPV	human papilloma virus
NRTI	nucleoside reverse transcriptase inhibitor
PEP	post-exposure prophylaxis
STI	sexually transmitted infection
UNAIDS	Joint United Nations Programme on HIV/AIDS
USA	United States of America
WHO	World Health Organization

Chapter 1

Benefits and risks of male circumcision

Summary

- Circumcision is the surgical removal of the foreskin, the fold of skin that covers the head of the penis (glans).
- The benefits of male circumcision include a reduced risk of urinary tract infections in childhood, a reduced risk of ulcerative sexually transmitted diseases in adulthood, protection against penile cancer, a reduced risk of cervical cancer in female sex partners, and prevention of balanitis (inflammation of the glans), posthitis (inflammation of the foreskin), phimosis (inability to retract the foreskin) and paraphimosis (inability to return the retracted foreskin to its original location).
- Complication rates following male circumcision are very low when it is performed by well equipped and trained health care providers.
- Numerous regional and global studies since the 1980s have noted a lower risk of HIV infection in circumcised men, as well as lower HIV prevalence in populations where male circumcision is common.
- Randomized controlled trials in Kenya, South Africa and Uganda have demonstrated that male circumcision reduces the individual man's risk of acquiring HIV infection by 60%.

INTRODUCTION

What is male circumcision?

Circumcision is the surgical removal of the foreskin, the fold of skin that covers the head of the penis. It is widely practised for religious and traditional reasons, often within the first two weeks after birth, or at the beginning of adolescence as a rite of passage into adulthood. It may also be performed for medical reasons to treat problems involving the foreskin.

How circumcision is performed

During a circumcision, the foreskin is freed from the head of the penis (glans) and removed. When done in a newborn baby, the procedure is simpler and quicker than in adolescents and adults. Superficial wound healing after circumcision in adults generally takes 5–7 days. However, about 4–6 weeks are needed for the wound to heal fully. In babies and young boys, the healing time is considerably shorter.

BENEFITS AND RISKS

Whether or not circumcision is necessary has been a subject of heated debate in many countries. In some settings, circumcision is

widely performed for religious or cultural reasons, while in others it is performed principally on medical grounds. In order to make an informed decision, every potential client or parent is entitled to full information about the benefits and risks of the procedure.

The decision of an adult or young man to be circumcised, and the decision of a parent to have his or her son circumcised, should be based on culture, religion, personal preference, and evidence-based information provided by a health care worker.

Benefits

If circumcision is being done for reasons other than the treatment of a specific medical problem, the health benefits are primarily preventive, and may only be realized long after the procedure. Circumcision may reduce the risk of acquiring some infections and related complications, but does not guarantee complete protection. Some of these conditions are common, while others are less so, and the degree of risk of the individual is likely to depend on his behaviour and where he lives. Although the strength of the evidence varies by disease, the benefits of circumcision include the following:

- It is easier to keep the penis clean.
- There is a reduced risk of urinary tract infections in childhood.¹
- Circumcision prevents inflammation of the glans (balanitis) and the foreskin (posthitis).
- Circumcision prevents the potential development of scar tissue on the foreskin, which may lead to phimosis (inability to retract the foreskin) and paraphimosis (swelling of the retracted foreskin resulting in inability to return the foreskin to its normal position).
- There is a reduced risk of some sexually transmitted infections (STIs), especially ulcerative diseases, such as chancroid and syphilis.^{2,3}
- There is a reduced risk of becoming infected with human immunodeficiency virus (HIV).^{4,5,6,7,8}
- There is a reduced risk of penile cancer.^{9,10}
- There is a reduced risk of cancer of the cervix in female sex partners.¹¹

Risks

As for any surgical procedure, there are risks associated with circumcision. While the benefits of circumcision may be wide-ranging and long-term, any problems generally occur during or soon after the procedure. They include:

- pain;
- bleeding;
- haematoma (formation of a blood clot under the skin);
- infection at the site of the circumcision;
- increased sensitivity of the glans penis for the first few months after the procedure;
- irritation of the glans;
- meatitis (inflammation of the opening of the urethra);
- injury to the penis;

- adverse reaction to the anaesthetic used during the circumcision.

These complications are rare when circumcision is performed by well trained, adequately equipped, experienced health care personnel, and are usually easily and rapidly resolved. Data from controlled trials show that fewer than 1 in 50 procedures result in complications.^{4,6}

MALE CIRCUMCISION AND HIV INFECTION

There is currently great interest in the role of male circumcision in preventing HIV infection. Research studies have shown a lower risk of infection in circumcised compared with uncircumcised men, as well as a lower prevalence of HIV infection in populations where male circumcision is common. These data led WHO and UNAIDS to recommend that male circumcision be promoted as an additional method of HIV prevention and that countries or settings with generalized HIV epidemics and low prevalence of circumcision should urgently scale up circumcision services.¹²

The evidence linking male circumcision and HIV

A systematic review and meta-analysis of 28 published studies found that uncircumcised men are 2–3 times more likely to be infected with HIV than circumcised men, with the difference being most pronounced in men with high exposure to HIV infection.⁵ A sub-analysis of 10 African studies, involving men considered to be at high risk of becoming infected, found a 3.4 times higher incidence of HIV infection among those who had not been circumcised.⁵ In a prospective study in Uganda of HIV-negative men whose partners were HIV-positive, none of 50 circumcised men became infected within two years, compared with 40 of 137 uncircumcised men.¹³

Male circumcision and regional differences in HIV prevalence

The geographical regions in sub-Saharan Africa where men are more commonly circumcised overlap with areas of lower HIV prevalence. An extensive study by the Joint United Nations Programme on HIV/AIDS (UNAIDS) investigated behavioural and other factors that could account for the large disparities in HIV prevalence across different African regions.¹⁴ A low prevalence of male circumcision and a high prevalence of genital herpes (which is more common in uncircumcised men) emerged as the principal determinants of the differences in HIV rates.

Table 1.1 shows the prevalence of HIV infection in a number of countries with low or high rates of male circumcision. Countries in sub-Saharan Africa where male circumcision is common (>80%) generally have HIV prevalence levels well below those of countries where circumcision is less common (<20%), despite the presence of other risk factors for heterosexual HIV transmission, such as high frequency of multiple sexual partners, low rates of condom use and high prevalence of other STIs. HIV prevalence in the countries of south and south-east Asia where nearly all men are circumcised (Bangladesh,

Indonesia, Pakistan, Philippines) remains extremely low, despite patterns of risk factors for HIV and other STIs similar to those found elsewhere in the region.

Table 1.1. HIV prevalence according to frequency of male circumcision

Low circumcision rate (<20%)		High circumcision rate (>80%)	
Country	HIV prevalence (%)	Country	HIV prevalence (%)
<i>Sub-Saharan Africa</i>			
Botswana	24.1	Benin	1.8
Malawi	14.1	Cameroon	5.4
Mozambique	16.1	Democratic Republic of Congo	3.2
Namibia	19.6	Gabon	7.9
Rwanda	3.1	Gambia	2.4
Swaziland	33.4	Ghana	2.3
Zambia	17.0	Guinea	1.5
Zimbabwe	20.1	Kenya	6.1
		Liberia	5.9
		Nigeria	3.9
		Sierra Leone	1.6
<i>South and south-east Asia</i>			
Cambodia	1.6	Bangladesh	<0.1
India	0.9	Indonesia	0.1
Myanmar	1.3	Pakistan	0.1
Nepal	0.5	Philippines	<0.1
Thailand	1.4		
<i>Source:</i> Updated from Halperin & Bailey, ¹⁵ using most recent UNAIDS data. ¹⁶			

A study in India followed 2298 men attending three STI clinics.¹⁷ A significantly lower incidence of HIV infection was observed among the circumcised men, although rates of STIs, such as syphilis and gonorrhoea, were similar. The similar incidence of STIs in the two groups indicates similar sexual risk behaviour, and suggests a biological rather than a behavioural explanation for the observed lower rate of HIV. However, it is important to note that, of the 191 circumcised men, 62% were Muslim. When non-Muslim men were assessed separately, the circumcised group was small and no significant protective effect was found. This illustrates the difficulty of separating the effect of male circumcision from that of other cultural factors. Only randomized controlled trials can determine the efficacy of male circumcision in reducing the risk of HIV infection.

Randomized controlled trials to assess the efficacy of male circumcision in reducing risk of HIV infection

In July 2005 the results of the Orange Farm Intervention Trial in South Africa were made public; they were subsequently published in November 2005.⁶ This was the first report from a randomized controlled trial of male circumcision as a means to prevent HIV infection. A total of 3274 uninfected men, aged 18–24 years, were randomly assigned to undergo circumcision either immediately or after 21 months. The incidence of HIV infection was found to be 60% lower among those who were circumcised. On the strength of these results, the Independent Data Monitoring Committee recommended that the men initially assigned to the delayed circumcision group should be offered the procedure without further delay, without waiting the full 21 months.

Two further trials on male circumcision and HIV infection were stopped in December 2006 and published in early 2007. Both trials involved random allocation of HIV-negative volunteers to either immediate circumcision, performed by trained medical professionals in a clinic setting (intervention group), or circumcision delayed for 2 years (control group). The first trial, in Kisumu, western Kenya, was conducted among men aged 18–24 years, and showed a 53% reduction in HIV incidence.⁷ The second study was conducted in Rakai, Uganda, among men aged 15–49 years, and showed a 51% reduction in HIV incidence.⁸ Following release of the study results, circumcision was offered without further delay to the men in both non-intervention groups.

Possible biological explanations for the protective effect of male circumcision

The primary cells through which HIV enters the body are Langerhans cells. These cells are present in high density in the epithelium of the inner foreskin, and are close to the surface because the layer of keratin is thin.^{18, 19}

In an *in vitro* study, viral uptake by cells from the mucosal surface of foreskin was 7 times more efficient than that by tissue from the female cervix.²⁰ The inner mucosal surface of the foreskin lacks the thick layer of keratin that covers most exposed skin. This leaves numerous mucosal Langerhans cells and other immune cell targets easily accessible to HIV infection.²¹

The highly vascularized foreskin mucosa, and in particular the frenulum, is prone to tearing and bleeding during intercourse. These micro-injuries allow easy access of HIV to the bloodstream.

A further factor that may facilitate entry of the virus is the presence of an ulcerative STI, such as herpes simplex, chancroid or syphilis, which tend to be more common in uncircumcised men.⁵

Protection for women

A study in Uganda observed lower rates of male-to-female transmission of HIV if the man was circumcised.¹³ Among 47 couples in which the circumcised male partner was infected with HIV and whose viral load was below 50 000 copies per ml, none of the female partners became infected in two years. By contrast, 26 of the 147 women whose HIV-infected partners were not circumcised became infected.

A subsequent randomized controlled trial of circumcision among men with HIV infection did not confirm this result. It showed there might be a higher risk of HIV transmission to women in the first two years after the operation.²²

A further observational study has shown a 40% lower risk of HIV infection in couples where the male partner was infected and the female partner not infected with HIV, but the reduction in risk was not significant.²³

Other health benefits of circumcision

A multicountry study²⁴ found a lower prevalence of human papillomavirus (HPV) infection in circumcised men than in uncircumcised men. HPV infection is a necessary causal factor for cervical cancer and is associated with an increased risk of cancer of the vulva, vagina and anus in women, and of the penis and anus in men. Prospective studies have shown that circumcised men are less likely to have HPV infection.^{25,26,27}

The incidence of invasive penile cancer is significantly lower in circumcised men than in uncircumcised men, though this condition is extremely rare.^{28,10}

Acceptability of circumcision among African men

Surveys and qualitative studies among young as well as older men in six African countries have found that a considerable proportion expressed interest in circumcision, ranging from 45% in Harare, Zimbabwe, to over 80% in a large survey in Botswana.²⁹ These studies indicate that many men would willingly undergo circumcision if it could be performed safely and at reasonable cost.

In the surveys, the men reported that their main interest in circumcision was related to hygiene, infection control and, for some, a belief that condom use is easier for men who are circumcised.

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Chapter 2

Linking male circumcision to other male sexual and reproductive health services

Summary

- Men have different sexual and reproductive health needs at different ages.
- Male circumcision reduces the risk of acquiring HIV infection by 50–60%, but does not guarantee complete protection. In addition, it may provide some protection against other sexually transmitted infections, such as syphilis and herpes, but offers little or no protection against gonorrhoea and chlamydia.
- Male circumcision does not prevent unwanted pregnancy. Comprehensive education and information programmes, and the provision of services for contraception and STI prevention and management, are needed to address male sexual and reproductive health needs.
- WHO and UNAIDS recommend HIV testing and counselling for all patients who have signs and symptoms of HIV infection. In certain epidemic situations, they recommend routinely offering an HIV test at every contact with health services.
- WHO and UNAIDS recommend that all men who request circumcision to reduce their risk of HIV infection should be offered an HIV test.
- The core goals for male sexual and reproductive health services include promoting responsible male sexual behaviour and encouraging men to support their female partners and children in meeting their sexual and reproductive health needs.
- Sexual and reproductive health education and services are important for men and adolescents, as well as for women. A wide range of people and organizations can provide information and services, including parents, teachers, nongovernmental organizations, churches and youth groups, as well as health care providers in outpatient, family planning, STI, and HIV clinics. Every opportunity to provide education and services should be taken.
- Male circumcision services for older boys and young men offer an opportunity to provide sexual and reproductive health education and counselling to these key groups.

MEN'S SEXUAL AND REPRODUCTIVE HEALTH NEEDS AND SERVICES

For many men, accessing circumcision services may be their first contact with health services. This contact offers an opportunity to address other aspects of men's sexual and reproductive health.

As noted in Chapter 1, male circumcision does not provide full protection against HIV, but appears to reduce the risk of infection by 50–60%. It gives little or no protection against STIs that affect the urethra, such as gonorrhoea and chlamydia. It provides no protection against acquisition of HIV infection from unsafe injections, from infected blood products, or through receptive anal intercourse. It also does not prevent pregnancy.

To reduce the risk of STIs, including HIV, and unwanted pregnancy, comprehensive education and information programmes are needed, as well as services for contraception and STI prevention and management. A possible consequence of promoting male circumcision for HIV prevention is that circumcised men may perceive themselves as immune, and subsequently increase their exposure to HIV, ignoring other important strategies to reduce risk. These strategies include delaying the onset of sexual activity, reducing the number of sexual partners, and using condoms correctly and consistently every time they have sex.

In many societies where male circumcision is performed at the beginning of adolescence, as a rite of passage to adulthood, the circumcision festival period is used also to educate young men about various health and social issues. These cultural traditions can be harmonized with modern clinical practice, to ensure the safety of circumcision, and to use the opportunity to educate the young men about a number of sexual and reproductive health issues.

Male circumcision should therefore be regarded as an entry point for sexual, reproductive and other health services for men (Fig. 2.1), including:

- sexual and reproductive health education and counselling;
- screening and treatment for sexually transmitted infections;
- counselling and testing for HIV (with referral for care and support for those testing positive);
- family planning education, counselling and services, including provision of condoms and vasectomy;
- evaluation and management of infertility;
- counselling on gender issues, including promotion of respect for women's and girls' sexual and reproductive health needs and rights and the importance of preventing gender-based violence;
- education about cancers of the male reproductive organs (testes, penis and prostate);
- counselling for alcohol dependence and other substance abuse, which are associated with a number of health risks.

No opportunity should be missed for education and counselling about male sexual and reproductive health issues, before and after the initiation of sexual intercourse.

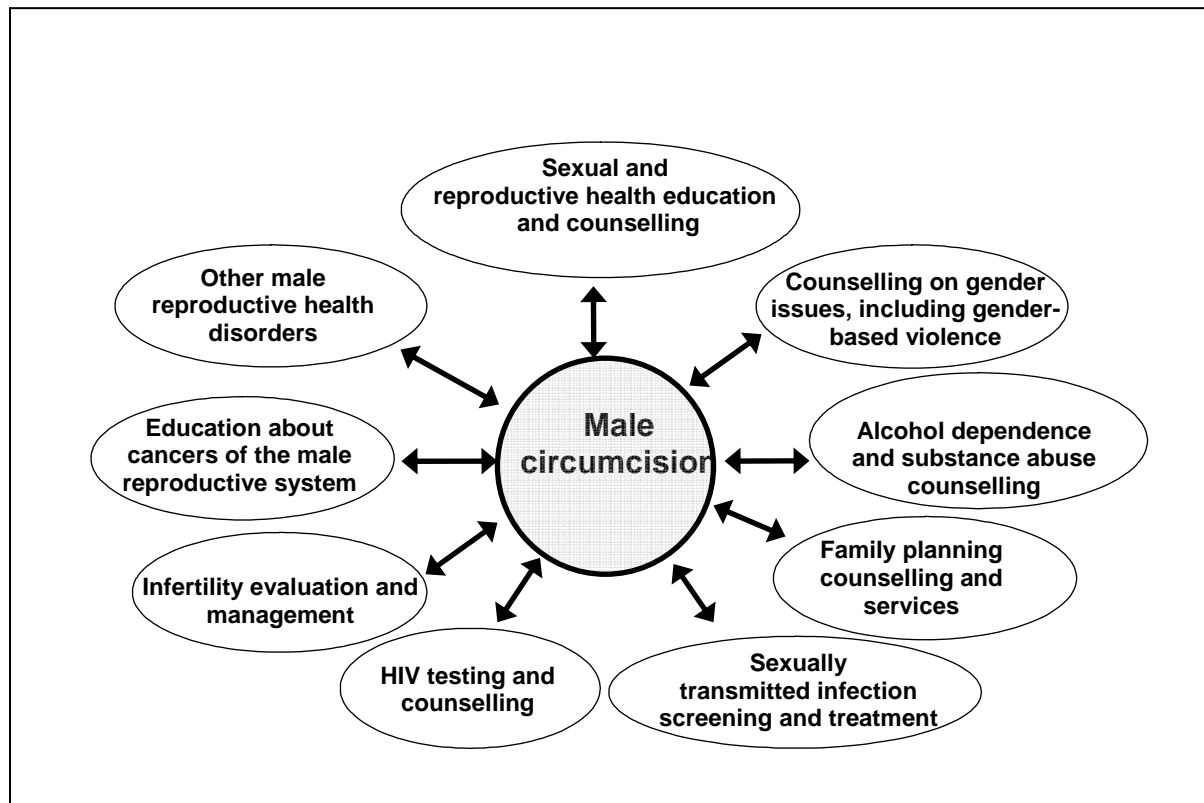


Fig. 2.1 Male circumcision as an entry point to other health services

Counselling and testing for HIV Infection

Men considering circumcision do not need to know their HIV status; circumcision can be offered to men irrespective of whether they are infected with HIV or not. The procedure can be performed safely on men who have HIV infection, and may confer some benefit by reducing the risk of HIV transmission to their female partners. The surgical staff who perform male circumcision should take full precautions to avoid acquiring HIV infection during surgery (“universal” or “standard” precautions).

WHO and UNAIDS promote testing and counselling for HIV at all contacts with health services, particularly in settings with high HIV prevalence and incidence.¹ However, clients should have the option to refuse an HIV test, without affecting the care and services they receive. This approach is referred to as “routine offer of testing with optional opt-out”.

It is estimated that fewer than 10% of people in developing countries are aware of their HIV status, and access to, and uptake of,

counselling and testing services are limited. Knowledge of HIV status is important, so that those infected can seek advice, support and proper care, and can take measures to avoid passing the infection to others. Care includes prophylaxis with cotrimoxazole to reduce the rate of progression to acquired immunodeficiency syndrome (AIDS), and antiretroviral treatment when clinically indicated. These treatments are becoming more widely available in developing countries. Specific information and messages can also be given to people known to be uninfected with HIV to help them remain free of infection.

Barriers to male sexual and reproductive health services

There are a number of barriers to the development and use of reproductive health services for men, including:

- a lack of information on men's needs and concerns that could be used to design appropriate programmes and services;
- embarrassment and alienation among men about using health facilities that are primarily designed to address women's reproductive health issues;
- men's reluctance to seek medical care;
- inadequate training of health workers to address men's sexual and reproductive health issues;
- limited availability of contraceptive methods for men;
- negative attitudes of policy-makers and service providers towards men; for example, viewing men as irresponsible, or not interested in playing a positive role in support of women's reproductive health needs, or not an appropriate clientele for sexual and reproductive health services;
- unfavourable legal and policy constraints, such as bans on promotion of condoms;
- logistic constraints such as lack of separate waiting and service areas for men, lack of trained male staff, lack of male-friendly clinics, and inconvenient clinic hours.

These barriers must be addressed if men are to become more involved in sexual and reproductive health matters.

MEETING THE SEXUAL AND REPRODUCTIVE HEALTH NEEDS OF MEN

Access to sexual and reproductive health services is a human rights issue for women, men and young people. The lack of services to address the sexual and reproductive health needs of men contributes to stress and anxiety among them.² Various strategies have been used to extend sexual and reproductive health services to men, and to engage men as partners in improving women's sexual and reproductive health:

- Services for men may be offered in existing clinic-based services.
- Separate services may be established to provide information, education and counselling on sexuality, physiological development, family planning, STIs and HIV, genital health and hygiene, interpersonal communication, and sexual and reproductive behaviour.
- Special services may be established to offer diagnosis and treatment of sexual dysfunction, STIs and HIV, cancer of the prostate, testis and penis, and medical indications for male circumcision.

Other approaches include:

- community-based distribution and social marketing of condoms;
- reaching men with information and services through the workplace, the military and men's groups;
- special outreach campaigns to young men;
- educational campaigns through the media;
- special initiatives, such as outreach through football matches or other popular sporting events;
- promotion of vasectomy.

Because gender inequality has a strong influence on women's sexual and reproductive health, programme managers need to consider the needs and perspectives of men, women and young people. It is also important to use gender-related and gender-disaggregated indicators when evaluating programmes.

MEN'S ROLES IN WOMEN'S AND CHILDREN'S HEALTH

Men can influence women's health in numerous ways.³ As husbands, boyfriends, fathers, brothers, and friends, men can have a positive effect on women's health by:

- preventing the spread of STIs by using condoms consistently and correctly and supporting and encouraging regular condom use by others;
- using, or supporting the use by partners, of contraception, so that couples are better able to control the number and timing of their children;
- supporting women during pregnancy, childbirth and the postpartum period;
- supporting women to take decisions about their health without reference to their partner;
- responding to the physical and emotional needs of women prior to and following miscarriage and abortion;
- refraining from, and insisting others avoid and prevent, all forms of violence against women and girls;

- working to end harmful sexual practices, such as female genital mutilation and “dry sex”;
- sharing financial resources with women, and supporting the notion of shared property rights;
- supporting women’s full participation in civil society, including their access to social, political and educational opportunities, many of which have a direct or indirect impact on women’s health;
- supporting the rights of daughters to the same health care, education, and respect as sons.

Who should provide sexual and reproductive health services and information to boys and men?

A wide range of people and organizations can provide sexual and reproductive health services and information to boys and men. Some of the key providers are listed below.⁴

- **Parents.** Ideally, boys and young men should receive information and basic education on sexual and reproductive health from their parents. However, available data suggest that less than half of boys and young men discuss HIV/AIDS, STIs or family planning with their parents.
- **Teachers.** Many adolescent boys now receive some education on health, family life and sexuality in school. However, for some, the instruction comes after they have begun having sexual intercourse.
- **Peers.** Boys and men of all ages often get information on sexual and reproductive issues from their peers. Much of this information, however, may be inaccurate. One approach is to educate key youth leaders, who can then pass on accurate information to their peers. This has to be an ongoing process, to reach each new generation or group of young men.
- **Community-based organizations.** Places of worship and youth groups are important sources of information, and also provide an opportunity for counselling and skill-building in relation to sexuality, relationships, marriage and parenting. In some cases, the only method taught for preventing pregnancy and STIs is sexual abstinence, despite the fact that young people find it difficult to adhere to abstinence. As a result, they may not know how to protect themselves from risk when they become sexually active.^{5,6}
- **Family planning clinics.** Some family planning clinics reach out to men, particularly to the partners of their female clients. The availability of male health care providers and separate consultation sessions for men may encourage men to use these services. Although family planning clinics have a long history of providing both medical and counselling services, many men see them as being only for women; equally, some providers may be uncomfortable serving men.
- **Youth-friendly services.** Some countries have developed programmes that specifically address the needs of young people,

either through special “youth-friendly services”, or by making existing services more welcoming and accessible to young people. Such programmes are an important way of reaching young men who often feel excluded from family planning and other reproductive health services;

- **STI clinics.** These facilities have a long experience addressing sexual health matters, and many men are comfortable seeking services in such settings. However, STI clinics tend to focus on treatment and secondary prevention. Primary prevention of STIs must, therefore, be addressed through other mechanisms.
- **HIV services.** HIV testing and counselling centres can also provide counselling on sexual and reproductive health. If such centres are integrated within primary health care services, they can also provide some sexual and reproductive health services. Facilities providing care for patients with HIV infection and AIDS also have a role to play in promoting sexual and reproductive health for men, women and young people.
- **Physicians, clinical officers, nurses and other health care professionals.** Health care professionals play a critical role, not just as health care providers, but also as educators and counsellors. Urologists and other specialists commonly deal with certain aspects of male sexual and reproductive health, such as diagnosing and treating prostate cancer and performing circumcision or vasectomy. Primary care physicians treat large numbers of men for their general health needs, but may not have the necessary training to provide comprehensive sexual and reproductive health education and services, or be comfortable doing so. Staff providing male circumcision services should be trained to educate and counsel men about their sexual and reproductive health, and should take the time to do this. Male circumcision services provide a unique opportunity to reach men with education and counselling about sexual and reproductive health.

DETECTION AND TREATMENT OF SELECTED MALE SEXUAL AND REPRODUCTIVE HEALTH PROBLEMS

Some common reproductive health problems are described below.

Sexually transmitted infections

More than twenty species of microorganisms are known to be transmissible through sexual intercourse.

STIs in men include:

- gonorrhoea;
- chlamydial infection (this is the commonest cause of non-gonococcal urethritis);
- balanitis caused by *Candida albicans*;
- trichomoniasis;

- chancroid (soft chancre);
- syphilis
- lymphogranuloma venereum;
- granuloma inguinale (donovanosis);
- genital herpes;
- genital warts (condylomata acuminata).

The most common symptom of an STI is pain on urination, a burning sensation in the penis, or an ulcer on the genitals. Male patients who complain of urethral discharge or pain when passing urine should be examined for evidence of a discharge. If none is seen, the urethra should be gently massaged from the ventral part of the penis towards the meatus. Examination of a urethral smear under a microscope may show an increased number of polymorphonuclear leukocytes. In men, a finding of more than 5 polymorphonuclear leukocytes per high-power field ($\times 1000$) is indicative of urethritis. A Gram stain may demonstrate the presence of gonococci.

If a urethral discharge or genital ulcer is confirmed, the patient should be managed according to local treatment guidelines and procedures (syndromic approach). For both conditions, non-medically indicated male circumcision should be delayed until the condition has been satisfactorily resolved.

Balanitis

Balanitis is an inflammation of the foreskin and the glans of the penis. The condition occurs most often in men and boys who have not been circumcised and who have poor personal hygiene. The inflammation can occur if the sensitive inside surface of the foreskin is not washed regularly.

Symptoms of balanitis include redness or swelling, itching, rash, pain, and foul-smelling discharge.

Factors that predispose to or cause balanitis include:

- *Phimosis*. This is a condition in which the foreskin is too tight to be retracted. Dead skin cells, smegma (a white substance excreted by small glands around the corona of the glans penis) and bacteria accumulate under the foreskin. It is difficult to keep the area clean and inflammation can easily develop.
- *Dermatitis*. This is an inflammation of the skin, with irritation, itching and rash, often caused by an irritating substance or an allergic reaction to chemicals in certain products, such as soaps, detergents, perfumes and spermicides.
- Infection with the yeast *Candida albicans* can result in an itchy, spotty rash.
- Certain sexually transmitted infections (including gonorrhoea, herpes and syphilis) can produce symptoms of balanitis.

In addition, men with diabetes are at greater risk of balanitis. Glucose (sugar) in the urine that is trapped under the foreskin serves as a breeding ground for bacteria.

Treatment for balanitis

Treatment for balanitis depends on the underlying cause. If there is an infection, treatment should include an appropriate antibiotic or antifungal medication, according to national guidelines. In cases of severe or persistent inflammation, or if there is difficulty in retracting the foreskin, circumcision is usually recommended.

If the diagnosis or treatment of balanitis is uncertain, the patient should be referred to a higher level of care. Maintaining good personal hygiene can help prevent balanitis. In addition, the patient should be advised to avoid strong soaps or chemicals, especially those known to cause a skin reaction.

Phimosis

Phimosis is a condition in which the foreskin of the penis is so tight that it cannot be pulled back (retracted) from the head of the penis (Fig. 2.2).

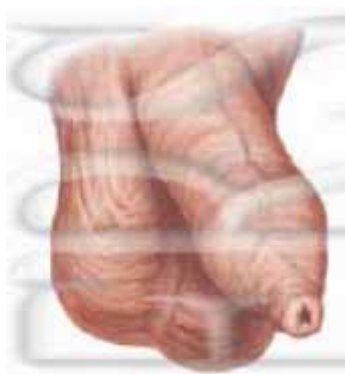


Fig. 2.2 Phimosis showing that the foreskin cannot be retracted at erection

Reproduced with permission from www.netterimages.com (image no. 1468).

Causes of phimosis

Phimosis can occur at any age and may be present at birth. It may be caused by an infection (balanitis) or by scar tissue formed as a result of injury or chronic inflammation. A tight phimosis can interfere with urination, resulting in a thin urinary stream. In extreme cases, urine may collect between the foreskin and the glans, causing ballooning of the foreskin. In this situation an urgent circumcision is necessary, usually using the dorsal slit method.

Treatment for phimosis

If seen at a peripheral health facility, adult patients with phimosis should be referred to a higher level of care for proper assessment and treatment; this will usually involve circumcision.

Paraphimosis

Paraphimosis occurs when the retracted foreskin cannot be put back in place because of swelling (Fig 2.3). This usually occurs when the penis is erect and during sexual intercourse. The retracted foreskin swells and tightens around the penis. This tightening in turn causes more swelling. Men with paraphimosis should be referred to the district hospital for emergency treatment. If left untreated the condition can result in serious complications, such as skin loss and infection; in extreme cases, it could result in loss of the penis.



Fig. 2.3 Paraphimosis. A tight band of foreskin constricts the shaft of the penis; the foreskin is swollen with oedema beyond the band. Reproduced with permission from www.netterimages.com (image no. 1468).

Treatment of paraphimosis

Treatment depends on how long the paraphimosis has been present. For acute paraphimosis, wrap the swollen area in gauze and apply increasing pressure on the gauze to squeeze the tissue fluid (oedema) out of the penis. This may take 10–15 minutes. Once the fluid has been squeezed out, it is usually possible to replace the foreskin over the glans. Circumcision can then be done as a planned procedure a few days later. If this procedure fails, or in cases of chronic paraphimosis, the man should be sent to the nearest surgical referral centre.

Urinary tract infections

Urinary tract infections are infrequent in adult men, but more frequent in children and older men. Usually there is an underlying cause, for example, kidney or bladder stones. Symptoms include:

- frequent urge to urinate;
- pain and a burning feeling in the area of the bladder or urethra during urination (dysuria);
- feeling tired, shaky, and weak (malaise);
- feeling pain in the bladder or urethra even when not urinating;
- passing only a small amount of urine, despite an intense urge to urinate;
- milky or cloudy urine; sometimes urine may be reddish, indicating that blood is present;
- fever (suggesting that the infection has reached the kidneys);
- pain in the back or side, below the ribs;
- nausea;
- vomiting.

Urinary tract infections in men should be distinguished from urethral discharge caused by an STI. A patient with a urinary tract infection should be told to drink plenty of water, starting immediately. He should also be given an appropriate. Men and boys with recurrent urinary tract infection, or who do not respond to treatment at the first level of care, should be referred for further investigations.

Infertility

Between 60 and 80 million couples around the world are infertile, and most of them live in developing countries. Infertility is defined as failure to conceive after at least 12 months of unprotected vaginal intercourse. A large proportion of cases of infertility in developing countries are attributable to STIs, which can damage the fallopian tubes in women and obstruct the sperm ducts in men, particularly when left untreated. Reproductive tract infections in men can affect the prostate (prostatitis), the epididymis (epididymitis), and the testes (orchitis). In many societies, childlessness is highly stigmatizing, and the couple's emotional response to their infertility is often exacerbated by family, peer and media pressure. Frequently the female partner is considered responsible for the failure to conceive, commonly resulting in marital tension, divorce, polygamy or ostracism. However, a WHO investigation of 5800 infertile couples found that reduced male reproductive capacity was a contributory factor in at least 50% of infertile couples.⁷ In order to provide more efficient, systematic and cost-effective care for infertile couples, and to improve the accuracy of diagnoses, health care providers managing an infertile couple should ensure that all essential information is collected. The *WHO Manual for the Standardized Investigation and Diagnosis of the Infertile Couple* provides clear guidelines and a logical sequence of steps for clinicians to follow in evaluating both partners in an infertile couple.⁸

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Chapter 3

Educating and counselling clients, and obtaining informed consent

Summary

- Group education is used to support counselling services. It allows clients to be given basic information on sexual and reproductive health, including HIV, before an individual counselling session.
- Providers of male circumcision services have a duty to (a) ensure that voluntary and informed consent is obtained before the procedure is performed, (b) maintain confidentiality, and (c) provide services without discrimination.
- Where tradition demands group circumcision for boys, health care providers should work with the community to design a way of combining the surgical procedure with education, integrating traditional customs and practices with modern clinical techniques.
- All counsellors need basic counselling skills in order to talk with clients in a helpful way.

EDUCATION ABOUT SEXUAL AND REPRODUCTIVE HEALTH AND MALE CIRCUMCISION

Group education is used to support individual counselling services. It allows clients to be given basic information about male circumcision before an individual counselling session. Counsellors can then work with clients, and/or their parents, on specific issues related to male circumcision, or sexual and reproductive health in general. Group education allows the first counselling session to be shorter, which is an advantage in busy clinics.

The information given to clients during an education session may differ slightly from site to site. Counsellors should be familiar with the standard education on male circumcision offered at the place where they work, so that messages and information given are consistent.

In conducting group education on male circumcision, the counsellor should include the following main messages:

- Underline that, like women and girls, men and boys have sexual health and reproductive health needs.
- Explain what male circumcision is, outline the benefits and risks, and describe how the surgical procedure is performed and what happens afterwards.
- Emphasize that male circumcision does not provide complete protection against HIV infection. Explain that circumcised men can become infected and can pass on HIV infection to their sexual partners.

- Describe the measures that the service takes to ensure that patient records are kept confidential and provide assurance that confidentiality will be maintained.
- Discuss the importance of knowing one's HIV status. Explain how HIV is transmitted, how a person can protect himself or herself from HIV infection, and where people with HIV infection can find support.
- Explain that men with an STI have a greater risk of becoming infected with, and transmitting, HIV.
- Emphasize the importance of avoiding HIV infection and outline different ways of reducing the risk of acquiring the infection.
- Explain that patients with an STI have a greater risk of becoming infertile in the future.
- Emphasize that only condoms, consistently and properly used, protect against STIs, HIV, and unwanted pregnancy. Other methods of contraception, even those that are highly effective in preventing pregnancy, do not protect against STIs, HIV or possible future infertility.
- Emphasize that vasectomy is the most effective and permanent method of contraception available for men, but that it does not protect against STIs or HIV.
- Emphasize that men should treat women as equal partners in decision-making related to sexual and reproductive health.
- Emphasize that men should support the sexual and reproductive health of women and the well-being of their children, with equal regard for female and male children.
- Underscore the importance of not perpetrating gender-based violence, especially against women and girls.
- Emphasize that responsible men do not force or coerce their partners to have sex against their will (rape).

Group education script

Below is a sample script that shows how a group education session might be conducted.^a The script should be adapted to the specific situation in the clinic or region.

The text in *italics* contains instructions for the group educator.

Opening

- Hello, my name is _____, and I am a _____ here at this clinic.

For some time we have been aware that the reproductive health needs of men and boys have not been receiving enough attention.

At this clinic we provide the following services for men:

- information and education on male circumcision (including the management of postoperative complications);
- male circumcision for men who choose to have the procedure;

^a Adapted from JHPIEGO's Counselling and Testing reference manual. [Full reference required]

- information and counselling on sexual intercourse, safer sex, and health problems related to the reproductive system;
- diagnosis and management of sexually transmitted infections;
- counselling and testing for HIV and AIDS and referral for care and support;
- contraception, through vasectomy or the use of condoms; condoms will prevent both pregnancy and.

Physical and sexual maturity comes with many social responsibilities. These include:

- Recognizing that safer sex can prevent STIs and HIV infection. Safer sex includes using condoms the right way every time you have sex, reducing the number of sexual partners, delaying the start of sexual relations, and avoiding penetrative sex.
- Never putting yourself in a situation in which you lose control of your judgement, for example because you are under the influence of alcohol or drugs. This may lead to behaviour that will increase your risk of becoming infected with STIs and HIV, such as having unprotected sex with strangers or with multiple sexual partners.
- Treating women as equal partners in sexual relations and deciding together whether and when to have children.
- Respecting the sexual and reproductive health rights of girls and women, including the right to refuse sex, both within and outside marriage.
- Supporting women's sexual and reproductive health. Such support is particularly important during pregnancy.
- Supporting children's well-being, with equal regard for female and male children.
- Stopping all kinds of violence against women and girls, and not forcing or coercing girls or women to have sex against their will.

Male circumcision

For those of you who are here to find out more about male circumcision, let's talk a bit about that.

- What is male circumcision? Male circumcision is the surgical removal of the foreskin of the penis (also called the prepuce). It is one of the oldest surgical procedures in history.
- Male circumcision has been shown to have several health benefits including:
 - a reduced risk of urinary tract infections in childhood;
 - a reduced risk of some sexually transmitted infections, such as herpes and syphilis;
 - some protection against cancer of the penis;
 - a reduced risk of cervical cancer in female sex partners;
 - prevention of several medical problems of the penis and foreskin, such as inflammation, scarring and swelling of the foreskin.
- Some of you may have heard that male circumcision reduces the

risk of HIV infection. This is correct. However, I must remind you that male circumcision does not protect completely against HIV infection – it only reduces the risk of becoming infected by about one half. It is very important to continue using other ways of reducing the risk of infection – using condoms the right way every time you have sex, reducing the number of sexual partners, delaying the start of sexual relations, avoiding penetrative sexual intercourse, and avoiding unsafe injections.

- As with any surgical procedure, complications may occur after the operation. However, in our clinic we do everything we can to reduce this risk. Possible problems include pain, bleeding, swelling of the penis caused by bleeding under the skin, infection of the surgical wound, and increased sensitivity of the exposed head of the penis (glans). On average, if we operate on 50 men or boys, one will need to come back to the clinic for the treatment of a complication. However, the problems usually settle down quickly with additional treatment.
- Many men ask how soon after circumcision sex can be resumed. It takes about 4 to 6 weeks for the wound to become strong enough to withstand sex and about 3–4 months for the wound to heal completely. We always advise clients to avoid sex or masturbation for the first 4–6 weeks after circumcision, and to use a condom during sex until the wound has completely healed (at least 6 months). It is always best to use a condom whenever there is any risk of STI or HIV infection.
- At this clinic, we perform circumcision using local anaesthesia to take away the pain of the procedure. Patients can go home the same day but it is important that they come back for follow-up.
- Do any of you have any questions or concerns about male circumcision? I know that there are many myths about male circumcision that circulate. For example, some people think that circumcision can cause impotence (failure of erection) or reduce sexual pleasure. Others think that circumcision will cure impotence. Let me assure you that none of these is true.

If time permits, other sexual and reproductive health topics can be covered (see Appendix 3.1).

Summary

We have talked about the different services that we offer in this clinic. It is up to you to let us know what services are of interest to you. If you are worried that you may be infected with an STI or HIV, or if you want to be tested, counselling and testing services are available here. If you want to register yourself or your son for circumcision, please let us know. We will be very pleased to assist you in any way you wish.

Please take some of the information leaflets we have here. They may answer other questions that you may have. Thank you for your attention.

COUNSELLING

Basic facts about counselling^b

Counselling is a process in which individual communication is used to help people examine personal issues, make decisions, and make plans for taking action. In some types of counselling, the counsellor and client talk about whatever the client wishes. In counselling for male circumcision, the provider ensures that the client (or, if the client is a child, his parents) has all the information he needs to make a decision about undergoing the procedure. HIV counselling concentrates on helping clients reduce their risk of becoming infected with HIV – or for those already infected – transmitting the virus to others. In family planning counselling, the provider helps the clients make an informed decision based on their reproductive intentions and personal situation.

Counselling is **not**:

- telling clients what to do;
- criticizing clients;
- forcing ideas or values on clients;
- taking responsibility for clients' actions or decisions.

Counselling may involve some or all of the following:

- Listening to clients (or parents, for circumcision in boys who are too young to understand fully the reasons for circumcision and the risks associated with it, or who are below the legal age to consent to the operation).
- Respecting clients' needs, values, culture, religion, and lifestyle.
- Talking with clients about the risks and benefits of the service requested, in this case male circumcision.
- Answering questions about the male circumcision procedure and correcting any false information.
- Allowing clients and/or their parents to make their own informed decision on whether or not to choose male circumcision.
- Asking clients questions that help them identify behaviour that puts them at risk of STIs or HIV infection, or might do so after circumcision.
- Helping clients understand the benefits of knowing their HIV status.
- Helping clients understand their HIV or STI test results.
- Helping HIV-negative clients understand that male circumcision does not provide full protection against HIV infection, and suggesting how they can stay negative.
- Helping HIV-positive clients find support and treatment services, and discussing ways to avoid transmitting HIV to others.
- Helping clients obtain other services, such as family planning, screening and treatment for STIs, and counselling and treatment for alcohol and drug abuse.

Confidentiality

Confidentiality is an important characteristic of all sexual and reproductive health services. Counsellors should keep all client

^b Adapted from JHPIEGO's Counseling and testing reference manual for lay counselors, 2002. [Full reference required]

information private and allow clients to decide when and with whom to discuss their sexual and reproductive health problems. Clients will feel more comfortable about sharing personal information with counsellors and being tested for STIs or HIV if they know that this information will remain secret. This also applies when the client's main interest is male circumcision. An atmosphere of trust will encourage clients to discuss other sexual and reproductive health needs.

Another reason why confidentiality is so important is that many people have negative feelings about STIs, HIV/AIDS and sexual health concerns. There is strong social pressure to conform, and considerable social stigma is associated with behaviours or conditions perceived as unusual.

Sometimes, health care workers at a clinic need to know a client's HIV status. This happens, for example, when a client is sick and the best treatment depends on knowing whether the person is HIV-positive or HIV-negative. The counsellor should tell the client about this possibility during counselling. An HIV test is recommended for all clients requesting circumcision, but is not required for the operation to go ahead. Male circumcision can be safely performed in men whose HIV status is unknown and in those with HIV infection, provided that they are clinically healthy. However, except in some rare cases where circumcision is necessary to correct a health problem of the glans or foreskin in a man with HIV infection, there are no medical or public health reasons to perform circumcision in men with HIV infection. HIV testing of clients before circumcision is not necessary to protect the clinic or surgical staff during the operation. It is important that the clinic applies high infection-control standards, including proper implementation of universal precautions to minimize the risk of transmission of HIV and other infections to health care workers or other patients. Universal precautions are discussed in full in Chapter 8.

Counselling skills

All counsellors need certain basic counselling skills in order to talk with clients in a helpful way. Some of these skills are explained below.

Empathizing

Empathy is the ability to see the world through another person's eyes and understand how that person feels. Counsellors should listen to clients carefully and show them that they understand without judging. Empathy is not sympathy; it is not feeling sorry for the client. Empathy is understanding the client's feelings.

Example:

An adolescent says to the counsellor: "My girlfriend keeps asking me to go for circumcision. I feel embarrassed and angry."

Counsellor's empathic response: "So you often feel irritated, uncomfortable, and pressured by your girlfriend. That must be difficult for you."

Active listening

Active listening involves paying attention to what a client says and does, in a way that shows respect, interest and empathy. Active listening is more than just hearing what clients say. It is paying attention to the content of the message, as well as the client's feelings and worries that show through his movements, tone of voice, facial expressions, and posture.

Example:

The client looks very nervous and is biting his nails, but tells the counsellor he is fine.

Counsellor: "Sometimes when we think we are relaxed, we can still feel quite anxious inside. I see you are biting your nails. Perhaps something is bothering you that you do not know how to express. Do you have any idea what that might be?"

Open questioning

Open questions are questions that require more than a one-word answer. They usually begin with words such as "how", "what" or "why". Open questions encourage clients to express their feelings and share information about their situation.

Examples:

"Why have you decided to come for male circumcision?"

"How do you think circumcision can reduce your risk of STI or HIV infection?"

"What do you do that may make it possible for you to get infected with an STI or HIV?"

"What are you currently doing to protect yourself against STIs and HIV? How is this working?"

Probing

Probing is using questions to help clients express themselves more clearly. Probing is necessary when the counsellor needs more information about the client's feelings or situation. Asking a probing question is a good way to follow up on a question that has been answered by "yes" or "no."

Examples:

"Can you tell me more about that?"

"How do you feel about that?"

Focusing

Clients are often overwhelmed by emotional or personal problems related to their particular sexual and reproductive health problems. They may want to address all the issues at once. If clients start to talk about problems or situations that will be discussed later in the session, the counsellor may want to bring the topic of discussion back to the current issue.

Example:

At the beginning of the first counselling session, the client begins talking about the most recent situation when he may have been exposed to HIV. He asks about where and how he can get condoms.

The counsellor does not want to interrupt the flow of the discussion, so says: "Using condoms is an excellent way to reduce your risk of getting an STI or HIV infection. We can talk about that in a few minutes. Right now, let's continue talking about your HIV situation."

If the client wants to talk about other emotional or personal issues, such as problems at home or a partner's drug use problem, the counsellor should help the client find appropriate support.

Affirming

Affirming is congratulating or complimenting clients on the positive actions that they have taken. It is important to encourage success. Complimenting clients helps them feel respected and valued and encourages them to try to make other changes to reduce their risk of HIV infection. It may also make them more willing to share information about other actions they have taken.

Example:

Client: "I've recently started using condoms each time I have sex".

Counsellor: "That's a really positive step in protecting yourself against HIV and sexually transmitted infections. Well done!"

Clarifying

Counsellors clarify in order to make sure that they understand a client's statements or questions. Clarifying also helps the client understand his own situation or feelings better and identify uncertainty or conflict between his thoughts and behaviour.

Example:

Client: "My partner gave me gonorrhoea. I'm afraid of getting HIV. But I'm also afraid that, if I use condoms when I have sex with her, she'll think I am not faithful."

Counsellor: "Help me understand this. You are afraid you might get HIV from your partner, but you do not want to use condoms with her."

Pointing out a conflict may help the client identify which of two issues is more important to him. It is better than the counsellor telling the client to do something that he is not ready to accept. Clarifying also helps clients make their own choices and draw their own conclusions. Saying "help me understand this" is a good way to begin this type of discussion.

Correcting false information

It is important to provide correct information to clients and to correct any myths and false information. There are many incorrect rumours about HIV, AIDS, sexually transmitted infections, male circumcision and vasectomy. These should be corrected. However, this needs to be done in a sensitive way, without making the client feel stupid or defensive. Counsellors should acknowledge false information and then correct it quickly. It is not necessary to give detailed explanations.

Example:

Counsellor: "You mentioned that it is possible to cure HIV by having sex with a child or virgin. Many people believe this, but it is untrue. Firstly sex with a child is wrong and is a crime. Second, it has no benefit to you – at present, there is no cure for HIV or AIDS. Third, and most important, you are likely to transmit the virus to the child"

Counsellor: "You mentioned that you want to have a circumcision in order to prevent you from getting HIV from your multiple sexual partners. I think you need to know that male circumcision does not fully protect a man against HIV infection. Circumcised men who do not use protection or who engage in risky sexual behaviour are more likely to contract HIV infection than circumcised men who practise safer sex. Having sex with multiple sexual partners certainly is risky behaviour. You can reduce your risk of HIV infection by cutting down on the number of your sexual partners, avoiding full sexual intercourse (penetrative sex) and using condoms correctly every time you have sex."

Summarizing

Counsellors summarize in order to present the main points of the conversation to the client. Summarizing can be useful when moving to another topic or ending the session, and to make sure that counsellor and client have understood each other correctly. Summarizing also

helps clients see the whole picture and understand the situation better.

Example:

Counsellor: "We have discussed several ways in which you can reduce your risk of getting infected with an STI or HIV. For example, you seem comfortable with starting to use condoms during sex and drinking less alcohol when you go out with friends. You have many choices and we will develop a specific plan later. First, let's talk about HIV testing because your plan could change depending on your test result."

INFORMED CONSENT FOR SURGERY

General

Clients (or parents, in the case of a child) must give informed consent before a circumcision is performed. Health care providers should give clients all the information they need to make a fully informed decision. The following elements should be included.

- Provide information. Clients (or parents) should be given an explanation, in plain language, of male circumcision and the nature of the surgery. They should be informed about the risks and benefits of the procedure and of other ways to reduce the risk of HIV infection. They should know that they can choose not to be circumcised.
- Assess whether the client understands the information provided.
- Assess the capacity of the client to make the necessary decisions.
- Assure the client that he is free to choose whether or not to be circumcised. If there is any suggestion that the client is not ready to provide consent, advise him to reflect on it for a few days.
- Ask clients who decide to undergo circumcision to sign a consent document.

The goal of this consent process is to ensure that the clients (or parents) understand the surgical procedure. At the same time, they should be given the opportunity to make use of other sexual and reproductive health services.

Only clients who have appropriate decision-making capacity and legal status can give their informed consent to medical care. Where a child (usually defined as a person under the age of majority in national law) lacks the legal status required to provide independent, informed consent, or lacks the capacity to appreciate the risks and benefits associated with the procedure, written consent based on full information must be obtained from the parent or legal guardian. The parent or legal guardian should make the decision according to the best interests of the child.

Children nevertheless have a right to participate in decisions affecting their health, according to their evolving capacities. Even where the law

does not allow a child to give his own consent, providers of circumcision should explain the risks and benefits to the child in a way appropriate to his capacity. If the child has sufficient capacity, he should be given the opportunity to give or withhold assent to the procedure.

Adolescent boys: consent and confidentiality

Male circumcision is often performed during adolescence or early adulthood. It is important that health care workers know how to respond to an adolescent boy's request for circumcision in a way that respects confidentiality, but does not put the health care worker in conflict with the law.

Health care workers need to know what the law says about consent for minors. They need to know at what age and in what circumstances minors can legally make an independent decision to seek clinical or medical services without the agreement of their parents or guardian. The age at which an adolescent is allowed to give his own consent may differ for different procedures. For example, in some countries, an adolescent may be able to consent to be tested for HIV or receive condoms at a younger age than that at which he can consent to circumcision. The Ministry of Health and the National Medical or Nursing Associations should be able to provide information on national rules and regulations.

Adolescent boys who are mature enough to appreciate the risks and benefits associated with a medical procedure, such as circumcision or HIV testing, should not be subjected to the procedure without their informed consent, whether or not parental consent is required by law. All health services provided to adolescents should be confidential. Where the law allows minors to provide independent informed consent, providers must ensure that information is not disclosed to the parents without the child's consent.

“Children are more likely to use services that are friendly and supportive, provide a wide range of services and information, are geared to their needs, give them the opportunity to participate in decisions affecting their health, are accessible, affordable, confidential and non-judgemental, do not require parental consent and are not discriminatory.”

Committee on the Rights of the Child. General Comment No. 3: HIV/AIDS and the rights of the child. Thirty-second session, January 2003 (UN Document CRC/GC/2003/3) para. 20.

Health care workers should be guided in their response to adolescents by human rights principles: all adolescents have a right to use health services. Health care workers should act in the best interest of the adolescent with an understanding of his evolving capacities and ability

to make independent decisions. In some situations, health care workers may need to judge whether an adolescent has the maturity to request, and consent to, circumcision, independent of his parent or guardian.

Circumcision is an opportunity to make contact with adolescent boys, and provide them with information and counselling about their own sexual and reproductive health and that of their current or future partners. Adequate time should be allowed for counselling before and after the operation. Adolescents should be advised that it is important to return after the procedure for a check-up and further counselling and information on condom use and other aspects of sexual and reproductive health.

Documenting informed consent for surgery

The circumcision team should ensure that the client has been informed about the risks and benefits of male circumcision, that the information has been given in an understandable way, using everyday local language. The oral information should be backed up by written information sheets in the local language (see the sample information sheet for adult and adolescent clients in Appendix 3.2). After receiving the information the client should be allowed to ask questions. He should then be given time to reflect before being asked to sign the consent document (see the sample certificate of consent for adults and adolescents in Appendix 3.3).

INFANT CIRCUMCISION

Circumcision can be performed with the least physical risk on infants. When counselling parents who have been offered, or have requested, circumcision for their infant, health care providers have a responsibility to explain all the associated benefits and risks. Any benefits with regard to preventing HIV infection will be realized only many years in the future when the child becomes sexually active.

Parents or guardians should use the information they are given to evaluate what is in the best interests of the child. They may also wish to consider cultural and religious factors in reaching a fully informed decision.

More information on counselling parents who wish to have their baby circumcised is given in Chapter 6.

INTEGRATION OF TRADITIONAL CIRCUMCISION EVENTS WITH CLINICAL CIRCUMCISION

In some communities, groups of boys are circumcised at the same time, by a traditional circumciser who uses a traditional technique without anaesthesia. This group activity coincides with the “rites of passage” from adolescence to adulthood, and often takes place in circumcision “camps” or ceremonies. The event is usually both festive and educational for the participants and the community. The goals are

to acknowledge the boy's physical and emotional maturity and readiness to face the challenges of adulthood, as well as to support him during the painful circumcision procedure. In the camps, young boys attend various civic education classes, facilitated by the traditional circumciser, community leaders or event organizer. Essentially, they are taught how to behave as men.

Some parents prefer to have their sons circumcised individually. They may take the boy to a hospital or clinic, and have a health care provider perform a medical circumcision under local anaesthesia. If they choose to have the boy circumcised at home, they may engage either a nurse or a traditional circumciser. They may also specify which technique they prefer.

The increasing interest in medical circumcision in communities with a culture of traditional circumcision provides an opportunity to integrate the traditional event with safer clinical procedures including appropriate follow-up. There are many reports of high complication rates following traditional circumcision ceremonies and circumcisions performed by traditional providers. Safety can be improved by introducing medical circumcision into traditional ceremonies, or by performing the circumcision under local anaesthesia in a clinic separate from, but linked to, the traditional ceremony.

Educational topics during a circumcision event may include the following:

- the physical and psychological changes that occur in boys and girls during adolescence;
- sexuality and gender issues;
- male and female sexual and reproductive health and rights;
- sexually transmitted infections;
- HIV infection;
- safer sex practices (correct and consistent use of condoms, reducing the number of sexual partners, delaying the start of sexual relations, and avoiding penetrative sex);
- family planning;
- substance use (drugs, alcohol, tobacco);
- violence, including gender-based violence;
- community expectations of men;
- goal-setting and decision-making.

Health institutions that want to organize group circumcision events should do so in partnership with traditional circumcisers and the community. A joint educational programme can be drawn up, under shared responsibility. The decision to circumcise boys in camps will depend on resources, customs and traditions in the community. A mobile outreach service during the holidays is a convenient way to reach many boys and their parents. Whichever approach is adopted, the quality of the clinical circumcision should be ensured, in order to build and maintain confidence in the community regarding the safety and advisability of medical circumcision.

Appendix 3.1

ADDITIONAL SCRIPT FOR COUNSELLING ON REPRODUCTIVE HEALTH

HIV testing and counselling

- You have all probably heard of HIV, the virus that causes AIDS. We do not talk about it much in the community, but we are going to talk about it here because it is important to your health.
- HIV is increasing all over the world. How many of us know family members or friends who have HIV or who have died from illnesses related to HIV and AIDS?
- During this session, I will give you some basic information about HIV and AIDS and how being tested for HIV can be beneficial to you, your partner, family and community. You will also learn about the relationship between male circumcision and HIV infection.
- I will also tell you about services that are available locally, especially about the counselling and testing services that are offered here or at _____ facility. We will also talk about family planning.
- HIV testing is recommended for individuals who are at risk of HIV infection, for example by having unprotected sexual intercourse with an HIV-infected person or with someone whose HIV status is unknown. Using non-sterile needles to inject drugs is another risk for HIV.
- For those who are tested and find out they have HIV, there are medicines that help them stay healthy longer and that may reduce the risk of infecting others with HIV.
- People living with HIV have the same rights as everyone else. Discrimination against people living with HIV is against the law. There are organizations such as _____ that can provide legal and other types of support for people with HIV infection.
- While medicines do not provide answers to all of our problems in dealing with HIV, they do allow people with HIV to live longer, healthier and productive lives. Before going into detail about the services we offer, here are a few facts about HIV and AIDS.

The difference between HIV and AIDS

- HIV stands for human immunodeficiency virus. It is the virus that causes AIDS. HIV is a slow-acting virus and it is possible for a person to be infected with HIV for many years without knowing it or feeling ill. AIDS is a condition caused by HIV. AIDS stands for acquired immunodeficiency syndrome. Immune deficiency means that the immune system, which protects your body from infection, does not function properly. AIDS develops because HIV weakens the body's defence system.

- There is no cure for HIV infection, but medicines are available that can help prevent other infections in people who are living with HIV. Other medicines can slow down the virus and help HIV-infected people stay healthy longer.
- The increasing availability of medicines and other resources to support people with HIV means that more and more people with HIV infection can live a full and productive life, including a healthy sexual life.

Country statistics on HIV

- Here is some information on HIV infections in our country and region. *(Share with the group recent national statistics on the prevalence of HIV and the numbers of clients with HIV in antenatal and STI clinics.)*

How HIV is transmitted

HIV is transmitted:

- through unprotected sexual intercourse, vaginal or anal, with a person who has HIV infection;
- through infected transfused blood or blood products, or by using needles that an HIV-infected person has already used for injecting drugs, body piercing or tattooing; and
- from an infected mother to her baby during pregnancy and childbirth and through breast milk.

HIV is not transmitted through mosquito bites, everyday contacts, sharing workplace or home utensils, hugging or kissing.

Sexually transmitted infections

- Sexually transmitted infections are quite common in our community. The most common STIs are syphilis, gonorrhoea, chlamydia and herpes.
- It is important that these infections are promptly diagnosed and treated, in order to avoid complications such as infertility.
- Men should be responsive to requests from STI clinics to come for testing if their spouse or partner is diagnosed with an STI. Treatment of both partners is an important element of STI control in the family and the community at large.
- Having a sexually transmitted infection (especially one that causes sores or ulcers on the genital area) increases the risk of getting HIV by up to five times. People living with HIV are more likely to infect others when they also have such an STI.
- Individuals with a sexually transmitted infection should carefully consider the benefits of HIV testing.

Preventing HIV infection and reducing risk behaviour

- A person may be exposed to HIV once or many times before he or she becomes infected. The more often exposure occurs, the more likely a person is to become infected. Most people do not know their HIV status or whether they have been infected, and may continue to behave in a way that puts them at risk of infection or risks giving HIV to others.
- HIV infection can be avoided by avoiding penetrative sexual intercourse, by having only one partner, who is HIV-negative and faithful, by using condoms the right way every time you have sex, and by using only clean needles for injections.
- Correct and consistent condom use prevents not only HIV, but also other sexually transmitted infections (thereby protecting future fertility) and unwanted pregnancy. When used correctly every time, condoms are an excellent method of family planning and help prevent the spread of HIV and other STIs.

Reducing the risk of getting infected with HIV

- Do you know of ways in which people can reduce their risk of getting infected with HIV? *(Add to participants' suggestions: not having sex with high-risk partners, talking to a partner about testing, talking about HIV concerns with a partner or friend, decreasing alcohol or drug use, increasing condom use, avoiding places where you often have high risk behaviour, abstaining from sex, avoiding penetrative sex, correctly using condoms every time until you and your partner have been tested, etc.)*
- Try to think of some ways in which you personally could decrease your risk of getting infected with HIV.
- When you think of some ways that you can reduce your risk of getting infected with HIV, share them with someone you trust, such as a close friend.
- Now I will show you the proper use of a condom. *(Include a condom demonstration here if appropriate. Use models and ask participants to do some demonstrations themselves.)*

HIV testing

- Our health facility offers HIV testing and counselling. Each person has the right to choose whether or not to be tested for HIV.
- Before you make a decision about HIV testing, you will have the chance to talk with a counsellor about your specific situation with regard to STI and HIV infection, and about ways to reduce your risk of getting infected.
- The test result shows your HIV status as of 3 months earlier. If you became infected in the 3 months before your test, it may not be detected. For this reason, some people will need to be retested.

For example, if you had unprotected sex in May and were tested in June, you may want to be tested again in August.

- A positive HIV test means you have been infected with HIV. It does not mean you have AIDS, and it does not tell us when you were infected or when you will get sick.
- A negative HIV test means you have not been infected with HIV or were infected too recently for the test to detect your infection. (*Share information on how to remain HIV-negative*).
- If you are ill with signs and symptoms of HIV infection, medical staff will recommend an HIV test in order to determine the best way of treating and helping you.
- [*Only relevant if the country has adopted a national policy of provider-initiated testing and counselling at all contacts with health-care services*]: It is the policy of our country to routinely offer an HIV test for all people who come to health care services, even if it is for reasons not linked to HIV infection. This policy has been adopted to encourage more and more people to know their HIV status. Those who are infected with HIV will then be able to take better care of themselves, their partners and their family members. For those who are not infected, a negative test will be a strong motivation to remain free from HIV infection and can reinforce good practices that reduce the risk of infection.
- Here is how the testing works at our facility. (*Describe the testing process at your clinic. Emphasize the confidentiality of test results*).

Medicines

- In this facility, medicines are available to slow down the progression of HIV infection to AIDS and therefore prolong life. The medicines are safe to take.

Discuss the medicines that are available in your country for people who test positive and how to get them.

Contraception for men

- Two methods of male contraception are available in this clinic: a temporary method (male condoms) and a permanent method (male sterilization or vasectomy).
- The male condom is suitable for those wanting to space pregnancies, to protect themselves against STIs and HIV, and to preserve their future fertility. In fact, the condom is the only method that both prevents pregnancy and provides protection against HIV and other sexually transmitted infections.
- Vasectomy is a surgical procedure, in which the tubes (vas deferens) that transport sperm cells from the testes to the penis are cut and tied off (*show drawing of male reproductive system to illustrate vasectomy*). Vasectomy is a permanent method of contraception, and should be used only by men who are very sure that they do not want to have more children. You will still need to

use a condom to protect yourself against STIs, including HIV.

- Vasectomy is done in this clinic as an outpatient procedure under local anaesthesia. That means that patients go home the same day.
- Vasectomy does not change a man's ability to have erections and does not interfere with sexual intercourse.

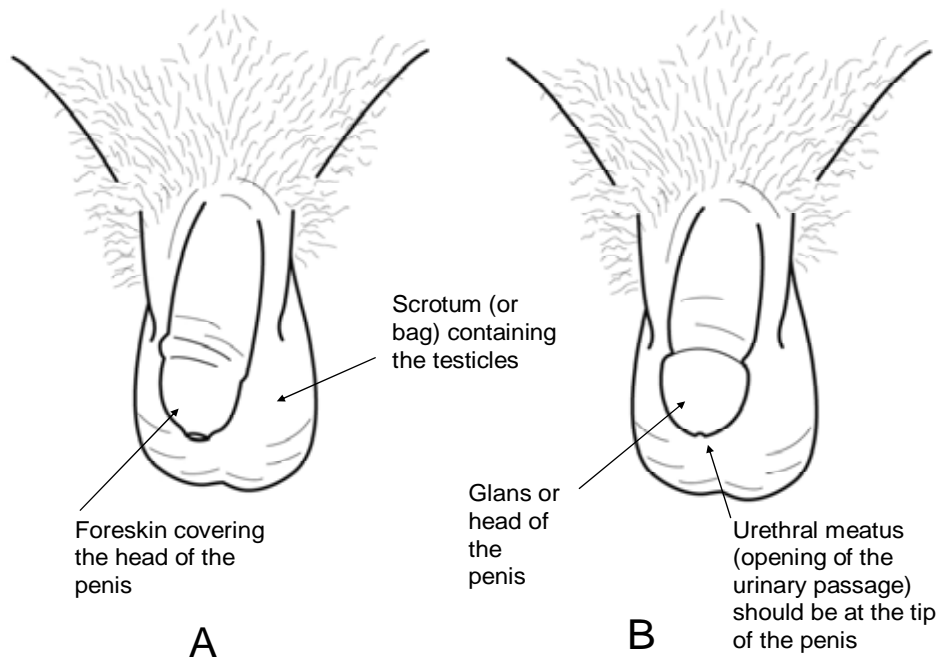
Does anyone have any questions or concerns?

Appendix 3.2

SAMPLE INFORMATION SHEET FOR ADULT AND ADOLESCENT CLIENTS

Normal anatomy

The head (glans) of the penis is covered by a fold of skin (foreskin). As the penis becomes erect, this skin withdraws freely so that the head of the penis is fully exposed.



A Normal uncircumcised penis

B Normal circumcised penis

What is circumcision?

Circumcision is surgical removal of the foreskin. It is an ancient practice that has its origin in religious and traditional rites. Many parents have their sons circumcised for religious reasons. More and more men are now choosing circumcision for health and hygiene reasons.

Who will do the operation?

A specially-trained member of the circumcision team will do the operation.

Is circumcision a painful operation?

Normally, circumcision is done with a local anaesthetic. This is given by injection through the skin near the base of the penis. Although you will be awake during the operation, you will not feel it being done. When the local anaesthetic wears off after the operation, it is usual to feel some discomfort; this can be reduced by taking pain-relieving tablets. For some clients, it is preferable to do the operation in a hospital or under general anaesthesia, rather than in a clinic.

Effects of circumcision

After the operation, the head of the penis is exposed all the time. The skin on the shaft of the penis is left intact. In adults, it is left slightly loose to allow enough skin for erection. The penis looks different and this may take some getting used to. It takes some months for the stitch marks to fade completely.

Benefits of circumcision

There is more and more evidence that men who are circumcised have a lower risk of catching HIV infection. In countries where most men are circumcised, the number of people with HIV is much lower than in countries where most men are not circumcised. However, male circumcision gives only partial protection against HIV infection; correct and consistent use of condoms is the best form of protection. Other ways of reducing the risk of acquiring HIV infection include not having sex and reducing the number of sexual partners. Sexual behaviour remains the most important factor in HIV transmission. Avoiding multiple partners and high-risk sexual behaviour, and always using condoms, reduce substantially the risk of acquiring or transmitting HIV.

Circumcision also reduces the risk of some other sexually transmitted infections, such as herpes and genital ulcers.

Sometimes circumcision is performed for medical reasons, such as when the foreskin is too tight to be pulled back from the glans. After circumcision, it is much easier to wash the head of the penis and keep it clean.

Problems and complications after the operation

Immediate problems

Some swelling and discomfort can be expected after the operation, but this normally gets better after the first day or two. No special treatment is needed.

One of the possible complications of circumcision is bleeding or accumulation of blood under the skin. This is because the skin of the penis is less tight than other parts of the body and has a very good blood supply. If a large blood clot forms, it is sometimes necessary to perform another small operation to remove it. If this happens, it may be necessary to stay in hospital for a few days and rest for a week or two.

The wound can become infected, particularly in men with diabetes. The operation is performed in sterile conditions, but the penis is in an area that is not as clean as other parts of the body. The first signs of infection are increasing pain, redness and swelling at the site of the operation. If this happens, you should return to the clinic for follow-up, as antibiotic treatment may be needed. Antibiotics are not given routinely and antibiotic ointment should not be used unless given to you by a nurse or doctor. The actual risk of having a complication, such as bleeding or infection, is about one for every fifty men who have the operation.

If you are unable to pass urine or have any difficulty in doing so, you should return to the clinic for assessment.

Most men get erections during the night while sleeping. If this occurs after the circumcision operation, you may experience some minor discomfort because of pulling on the stitches. This is nothing to worry about.

Other complications

Occasionally the head of the penis may remain very sensitive after the operation. This increased sensitivity will become less over the first few weeks, as the skin of the glans becomes slightly thicker.

Instructions to follow before the operation

Please bring a pair of well-fitting clean underpants to wear after the operation. They will hold the wound dressing in place for the first day or two. A day or two after the operation, once the dressing has been removed, it is better to wear loose underwear. On the morning of the operation, wash the genital area and the penis carefully with water and mild soap, giving special attention to the area under the foreskin. If you have long pubic hair, it is a good idea to clip this with scissors before the operation, so that it does not interfere with the dressing that will be put on after the circumcision. There is no need to shave your pubic hair in advance of the operation.

You will be more comfortable if you empty your bladder before the operation.

Instructions to follow after the operation

In the first three days after the operation, it is helpful to avoid strenuous physical activity and rest at home. Lying on your back means that the penis is the highest point in your body and this takes the pressure off the area. However, you should also walk about regularly, for example to get meals or visit the toilet. You should not ride a bicycle for the first five days after the operation.

Keep the area of the operation dry for 24 hours. Keep the area clean. Do not use any antiseptic cream, ointment or any other substance. If clean water is available, wash carefully twice a day in a shower or sitz bath (a warm-water bath taken in the sitting position, in which the hips and buttocks are in the water). Do not remove the bandage until told to do so by the clinic staff.

The circumcision wound is closed with absorbable stitches. These dissolve by themselves and it is not necessary to return to the clinic to have them removed.

You should return to the clinic if any of the following occurs:

- Continued bleeding from the wound.
- Formation of a large blood clot under the skin near the site of the operation.
- Pain (you will feel some pain when the local anaesthetic wears off, but this should diminish after the first few hours. However, if the pain comes back, return to the clinic).
- Swelling (after the procedure some swelling is normal and return to normal over the first few days. If the swelling gets worse, return to the clinic).
- Discharge of fluid or pus; this may indicate infection.

Avoid any sport or other strenuous activity for 4–6 weeks. The healing process will be well advanced after 7 days, but it takes 4–6 weeks for the wound to become strong. Full healing

takes longer (3 to 4 months). It is best to avoid sexual intercourse or masturbation for the first four to six weeks after circumcision. It is very important to use a condom during sexual intercourse to protect the healing wound for at least six months after the operation. It is always wise to use a condom whenever there is any risk of STI or HIV infection.

Contact number for emergencies.

Appendix 3.3

SAMPLE CERTIFICATE OF CONSENT FOR ADULTS AND ADOLESCENTS

My name is _____ (BLOCK CAPITALS)

I am asking you to do a circumcision operation (removal of my foreskin) on me. I give you my permission to do this operation.

Signed
(client requesting circumcision)

If the patient is too young to give legal consent, the form should be countersigned by a parent or legal guardian.

I am the parent/legal guardian. I am asking you to do a circumcision operation on my son/ward and I give you permission to do this operation.

Signed
(parent or guardian requesting circumcision on behalf of a minor)

My name is _____ (BLOCK CAPITALS)

I am the **counsellor/surgeon** who has given information to the above client.

I have given information about:

- what circumcision is;
- the benefits of circumcision;
- how circumcision is done;
- the risks of circumcision;
- what to do before circumcision;
- what to do after circumcision;
- what to do if there are any complications or problems after circumcision;
- an emergency contact number and information about where to go in an emergency;
- why it is important to use condoms after circumcision.

I have given the client an opportunity to ask me questions about all the above.

I have asked the client some questions to make sure that he understands the information I have given.

To the best of my belief the client is capable of giving consent and has enough information to make a proper decision about whether to proceed with the operation of circumcision (removal of the foreskin).

Signed
(Circumcision clinic counsellor or surgeon)

Chapter 4

Facilities and supplies, screening of patients and preparations for surgery

Summary

- Circumcision should be performed in appropriate facilities, with proper equipment and supplies.
- Surgical instruments wear out with use and with repeated disinfection and sterilization. Therefore, each clinic should carry out a periodic review of all surgical instruments.
- The surgeon must use good aseptic technique to prevent infection.
- Before circumcision, clients should be assessed for contraindications to surgery and conditions that need treatment or referral.
- The assessment includes history-taking and physical examination.

EQUIPMENT AND SUPPLIES

This chapter describes the facilities and equipment needed to perform male circumcision safely in a clinic setting. The clinic should be equipped with a narrow operating table, which is high enough to allow the surgeon to operate without stooping or bending. Ideally, this should be a purpose-built operating or minor procedures table, which can be pumped up and down according to the surgeon's height. Also, ideally, the table should tip so that, if the client feels faint, he can be put in the head-down position. However, such tables are expensive and circumcision under local anaesthetic can be safely performed with a fixed-height table. Steps can be provided for the client to climb up onto the table, and bricks can be put under the table legs to create the head-down position.

An instrument trolley or table is required on which the instrument tray can be unpacked.

The procedure room floor should be made of material that can be easily cleaned and disinfected. Between cases the instrument trolley and the operating table top should be disinfected. If there is any spillage on the floor, this should be mopped with clean water and detergent and then disinfected. At the end of the operating day, the procedure room should be thoroughly cleaned and disinfected starting at the top and continuing to the floor, including all flat surfaces. A liquid disinfectant should be used,

diluted as recommended by the manufacturer. Other parts of the clinic, such as the waiting and recovery areas, should be cleaned regularly with water and detergent.

The lighting in the procedure room should be arranged so that the penis is well lit, and the surgeon can see what he is doing. Ideally, the clinic should be equipped with an operating theatre minor procedures lamp, but these are expensive. Adequate illumination can be provided by fluorescent lighting over the operating table.

Emergency medications and equipment for managing anaphylactic reactions¹ should be available in or near the procedure room. These should be kept in a clearly labelled box, and the contents should be checked periodically (at least every 6 months) to ensure that they are complete and that none of the medications are approaching or beyond their expiry date. The box should be kept in a cool place, away from direct sunlight. In addition, it is important to have available, in or near the procedure room, alternative antiseptic surgical cleaning solution, such as chlorhexidine, for patients allergic to povidone iodine, and spare sutures and needles.

The following equipment and instruments are required for standard adult male circumcision:²

- instrument tray wrapped with sterile drape
- dissecting forceps (finely toothed)
- artery forceps (2 straight, 2 curved)
- curved Metzenbaum's scissors
- stitch scissors
- Mayo's needle holder
- sponge-holding forceps
- scalpel knife handle and blades
- "O" drape (80 cm x 80 cm, with ~5 cm hole)
- gallipot for antiseptic solution (e.g. povidone iodine)
- povidone iodine (50 ml of 10% solution)
- plain gauze swabs (10 x 10 cm; 10 for the procedure, 5 for dressing)
- petroleum-jelly-impregnated gauze (5 x 5 cm or 5 x 10 cm) (*tulle gras*) and sticking plaster
- 15 ml of 1% plain lidocaine (without epinephrine) anaesthetic solution
- syringe, 10 ml (if single-use syringes and needles are unavailable, use equipment suitable for steam sterilization)
- injection needles (18- or 21-gauge)

¹ Emergency medications and equipment:
Essential: pocket mask with one-way valve, atropine (0.6 mg/ml ampoules), epinephrine (1 in 1000 solution (1 mg in 1 ml) ampoules).

Desirable: diazepam suppositories for rectal administration (10 mg in 2.5 ml), oxygen supply with mask and reservoir bag, saline for intravenous administration and giving set.

² Additional information on surgical equipment is available in the WHO Essential Emergency Equipment List (www.who.int/surgery/imeesc)

- suture material (chromic gut or vicryl 3-0 and 4-0) with 3/8 circle reverse-cutting needle
- gentian violet (no more than 5 ml) or sterile marker pen
- gloves, masks, caps and aprons
- condoms and information materials for client.

A specimen list of the disposable materials required for one adult circumcision is given in Appendix 4.2. Equipment should be disinfected and cleaned as described in Chapter 8.

A detailed discussion of kits and bundles of supplies (consumables, reusable and disposable instrument sets) for efficient delivery of circumcision programmes is included in the WHO document *Considerations for implementing models for optimizing the volume and efficiency of male circumcision services*.³ This discusses various combinations of consumables and supplies required according to circumcision method and approaches to implementing a high throughput circumcision service.

MAINTENANCE AND REVIEW OF EQUIPMENT

Surgical instruments wear out with use and with repeated disinfection and sterilization. Each clinic should therefore carry out a periodic review of all surgical instruments. Failure to maintain instruments in good working condition can cause operative difficulties and complications. A haemostatic artery forceps with bent blades, for instance, will not properly occlude a bleeding vessel, while blunt dissection scissors can result in a ragged wound.

Checklist for haemostatic artery forceps

- Do the points meet accurately?
- Is the grip on the points worn?
- Does the ratchet lock securely or is it worn?

Checklist for surgical dissection scissors

- Is the cutting edge of the blade sharp?
- Do the blades meet securely?
- Is the screw loose?

Checklist for needle holders

- Do the points meet accurately?
- Is the grip on the points worn?

Checklist for dissection forceps (tweezers)

³ World Health Organization. *Considerations for implementing models for optimizing the volume and efficiency of male circumcision services* (field testing edition). Geneva, World Health Organization, 2010 (available at www.malecircumcision.org).

- Do the points meet accurately (crossed points are a common problem with old instruments)?
- If toothed, are the teeth worn?

SCREENING ADULT CLIENTS

The circumcision team needs to ensure that clients are fit for surgery, are well informed about the surgery and are suitable for circumcision under local anaesthesia in their clinic. If there is any doubt as to a client's suitability, he should be referred to the district hospital or higher level of care.

The circumcision team should take a focused medical history and perform a clinical examination of the penis. Both the history and the examination should be documented (see sample record form in Appendix 4.1).

History

When taking the medical history, enquire about:

- current general health;
- whether the client is taking any medicines;
- whether the client has any known allergies to medicines;
- history of haemophilia, bleeding disorders or anaemia;
- any current genital infection, ulcer or penile discharge (see Chapter 2);
- whether the client has problems with penile erection or any other concerns about sexual function.

There are few medical contraindications to circumcision under local anaesthesia. However, as for all elective surgery, circumcision should not be performed on anyone suffering from an acute disorder, infection or febrile illness. In this case, the operation should be postponed until the problem has been resolved.

Physical examination

The anatomy and structure of the normal penis are described and illustrated in Appendix 4.3. When examining the penis, retract the foreskin and inspect the glans. The urinary opening (urethral meatus) should be near the tip of the glans, and should not be scarred or diseased. The foreskin should be easily retractable and not inflamed or narrowed. If the penis, glans, meatus and foreskin are healthy, the client is suitable for circumcision in the clinic.

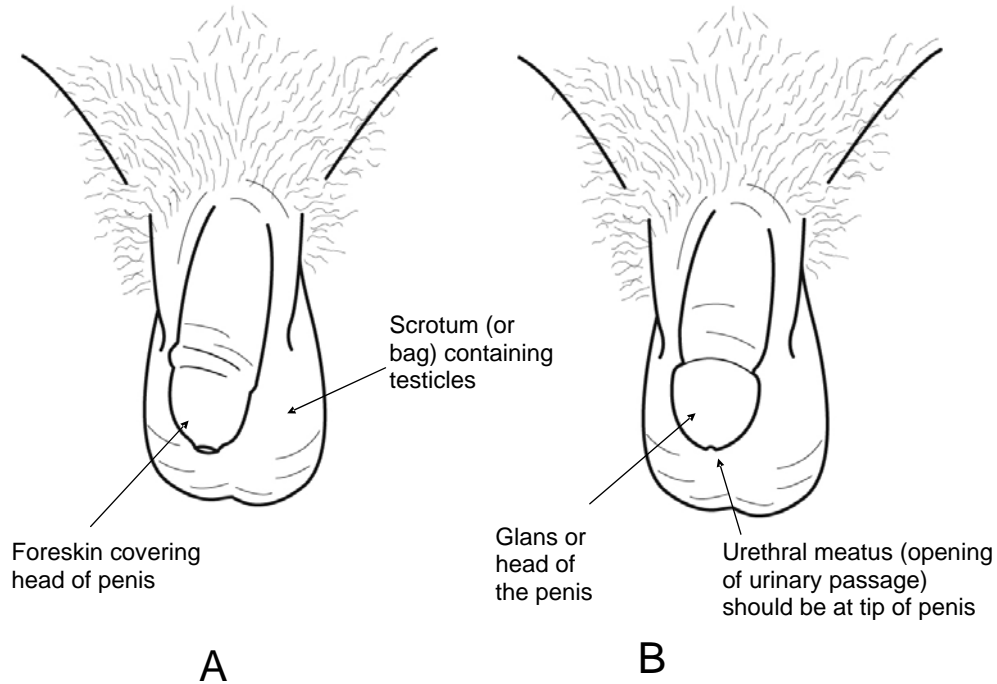


Fig. 4.1 Appearance of the normal penis. A: Uncircumcised. B: Circumcised

Absolute contraindications to clinic-based circumcision include:

- **Anatomical abnormality** of the penis. Men whose urethral meatus is on the underside of the penis (hypospadias) or on the upper side of the penis (epispadias) must not be circumcised, because the foreskin may be needed in a repair operation (see illustrations in Appendix 4.4).
- **Chronic paraphimosis.** In this situation the foreskin is permanently retracted. It is thickened and swollen, and the client will indicate that this is a longstanding problem (see illustration in Appendix 4.4).
- **Genital ulcer disease.** This should be investigated and treated (see Chapter 2). Once treatment has been completed, the client may be suitable for clinic-based circumcision.
- **Urethral discharge.** This should be investigated and treated (see Chapter 2). Once treatment has been completed the client may be suitable for clinic-based circumcision.
- **Other obvious visible pathology, such as penile cancer.** The client should be referred to a specialist.
- **Chronic disorders of the penis and foreskin,** such as filariasis (a parasitic infestation that blocks the lymph ducts and prevents drainage). The client should be referred to a specialist.
- **Bleeding disorders,** such as haemophilia. The client should be referred to a higher level. Careful preoperative assessment and medical preparation are required, and there may be a need to give a preoperative infusion of factor VIII, or to give vitamin K or other medication.

There are a number of relative contraindications to clinic-based circumcision. Whether circumcision can go ahead in these circumstances will depend on the experience of the surgeon. They include:

- **A tight foreskin as a result of scar tissue** (phimosis). This may make it impossible to retract the foreskin (see illustration in Appendix 4.4). If there is a history of penile discharge or repeated infections (balanitis), the client should be referred to a specialist. Thick adhesions between the glans and foreskin may also require referral to a specialist.
- **Scar tissue at the frenulum.** Sometimes young men suffer from repeated tearing of the frenulum. This can result in thick scar tissue in the frenulum area and may make circumcision and healing more difficult.
- **Penile warts.** Penile warts can cause a lot of bleeding. Whether the circumcision can proceed will depend on the extent of the warts. It is usually possible to proceed with circumcision if there are one or two small warts on the foreskin, as these will be removed with the foreskin. However, if there are extensive warts, circumcision is best undertaken in a specialist hospital where diathermy is available.
- **Balanitis xerotica obliterans.** This is a plaque of scar tissue that extends onto the surface of the glans and involves the urethral meatus and the foreskin. It is also called *lichen planus et atrophicus*. In mild cases, circumcision can proceed as normal. If the process involves the urethral meatus, the client should be referred to a district hospital or specialist centre where, in addition to the foreskin being removed, the meatus may be widened.
- **Other abnormalities of the genitalia,** such as hydrocele causing scrotal swelling. The patient should be referred to a specialist centre for assessment.

HIV testing and informed consent for surgery

All men requesting circumcision for HIV prevention should be offered an HIV test, and appropriate post-test counselling. The purpose of this test is to ensure that more people in the community know their HIV status and are thus better able to take care of themselves, either to remain free of HIV infection, or to take medicine that will slow the progression to AIDS.

While an HIV test is recommended for all men requesting circumcision to reduce their risk of HIV infection, the test is not mandatory before the operation can be performed. No person should be forced to have an HIV test against his or her will, and men have the right to refuse without affecting their clinical care. The purpose of the HIV test is not to protect the clinic staff from HIV infection – they should, in any case, take

standard precautions to avoid infection with HIV and other organisms, and to avoid passing such infections from one patient to another. Men who are found to be infected with HIV can safely have a circumcision procedure, provided they are clinically healthy, but there is no point in having a circumcision to reduce the risk of acquiring or transmitting HIV infection. It is most important that men with HIV infection take steps to reduce the likelihood of transmitting the virus to others by avoiding penetrative sexual intercourse or always using condoms.

The circumcision team should ensure that the client has been informed about the risks and benefits of male circumcision as described in Chapter 3. This information should be given in an understandable way, using everyday local language. The oral information should be backed up by written information sheets in the local language. After receiving the information the client should be allowed to ask questions. He should then be given time to reflect before being asked to sign the certificate of consent. An example information sheet and consent certificate can be found in the appendices to Chapter 3.

PREOPERATIVE WASHING BY THE PATIENT

On the day of surgery, the client should wash his genital area and penis with water and soap, retracting the foreskin and washing under it. This ensures that the genital area is clean before he comes to the clinic. Immediately before the operation, the skin should be further cleaned with povidone iodine (see Chapter 5).

If the pubic hair is long and likely to get in the way of surgery or interfere with the dressing, it should be clipped before the patient enters the operating room. The patient can do this at home on the day of surgery, or it can be done at the clinic. Shaving is not necessary.

The patient should be given the opportunity to empty his bladder before going into the operating room.

SCRUBBING AND PUTTING ON PROTECTIVE CLOTHING

Before entering the operating room area, all members of the surgical team should:

- Remove all jewellery and ensure nails are trimmed or filed.
- Remove any artificial nails or nail polish.
- Wash hands and arms up to the elbow with a non-medicated soap.
- Make sure hands and nails are not visibly soiled.

Before the circumcision operation, anyone who will touch the sterile surgical field, the surgical instruments or the wound

should scrub their hands and arms to the elbows. Scrubbing cannot completely sterilize the skin, but will decrease the bacterial load and risk of wound contamination from the hands. Each scrub should take 5 minutes, and the process should be done at the start of the operating session and, if more than one circumcision is planned, between each operation.

The scrub can be done with a medicated soap and water, or with an alcohol-based preparation.

Surgical scrub with a medicated soap (Fig. 4.2)

- Start timing.
- Using a medicated soap, scrub each side of each finger, between fingers, and the back and front of each hand.
- Wash each side of the arms from wrists to elbows.
- Keep your hands higher than your arms at all times during the procedure.
- Rinse hands and arms by passing them through the water in one direction only, from fingertips to elbow. Do not move your arms back and forth.
- After scrubbing, hold up your arms to allow the water to drip off your elbows.
- Turn off the tap with your elbow.

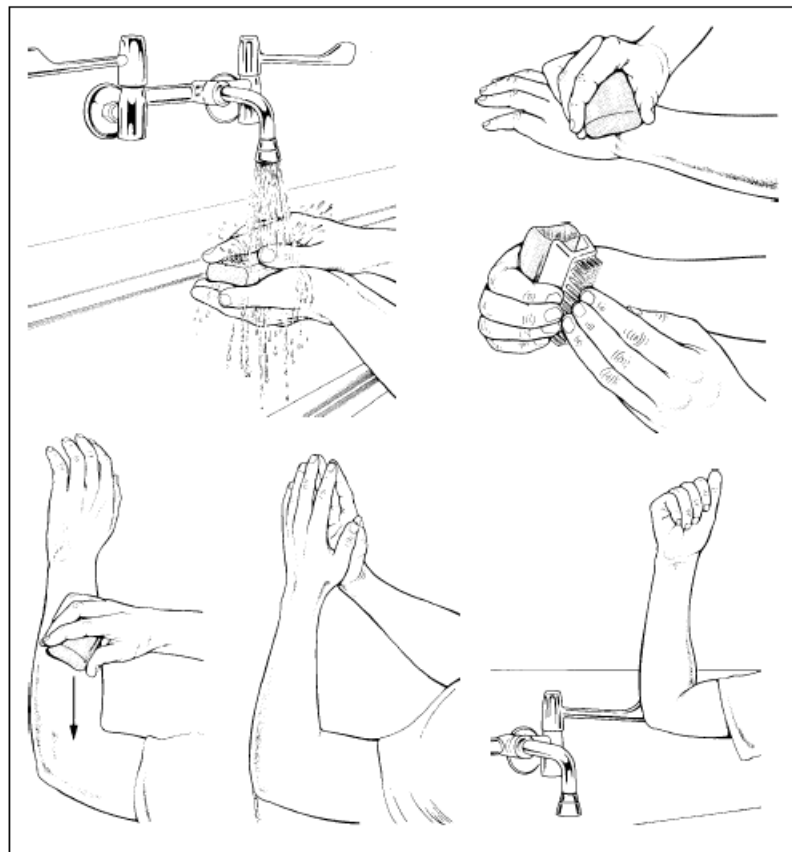


Figure 2.4

Fig. 4.2 Scrubbing hands with medicated soap and water⁴

⁴ Fig. 4.2 and 4.3 are reproduced from: WHO. *Surgical care at the district hospital*. World Health Organization, 2003.

- Dry the hands and arms with a sterile towel. Make sure the towel does not become contaminated by coming into contact with non-sterile surfaces.
- Hold your hands and forearms away from your body and higher than your elbows until you have put on the gloves (or gown and gloves, if gown is used) (Fig. 4.3).

Surgical scrub with an alcohol-based preparation

- Start timing.
- Use sufficient alcohol hand rub to keep the hands and forearms wet throughout the scrub.
- Rub each side of each finger, between fingers, the back and front of each hand, and each side of the arms from wrist to elbow.
- Allow hands and forearms to dry thoroughly.

After scrubbing, put on sterile operating gloves, taking care not to contaminate the sterile outer surface of the gloves (Fig. 4.3).

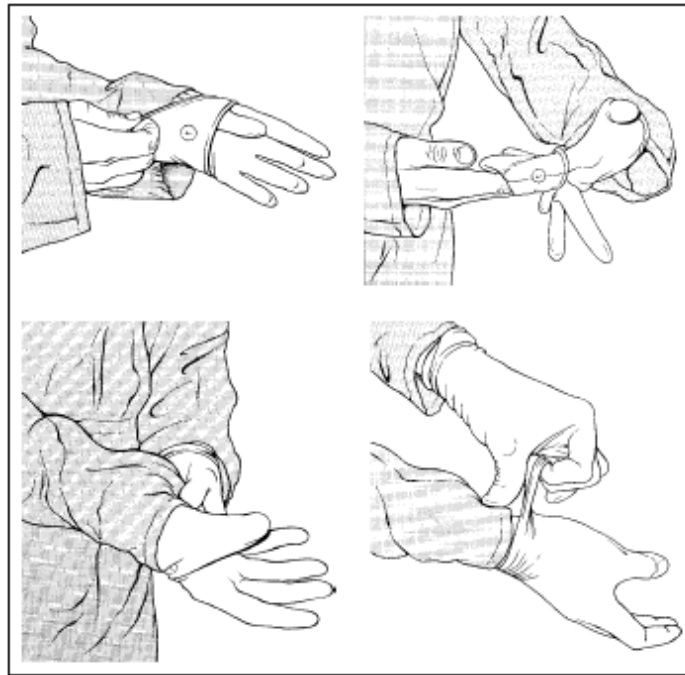


Fig. 4.3 Putting on surgical gloves

Surgical gloves prevent transmission of HIV, hepatitis and other infections through contact with blood. However, there is always a possibility that a glove will be accidentally punctured. If this happens during an operation, promptly remove the glove, rinse the hand with antiseptic, and put on a new sterile glove. If the glove has leaked as a result of the puncture, re-scrub before putting on new gloves. Patient safety is of primary concern; do not compromise it. Change gloves only when it is safe for the patient. For example, if the patient is bleeding a lot,

stop the bleeding with an artery forceps before changing the punctured glove.

Whether to use a gown

A surgical gown is recommended, though a circumcision operation may be performed with the surgeon wearing sterile operating gloves but without a sterile gown, or using full operating theatre gowning techniques. It is less expensive to use gloves only, and this is the practice in many clinic settings. The surgeon should, in any case, wear a clean theatre uniform, cap and theatre shoes. If a surgical gown is not used, it is important that the surgeon wears a clean apron to protect clothes from splashes during the operation.

Face masks and protective eyewear

Face masks are recommended, as they reduce droplet contamination if the surgeon coughs or sneezes, and protect the surgeon's mouth from any spray of blood droplets. Eyewear is also recommended, and should be worn (together with a mask) whenever an accidental splash of blood onto the face is likely.

Appendix 4.1

SAMPLE CLIENT RECORD FORM FOR ADULTS AND ADOLESCENTS

GENERAL INFORMATION

1. Name: _____
2. Address: _____
3. Date of visit: / /
Day Month Year
4. Patient's ID Number:
5. Hospital ID Number: if different from above
6. Date of birth: / / Age: _____ years
Day Month Year
7. Patient is referred by: 1: self/parent; 2: family planning clinic; 3: voluntary testing and counselling centre; 4: urology clinic; 5: outpatient department; 6: nongovernmental organization; 7: other (specify) _____
8. Marital status: 1: single; 2: married; 3: divorced/separated; 4: other (specify) _____
9. Tribe/ethnicity: _____
10. Religion: 1: Buddhist; 2: Christian; 3: Hindu; 4: Jewish; 5: Moslem; 6: other (specify) _____
11. Primary indication for circumcision: 1: for partial protection against HIV; 2: social/religious; 3: personal hygiene; 4: phimosis; 5: paraphimosis; 6: erectile pain; 7: recurrent balanitis; 8: preputial neoplasm; 9: other (specify) _____
12. Is client sexually active? Yes No
13. Previous contraceptive use: 1: none; 2: condoms; 3: vasectomy; 4: other (specify) _____
14. HIV test
- a. HIV test recommended?: Yes No
- b. HIV test performed? Yes No
- c. Post-test counselling given? Yes No

MEDICAL HISTORY

15. Does the patient have a history of any of the following?

- a. Haemophilia or bleeding disorders: Yes No
- b. Diabetes: Yes No

16. Is patient currently being treated or taking medications for any of the following?

- a. Anaemia Yes No
- b. Diabetes: Yes No
- c. AIDS: Yes No
- d. Other (specify)_____ Yes No

17. Does patient have any known allergy to medications?

- Yes No

If yes, specify: _____

18. Has patient had a surgical operation? Yes No

If yes, specify nature, date and any complications:

19. Does the client have any of the following complaints?

- a. Urethral discharge: Yes No
- b. Genital sore (ulcer): Yes No
- c. Pain on erection: Yes No
- d. Swelling of the scrotum: Yes No
- e. Pain on urination: Yes No
- f. Difficulty in retracting foreskin: Yes No
- g. Concerns about erection or sexual function: Yes No
- h. Other (specify)_____ Yes No

PHYSICAL EXAMINATION OF GENITALS

20. Any significant abnormality on general genital examination (e.g. hypospadias, epispadias)?

Yes No

If yes, specify _____

21. Examination of penis:

Normal Abnormal (e.g. phimosis, paraphimosis, discharge, genital warts, genital ulcer disease)
specify _____

SUITABILITY FOR CIRCUMCISION PROCEDURE

22. Has client given informed consent for circumcision? Yes No

23. Is client suitable for circumcision at the clinic? Yes No

24. Is client in good general health? Yes No

If client is not in good general health, circumcision should be delayed until he has recovered. If client shows signs of immunodeficiency (e.g., severe unexplained weight loss, unexplained recurrent opportunistic infections, requires bed rest for at least half the day), client should be referred to a higher level of care and an HIV test should be performed to verify that client does not have HIV infection.

CIRCUMCISION PROCEDURE

25. Type of anaesthesia: Local (penile nerve block with lidocaine)
 General
 Other (specify) _____

26. Type of circumcision procedure:

Dorsal slit method Forceps-guided method
 Sleeve method Other method (e.g. appliance),
specify _____

27. Date of operation: / /
Day Month Year

28. Surgeon: _____ **Nurse:** _____

29. Start time: _____ **End time:** _____ **Duration:** _____ minutes

30. Postoperative medications: _____

31. Complications: None Yes (fill in Male Circumcision Adverse Events form)

Appendix 4.2

SAMPLE DISPOSABLE CONSUMABLES FOR ONE ADULT MALE CIRCUMCISION

- Sponge-holding forceps (1)
- Disposable scalpel (1)
- "O" drape (80 × 80 cm drape with ~5 cm diameter hole)
- Gallipot for antiseptic solution (e.g. povidone iodine)
- Povidone iodine (50 ml 10% solution)
- Plain gauze swabs (10 10 × 10 cm for procedure, 5 10 × 10 cm for dressing)
- Petroleum-jelly impregnated gauze (5 × 5 cm or 5 × 10 cm) ("tulle gras") and sticking plaster
- 15 ml 1% plain lidocaine (without adrenaline) anaesthetic solution in a single-use syringe with 21-gauge needle
- 18" chromic gut 4-0 sutures with 13 mm to 19 mm 3/8 circle reverse-cutting needle
- Sterile marker pen
- Gloves, mask, cap and disposable apron (two sets)
- Condoms

Appendix 4.3

DETAILED ANATOMY OF THE PENIS

It is important for the surgeon to have a good understanding of penile anatomy before undertaking male circumcision.

The penis is composed of two interconnected erectile bodies, the *corpora cavernosa*, which are attached and thus anchored to the underside of the front of the pubic bones. During erection, these bodies fill with blood, making the penis rigid. The wall of the erectile bodies is made of tough elastic tissue – the *tunica albuginea*. The urethra is on the underside of the *corpora cavernosa*. Surrounding the urethra is a quilt of erectile tissue, the *corpus spongiosum*, which continues and expands at the distal end of the penis to form the glans; this is like a helmet across the ends of the *corpora cavernosa*. The *corpus spongiosum* contributes to engorgement of the glans and to some expansion of the girth of the penis, but does not contribute significantly to its rigidity.

The urethra runs along the underside of the penis to the tip of the glans. The urethral meatus should be at the tip of the glans. In the malformation called hypospadias, it may emerge on the underside of the glans in the corona. Minor variations in the position of the urethral meatus are very common and do not require any treatment, provided that the man is able to pass urine freely and has a straight penile erection. The foreskin is the fold of skin that covers the glans when the penis is soft; during sexual intercourse, the foreskin is pulled back away from the glans. In the midline of the underside of the penis, there is a band of skin – the frenulum – which helps the foreskin to return to its usual position. Immediately underneath the frenulum is the frenular artery, which can cause troublesome bleeding during circumcision procedures. Immediately underneath the frenular artery is the urethra. It is important to understand the relative positions of the urethra, the frenular artery and the frenulum, because the urethra can easily be injured during attempts to stop bleeding from the frenular artery. The urethra is also vulnerable to injury in babies, because the tissue between the frenulum and the urethra is very thin and delicate.

The erectile bodies (*corpora cavernosa*), the urethra and its erectile tissue (*corpus spongiosum*) are in turn held together by a tough penile fascia (Buck's fascia). The penis has a plentiful blood supply from the internal iliac arteries in the pelvis via the pudendal arteries. These in turn divide to give rise to the dorsal penile artery on each side and an artery in the centre of each erectile body. In addition there are many small arteries linking these.

The dorsal penile nerves are located on the upper aspect of the penis, slightly to the side of the midline and deep to the penile fascia. At the base of the penis, these nerves are relatively compact but as they run towards the glans the nerve fibres fan out. This is why, in a penile block, most of the local anaesthetic is injected at the 1 o'clock and 11 o'clock positions at the base of the penis (see Chapter 5).

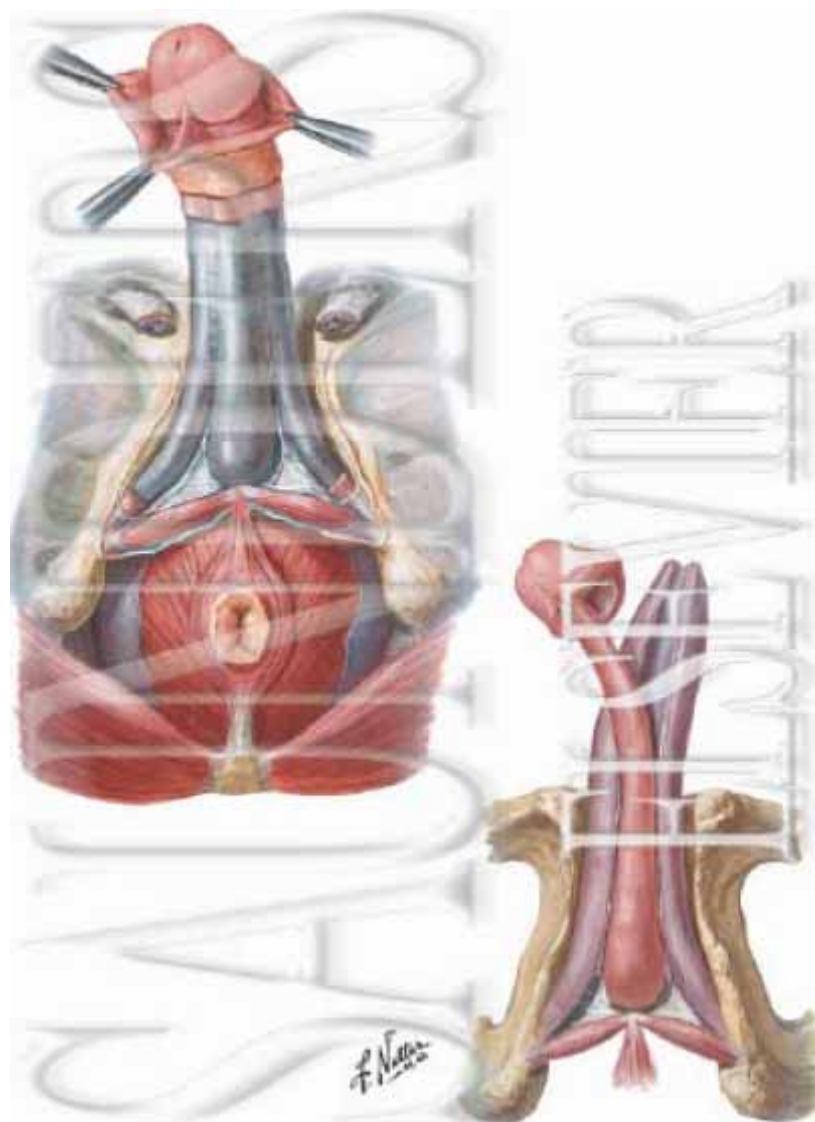


Fig. 4.4 Anatomy of the penis
Reproduced with permission from www.netterimages.com (image no. 2969)

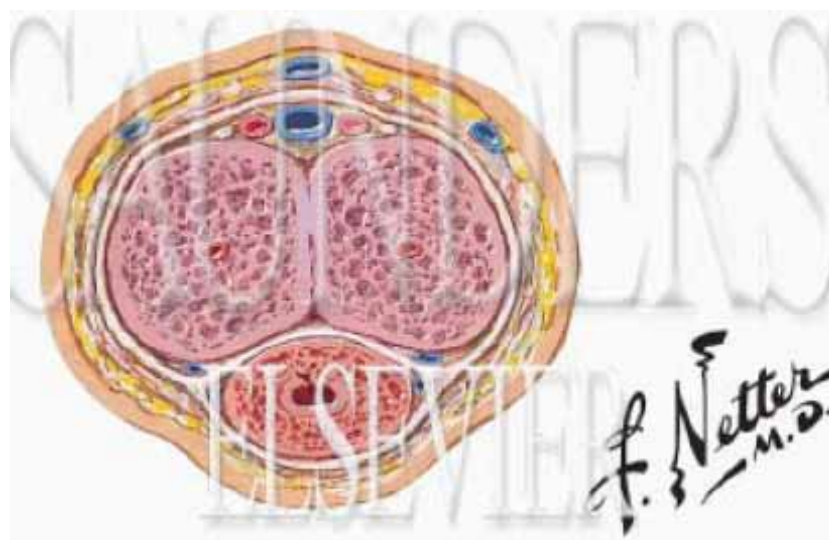


Fig. 4.5 Cross-section of the penis
Reproduced with permission from www.netterimages.com (image no. 7884).

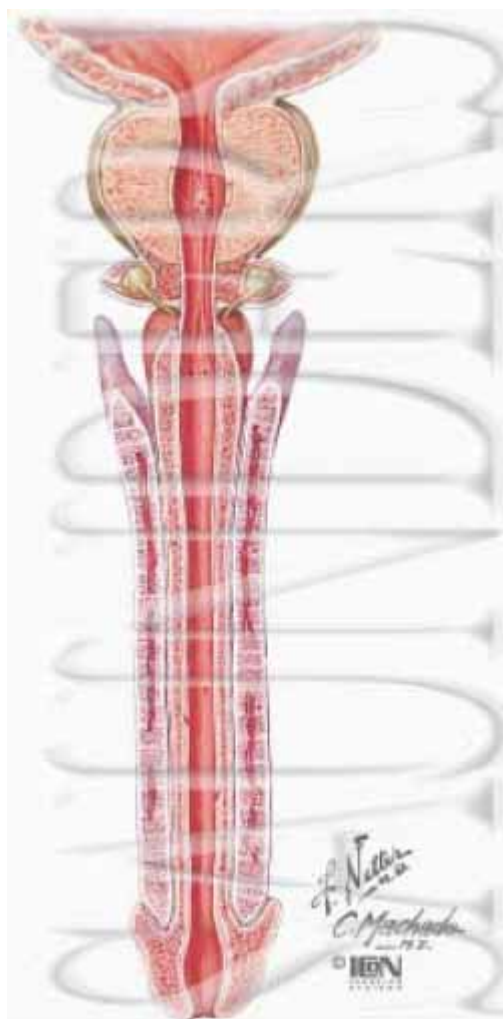


Fig. 4.6. Longitudinal section of the penis
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Appendix 4.4

SELECTED ANATOMICAL ABNORMALITIES OF THE PENIS



Fig. 4.7 Hypospadias
(www.netterimages.com, #7424, with permission)

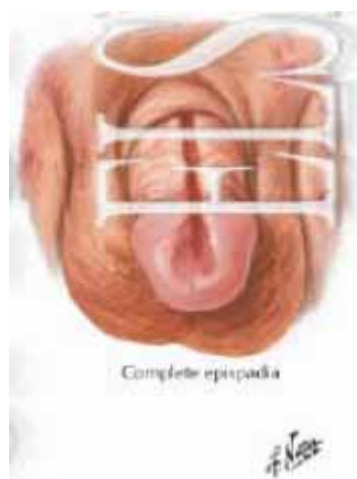


Fig. 4.8 Epispadias
(www.netterimages.com, #7424, with permission)

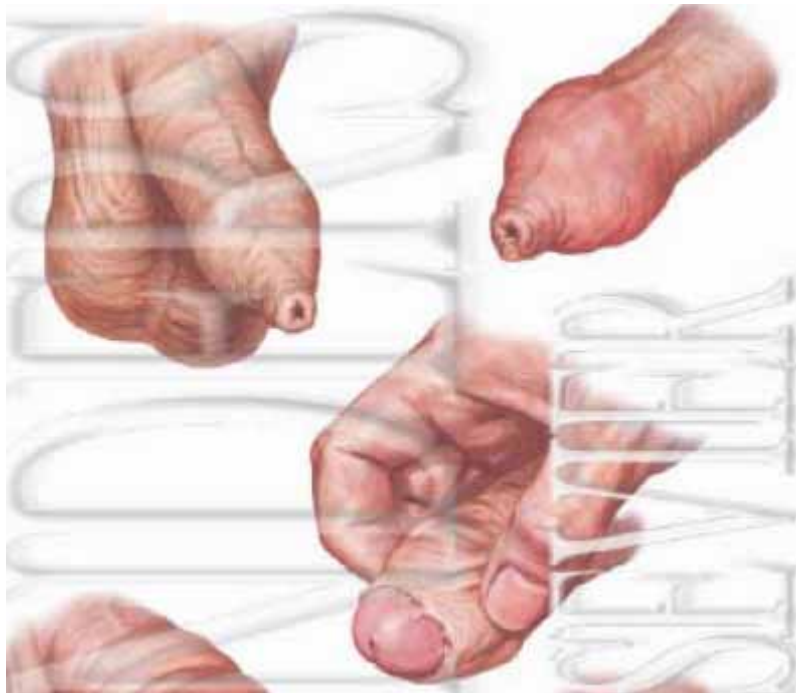


Fig. 4.9: Phimosis
(www.netterimages.com, #1468, with permission)

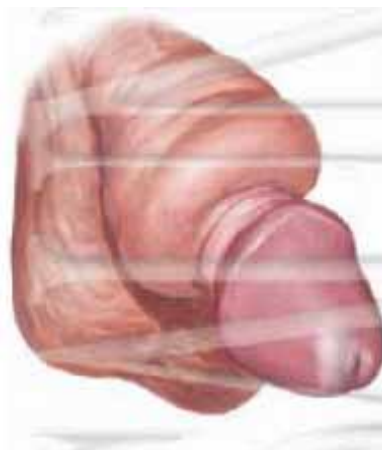


Fig. 4.10 Paraphimosis
(www.netterimages.com, #1468, with permission)

Chapter 5

Surgical procedures for adults and adolescents

SUMMARY

This chapter gives step-by-step instructions for performing a circumcision on an adult or an adolescent. It covers tissue handling, skin preparation, local anaesthesia, the circumcision itself, suturing, and dressing the wound.

Three surgical techniques are described:

- the forceps-guided method;
- the dorsal slit method;
- the sleeve resection method.

SURGICAL SKILLS REQUIRED FOR SAFE CIRCUMCISION

Anatomy of the penis and choice of surgical technique

It is important to have a good understanding of penile anatomy before undertaking male circumcision. This is described and illustrated in detail in Chapter 4 and Appendix 4.3. Variations in technique for minor abnormalities of the foreskin are described in Appendix 5.1.

Three widely-used surgical techniques for adult and adolescent circumcision are described in detail in this chapter. They have been selected on the basis of extensive experience worldwide, as well as the results from three randomized controlled trials of circumcision in Kenya, South Africa and Uganda. It is not recommended that a nursing, clinical or medical officer learn all three surgical techniques – it is best to become a master of one adult technique and, if appropriate, one paediatric technique. This will produce the best results with the least complications. Providers should become expert in the technique most suited to the circumstances of their practice or the preferred technique adopted nationally. All three recommended techniques are fully illustrated and can be referred to in the context of a training course. After the training the illustrations and step-by-step guide can be used to reinforce what has been learnt and for retraining. Experienced surgeons should be able to perform all three techniques with little difficulty, and to train less experienced providers in any of the three techniques described.

Tissue handling

The surgeon should handle tissue gently. Unnecessary crushing of tissue causes more scarring, delays healing and increases the risk of infection. Use dissecting forceps (tweezers) to hold the skin edge when suturing the circumcision wound; do not use artery forceps. Place haemostatic sutures accurately, taking care to avoid inserting the needle too deep into the surrounding tissue.

Haemostasis^a

Minimizing blood loss is part of good surgical technique and safe medical practice. It is very important, particularly for men who are anaemic. (Ideally, these men should not be circumcised in the clinic, but should be referred to a hospital.) Another important reason to minimize blood loss is to reduce contamination of instruments, operating theatre drapes and gowns, to lower the risk of transmitting blood-borne diseases, such as HIV and hepatitis B, to theatre staff.

The following techniques can be used to reduce blood loss.

Compression. After the incision has been made, and at any time during the procedure, oozing of blood from cut surfaces can be controlled by applying pressure over a gauze swab for a few minutes. Usually, this will stop the bleeding.

Temporary occlusion of blood vessels. Control individual bleeding vessels by applying an artery forceps to the blood vessel (Fig 5.1), grasping a minimal amount of adjacent tissue.

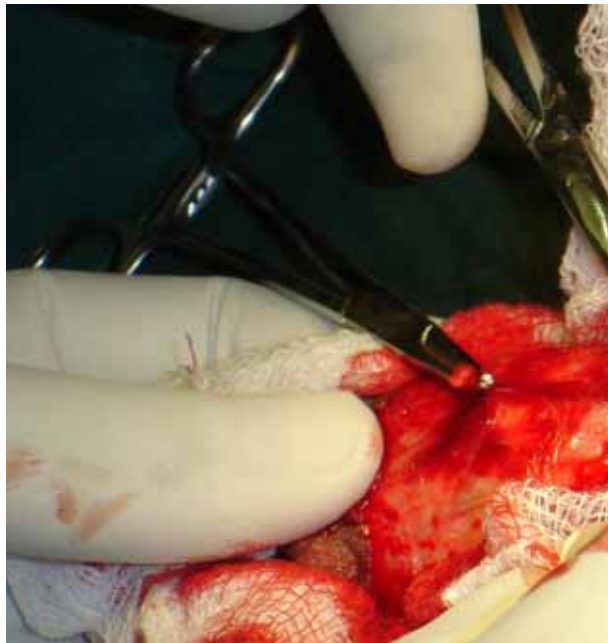


Fig 5.1 Artery forceps applied to occlude a blood vessel

An alternative technique is to pick up the vessel using forceps (tweezers) and then apply an artery forceps (Fig 5.2).

^a Adapted from World Health Organization *Surgical care at the district hospital*. Geneva, World Health Organization, 2003

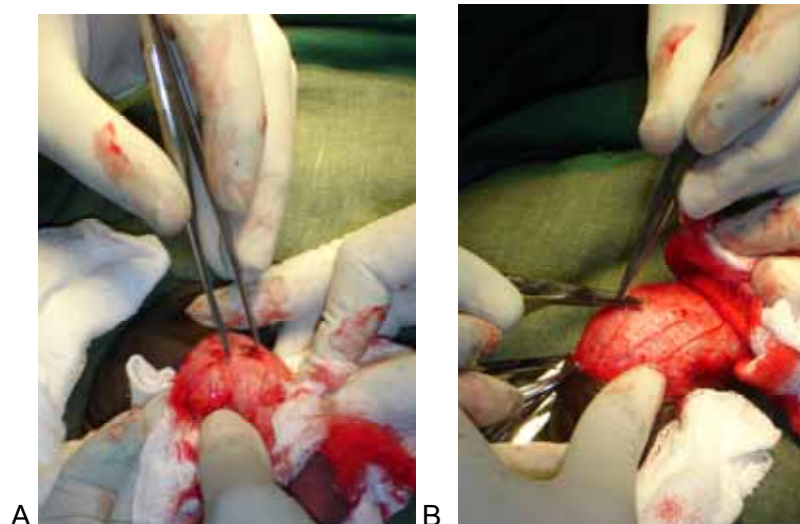


Fig 5.2 Picking up a blood vessel with forceps (tweezers) (A) to facilitate accurate placing of the artery forceps (B)

Tying and under-running. Either tie the vessel or under-run and tie it. The simplest procedure is to tie the vessel below the artery forceps (Fig. 5.3). The basic tie consists of two throws (Fig. 5.3A), but many surgeons make a third throw (Fig. 5.3B) to give the knot extra security.

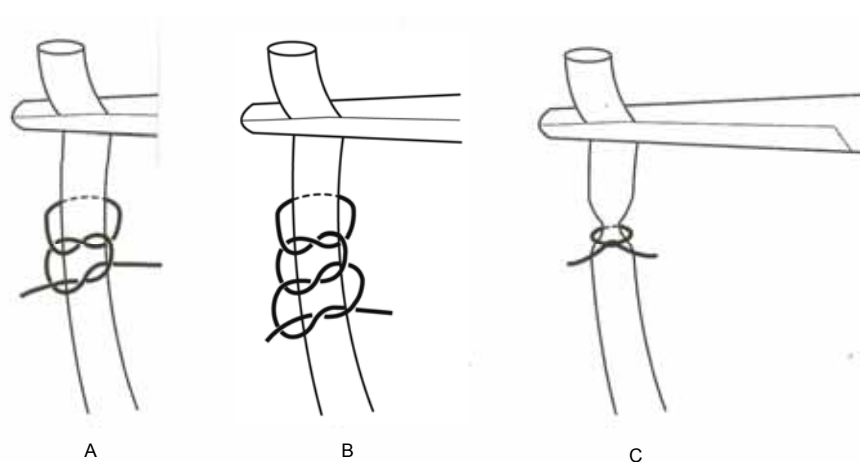


Fig. 5.3 Simple tie. A: the knot with two throws. B: the knot with three throws. C: the finished knot pulled tight.

It is important to ensure that the tie is securely placed and not liable to slip off, particularly in the first few days following the operation during a penile erection. If there is any doubt about the security of the tie, it is better to use the under-running technique (Fig. 5.4). Secure the bleeding vessel with an artery forceps. Pass the suture needle just beneath the artery (not too deep!) and pull through, leaving enough suture material for the tie. Then pass the suture beneath the vessel a second time, pull gently to occlude it, and tie a knot, as above.

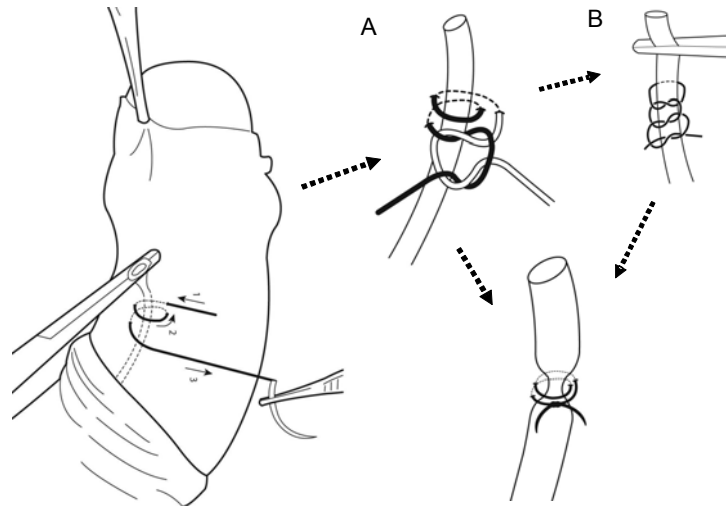


Fig. 5.4 Under-running a bleeding vessel. A: the knot with two throws. B: the knot with three throws.

Diathermy

In surgical diathermy coagulation is achieved by creating heat with an electrical current passing through the tissue. The techniques described in this manual can all be undertaken safely without diathermy equipment and any surgeon undertaking male circumcision should be adept at stopping bleeding without diathermy. Diathermy has the advantage of decreasing haemostasis time thereby reducing the total procedure time.

Monopolar and bipolar diathermy: There are two diathermy electrical circuits in common use – monopolar and bipolar. With monopolar diathermy the current runs from the machine through the diathermy forceps, through the tissue held by the forceps, through the patient's body to a grounding plate, and then back to the machine. In bipolar diathermy the current runs from the machine to one of the two prongs of the diathermy forceps, through the tissue grasped between the prongs and then back through the other prong to the machine. With both types care must be taken to ensure that the patient is not in contact with any metal or conducting material as there is a risk of earth leakage and burns at the point of contact. This risk is greatest with monopolar diathermy. Whenever diathermy is used, care must be taken in positioning on the operating table, the choice of operating table and clinic construction to prevent current leakage to earth. Some monopolar diathermy machines include automatic safety switch off in case of earth leakage, disconnected grounding plate, or poor contact between the grounding plate and skin. The grounding plate should be placed to ensure the whole surface is in contact with the patient's skin, usually on the thigh or buttocks. It may be necessary to shave hairs to ensure good contact.

If the machine fails to respond when the surgeon activates the current or there is no obvious and immediate visual evidence of coagulation, the surgeon should immediately stop applying current and check all connections. If current continues to flow, burns may occur where resistance is greatest, most commonly where the grounding plate is in contact with the body, or where the body is in contact with metal. In rare circumstances the burn may occur elsewhere in the body. Monopolar diathermy should not be used for infant circumcision because the point of greatest electrical resistance may be at the base of the penis with risk of coagulation and loss of the whole penis.

Further technical description of the current types is beyond the scope of this manual but the circumcision surgeon should be aware that many diathermy machines have different settings for coagulation or cutting currents. Only the former should be used for haemostasis.

Diathermy technique: When using diathermy, the surgeon should apply the forceps as precisely as possible. The best results will be obtained if the blood vessel is grasped between the diathermy prongs with minimal other tissue, and the current activated for the shortest time required to ensure haemostasis. If too much tissue is grasped, diathermy will not stop the bleeding because the heat is too diffuse. Prolonged diathermy causing large black burns should be avoided as these may increase the risk of infection, post operative pain or scar tissue formation. Particular care must be taken near the frenulum because there is a risk of burning through to the urethra which is near to the surface and creating a fistula. Diathermy should also be used with caution close to the skin and mucosal edges as transmitted heat may cause burns. Diathermy can be used to stop bleeding from small blood vessels, but it is safer to apply an artery forceps and tie or under-run larger vessels as described above.

Suture material

Suture size is a compromise between ensuring adequate tensile strength and keeping the amount of foreign material to a minimum. Larger suture sizes produce a more unsightly scar, and small lumps can persist when large-size sutures have been used to tie the blood vessels. The preferred suture size for adult male circumcision is 3-0 or 4-0 chromic gut or vicryl rapide. Vicryl rapide is more expensive than chromic gut. The suture may be mounted on a taper-cut, round-bodied or reverse-cutting needle, according to the surgeon's preference. The taper-cut needle passes more easily through the skin, but easily tears the skin on the inner aspect at the corona.

Suturing

The following are the basic suturing techniques:

Simple interrupted suture. This is the simplest type of stitch and results in good apposition. The point of the needle should pass through the skin at 90 degrees to the skin surface and exit at the same angle (Fig. 5.5). The nearer to the skin edge the needle goes in, the better the skin edge apposition but the higher the risk of the stitch cutting out. If the stitches are placed at a greater distance from the wound edge,

there is a risk of inversion (burying) of the skin edges and poor healing. For this reason, in male circumcision, a combination of simple and mattress sutures is recommended.

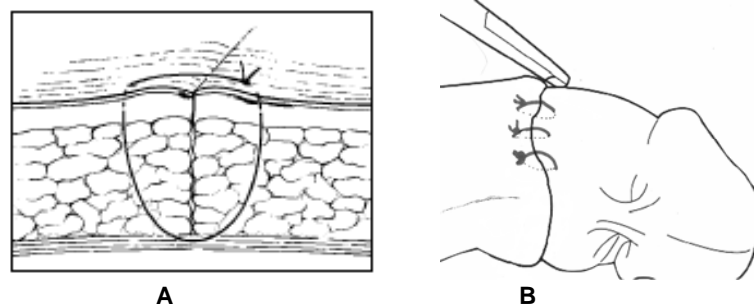


Fig. 5.5 Simple interrupted suture. A: suture in place holding the skin edges together. B: simple sutures closing the circumcision incision.

Mattress sutures. Mattress sutures give a more precise apposition of the wound edges and reduce the risk of burying the skin edges. They are more complex than simple interrupted sutures, and therefore more time-consuming to put in.

Vertical mattress suture

The technique is illustrated in Fig. 5.6.

1. Start the first bite wide of the incision and pass to the same position on the other side of the wound.
2. Start the second bite on the side of the incision where the needle has just exited the skin. Pass the needle through the skin between the exit point and the wound edge, in line with the original entry point. From this point, take a small bite; the final exit point is in a similar position on the other side of the wound.
3. Tie the knot so that it does not lie over the incision line. This suture approximates the subcutaneous tissue and the skin edge.

When suturing the circumcision wound, vertical mattress sutures are usually placed in the 12 o'clock, 3 o'clock and 9 o'clock positions (taking the frenulum as the 6 o'clock position).

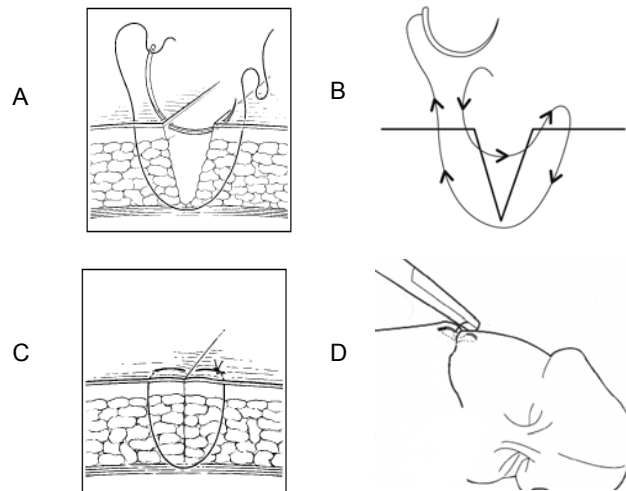


Fig. 5.6 Vertical mattress suture. A, B: the technique. C: vertical mattress suture holding the skin edges and subcutaneous tissues together. D: A vertical mattress suture in the 9 o'clock position.

Horizontal mattress suture

The technique is illustrated in Fig. 5.7.

1. Make two sutures, aligned beside one another. Align the first stitch across the wound; begin the second on the side that the first ends.
2. Tie the knot on the side of the original entry point.

A horizontal mattress suture is placed in the 6 o'clock position (frenulum).

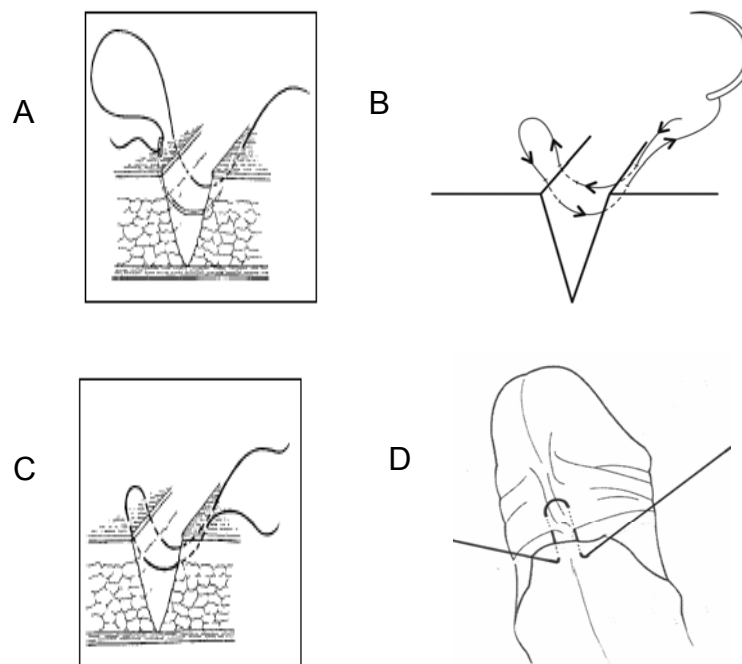


Fig. 5.7 Horizontal mattress suture. A, B, C: the technique. D: A horizontal mattress suture at the frenulum (6 o'clock position).

Fig. 5.8 shows the orientation and positions of the horizontal and vertical mattress sutures, and the simple interrupted sutures, to close the male circumcision wound.

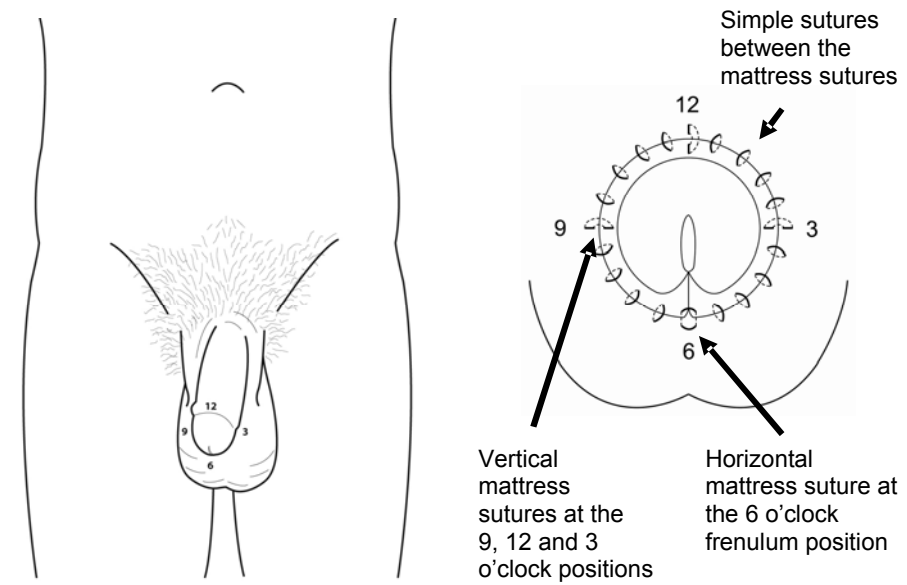


Fig. 5.8 Sutures used to close the circumcision wound.

Tying knots

Knots can be tied by hand or using instruments. It is more economical to tie knots using instruments, as this uses less suture material (Fig. 5.9).

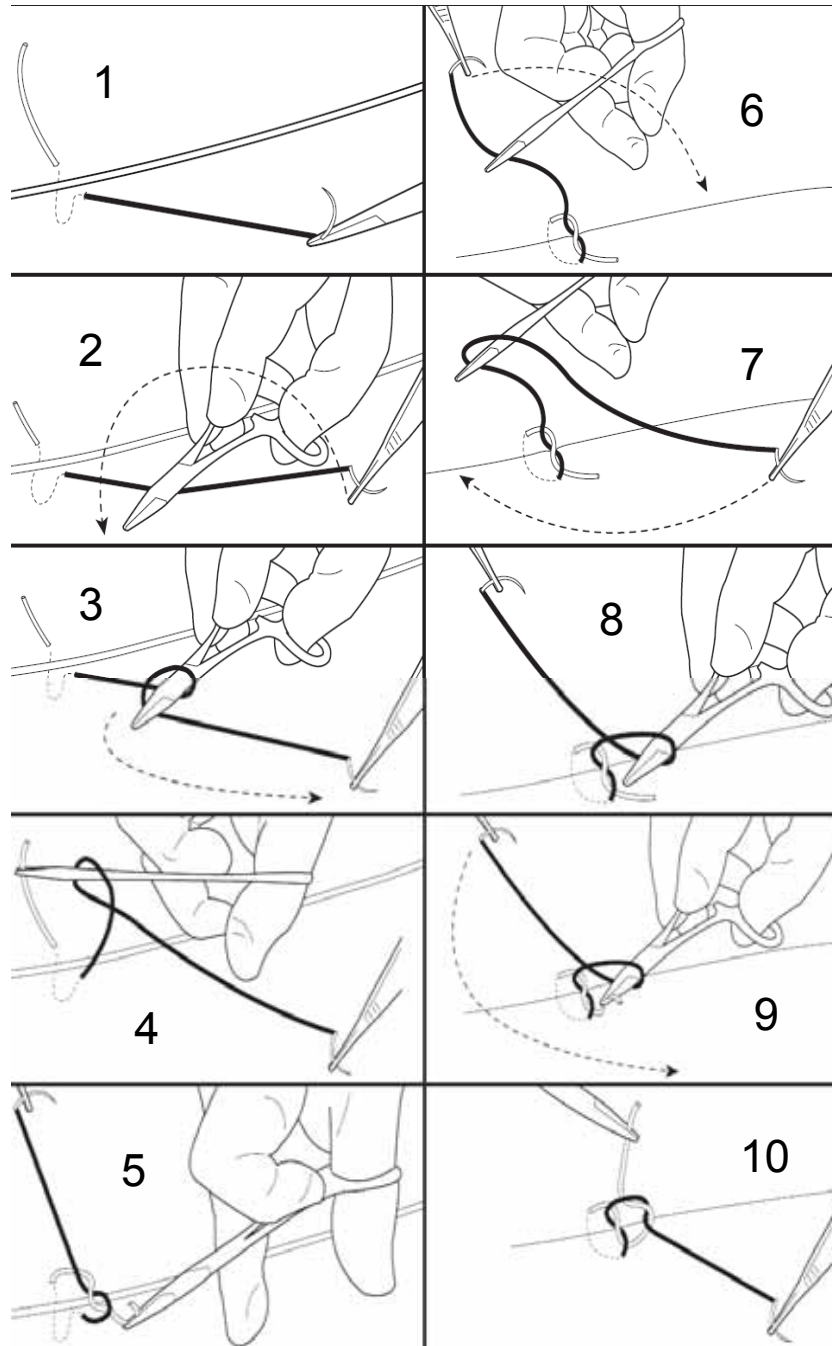


Fig. 5.9 Tying a knot, using instruments

SKIN PREPARATION AND DRAPING

Skin preparation with povidone iodine

Prepare the skin with povidone iodine antiseptic solution, starting with the glans and the shaft of the penis, and moving out to the periphery. Holding the penis with a swab, retract the foreskin in order to clean the glans. The prepared area should include the penis, the scrotum, the adjacent areas of the thighs and the lower part of the abdomen (suprapubic area), so that there is no risk of the surgeon touching unprepared skin during the procedure. If the patient has a history of allergy to iodine, use an alternative solution, such as chlorhexidine gluconate. The solution should remain wet on the skin for at least two minutes.



Fig. 5.10 Preoperative skin preparation with povidone iodine

Draping

Draping provides a sterile operative field and helps prevent contamination of the wound. The edges of the drapes that hang below the operating table are considered to be non-sterile.

Scrub and put on gown (if worn) and gloves before covering the patient with sterile drapes. Leave uncovered only the operative area and the areas where the anaesthetic will be administered. A single drape with a hole in it for the penis is better than four drapes secured with towel clips (Fig. 5.11).



Fig. 5.11 Draping for male circumcision. The minimum sterile operative field is shown by the dotted lines.

ANAESTHESIA

Circumcision can be done under general or local anaesthesia. Local anaesthesia is preferred, because it is less risky and less expensive. There are two possible techniques for local penile anaesthesia: the penile nerve block and the ring block. The ring block technique is used for circumcision of adults and adolescents and described below. The penile nerve block is used for circumcision of infants and described in Chapter 6.

Penile nerve supply

The nerve supply of the penis is the twin dorsal penile nerves. These nerves are located on the top and sides of the penis, at the 11 o'clock and 1 o'clock position near the base of the penis. They fan out towards the glans.

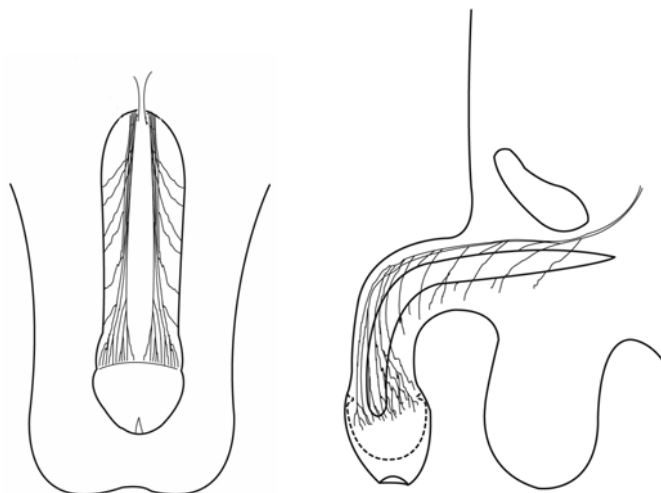


Fig. 5.12 Nerve supply to the penis. The twin dorsal penile nerves emerge from under the pubic bone at the 11 o'clock and 1 o'clock positions and fan out towards the glans.

Maximum dose of local anaesthetic

The local anaesthetic most often used is 1% plain lidocaine. The maximum dose that can safely be given is 3 mg per kg of body weight. The table below gives example volumes so that this maximum dose is not exceeded.

Examples of maximum safe volume of plain lidocaine (3 mg per kg body weight).			
Patient	0.5% lidocaine (5 mg per ml)	1% lidocaine (10 mg per ml)	2% lidocaine (20 mg per ml)
3 kg infant (e.g. 8 days old)	1.8 ml	0.9 ml	Not applicable
15 kg boy (e.g. age 4 years)	9 ml	4.5 ml	2.25 ml
40 kg boy	24 ml	12 ml	6 ml
70 kg man	Not applicable	21 ml	10.5 ml

Lidocaine with epinephrine must **not** be used because there is a risk of constriction of the blood vessels to the whole penis, which can cause gangrene and loss of the penis.

The advantage of lidocaine is that it works rapidly. An alternative is a mixture of 5 ml of lidocaine, 1%, and 5 ml of plain bupivacaine, 0.25%. This is more expensive but has the advantage of providing longer-lasting anaesthesia (up to 4–5 hours after the operation).

Safe injection of local anaesthetic

It is the surgeon's responsibility to check the vial of anaesthetic, to ensure that the correct agent at the correct concentration has been selected, and to check the expiry date. It is important to verify that the anaesthetic is clear and that there are no visible particles, which may suggest that the vial is contaminated.

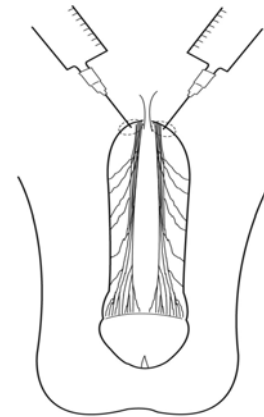
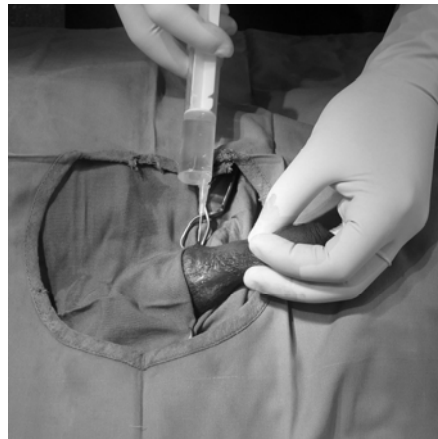
Once the needle is in place, but before injecting any anaesthetic, the surgeon should gently aspirate to make sure that no blood enters the syringe. This is to ensure that anaesthetic is not injected into a blood vessel. This safety precaution should be repeated each time the needle is moved, before any additional anaesthetic is injected.

Additional analgesia

Analgesics, such as paracetamol, may be given after the operation. However, best practice is to give one paracetamol tablet (adult dose 500 mg) 1–2 hours before surgery, and one tablet for the patient to take 6 hours later. This produces better postoperative analgesia than postoperative tablets alone.

Ring block technique

Using a fine (23-gauge) needle, inject approximately 0.1 ml of anaesthetic subcutaneously at the 11 o'clock position. Then, without withdrawing the needle, advance it into the subdermal space, making sure that the needle is freely mobile. At this point, inject 2–3 ml of anaesthetic to block the dorsal penile nerves (Fig. 5.13). Then advance the needle subcutaneously around the side of the penis and inject an additional 1 ml of anaesthetic. Withdraw the needle and repeat the procedure, starting at the 1 o'clock position so as to complete a ring of anaesthetic. In some cases it may be necessary to make an additional injection on the underside of the penis to fully complete the ring of anaesthetic. After injection, massage the base of the penis for 10–20 seconds to increase the diffusion of the lidocaine into the surrounding tissues. Once the anaesthetic has been injected, the surgeon should wait for 3–5 minutes (timed by the clock). A common mistake is to start the procedure before the anaesthetic has had time to work. Sensation should be tested before starting the surgery. This can be done by gently pinching the foreskin with an artery forceps. If there is any residual sensation, the surgeon should wait for a further 2–3 minutes and test again. If there is still sensation, more local anaesthetic should be given. Sometimes, it helps to give additional local anaesthetic separately to the frenulum area, but usually the ring block at the base of the penis is sufficient.



(Photo courtesy of R Bailey, Kisumu Circumcision Project)

Fig. 5.13 Injection of local anaesthetic for the ring block technique

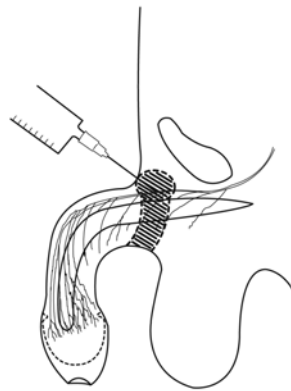


Fig. 5.14 The ring of local anaesthetic after injections have been made during the ring block technique

RETRACTION OF THE FORESKIN AND DEALING WITH ADHESIONS

This step is common to all the methods of circumcision described below. After effective local anaesthesia has been achieved, the foreskin should be fully retracted. If the opening of the foreskin is tight, it may be necessary to dilate it with a pair of artery forceps (Fig. 5.15), but this is not usually necessary in adults and adolescents. Care must be taken to stretch just the aperture of the foreskin and not to push the forceps in too far, because there is a risk of dilating the urethra and causing injury to the urethra and glans.

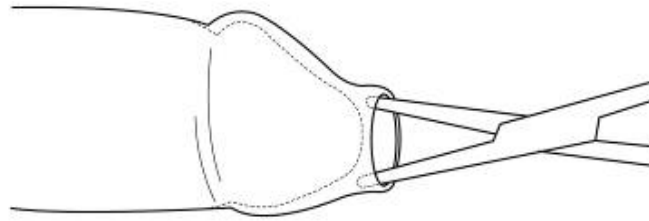


Fig. 5.15 Dilation of the aperture of the foreskin. Do not push the forceps in too far, in order to avoid injury to the urethra

Once the foreskin has been retracted, separate any adhesions by gentle traction or using a blunt probe, such as a pair of closed artery forceps (Fig. 5.16). If adhesions are particularly dense, the surgeon may decide to abandon the procedure and refer the patient to a more experienced surgeon.

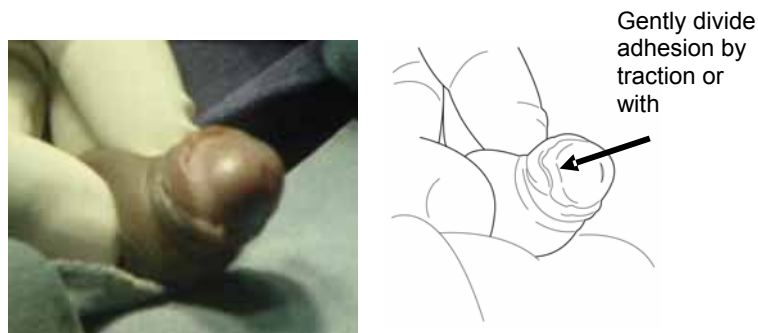


Fig. 5.16 Retracting the foreskin to fully expose the glans and separate any adhesions

MARKING THE LINE OF THE CIRCUMCISION

This step is common to all the methods of circumcision described below. With the foreskin returned to a natural "resting" position, indicate the intended line of the incision with a marker pen. The line should correspond with the corona, just under the head of the penis (Fig. 5.17). Some uncircumcised men have a very lax foreskin, which is partially retracted in the resting position. In such cases it is better to apply artery forceps at the 3 and 9 o'clock positions, to apply a little tension to the foreskin before marking the circumcision line (illustrated in Fig 5.28 below). However, it is important not to pull the foreskin too hard before marking the line, as this will result in too much skin being removed.

If a marker pen is not available, dabs of gentian violet may be applied with a blunt probe, the tip of an artery forceps or other sterile instrument. Pinch marks made with a toothed forceps are also an alternative.

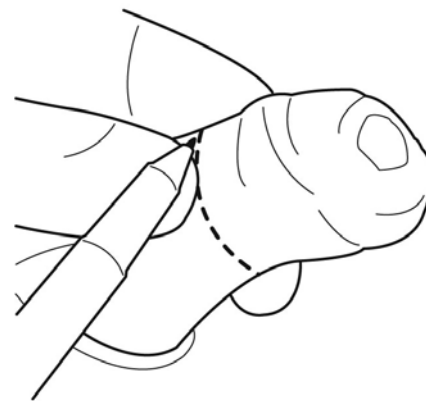
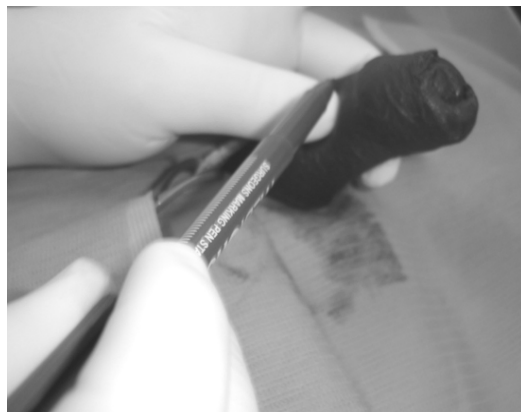


Fig. 5.17 Marking the line of the circumcision.

SURGICAL METHODS

Three widely used methods of circumcision are described below. All three methods produce a good long-term result, but require different levels of skill. The sleeve method produces an excellent result, but requires the highest level of surgical skill. The forceps-guided method produces a less tidy result initially, but has the advantage that it is a simple technique suitable for a clinic setting. In clinical trials it has been shown to produce consistently good results with low complication rates. It cannot be used for men with phimosis, since the foreskin cannot be fully retracted. The dorsal slit method is probably the most widely used method worldwide.

At present, devices similar to those used for paediatric circumcision (see Chapter 6) are either not available or not suitable for adult circumcision. Evidence is needed from clinical trials before such devices can be recommended.

Forceps-guided method of circumcision

This is a simple step-by-step procedure, which can be learnt by surgeons and surgical assistants who are relatively new to surgery. It can be used in clinics with limited resources, and it can be done without an assistant. A disadvantage of the procedure is that it leaves between 0.5 and 1.0 cm of mucosal skin proximal to the corona. The forceps-guided technique was used in the South African and Kenyan trials of circumcision and HIV infection. The version described here was standardized by the Kenyan study team.

Step 1. Prepare skin, drape and administer anaesthesia, as described above.

Step 2. Retract the foreskin and separate any adhesions, as described above.

Step 3. Mark the intended line of the incision, as described above.

Step 4. Grasp the foreskin at the 3 o'clock and 9 o'clock positions with two artery forceps. Place these forceps on the natural apex of the foreskin, in such a way as to put equal tension on the inside and outside surfaces of the foreskin. If this is not done correctly, there is a risk of leaving too much mucosal skin or of removing too much shaft skin.

Step 5. Put sufficient tension on the foreskin to pull the previously made mark to just beyond the glans. Taking care not to catch the glans, apply a long straight forceps across the foreskin, just proximal to the mark, with the long axis of the forceps going from the 6 o'clock to the 12 o'clock position (taking the frenulum as the 6 o'clock position).

Once the forceps is in position, feel the glans to check that it has not been accidentally caught in the forceps.

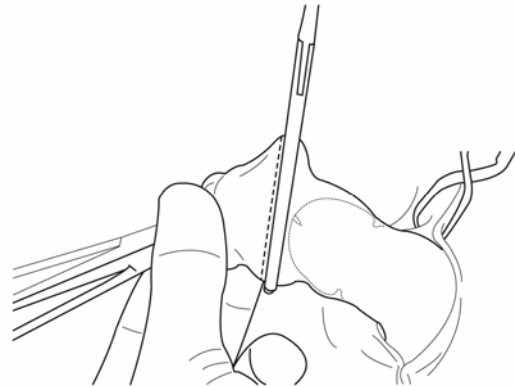


Fig. 5.18 Forceps-guided method. The forceps is applied taking care not to catch the glans.

Step 6. Using a scalpel, cut away the foreskin flush with the outer aspect of the forceps. The forceps protects the glans from injury, but nevertheless, particular care is needed at this stage.

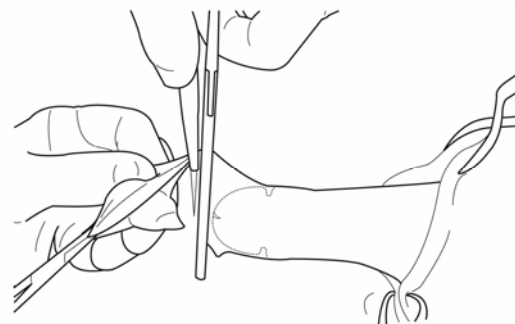


Fig. 5.19 Forceps-guided method. Cutting off the foreskin.

Step 7. Pull back the skin to expose the raw area. Clip any bleeding vessels with artery forceps. Take care to catch the blood vessels as accurately as possible and with minimal adjacent tissue. Tie each vessel (see Fig. 5.3 and 5.4) or under-run with a suture and tie off. Take care not to place haemostatic stitches too deeply. When dealing with bleeding in the frenular area or on the underside of the penis, care must be taken not to injure the urethra.

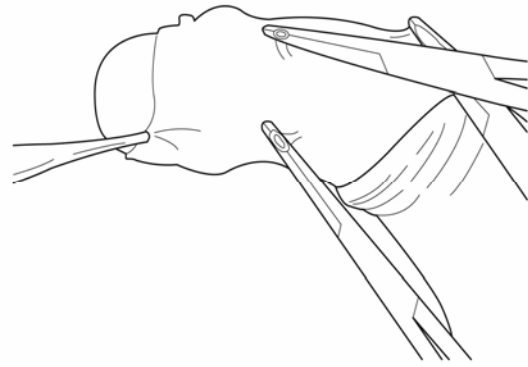
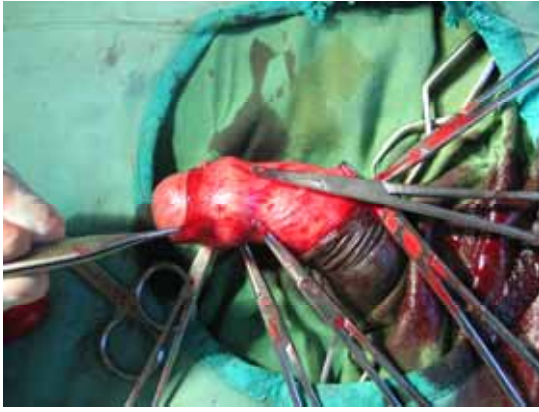


Fig. 5.20 Applying artery forceps to blood vessels to stop bleeding

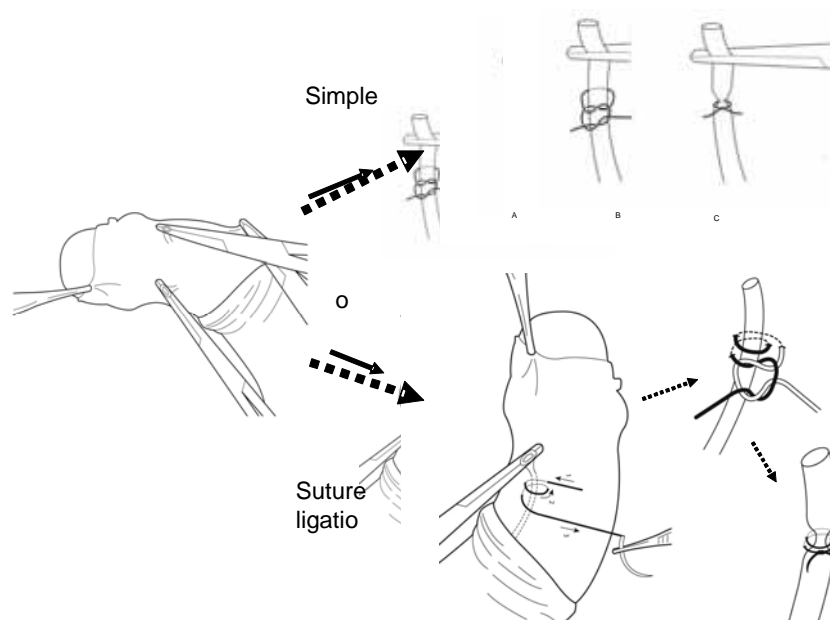


Fig. 5.21 Haemostasis with artery forceps and tying off (suture ligation) of blood vessels

Step 8. Place a horizontal mattress suture at the frenulum. The technique is shown in Fig. 5.5.

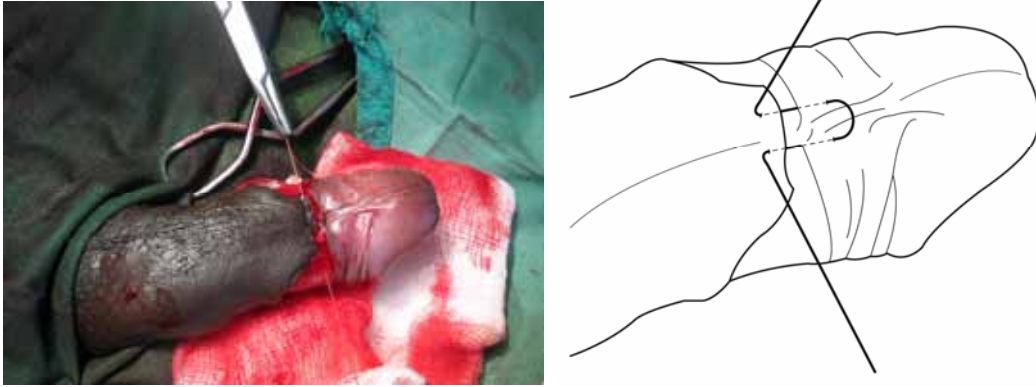


Fig 5.22 Horizontal mattress suture at the frenulum (6 o'clock position)

When placing the frenulum suture, take care to align the midline skin raphe with the line of the frenulum (Fig. 5.23). A common error is to misalign the frenulum and the midline skin raphe, which results in misalignment of the whole circumcision closure.

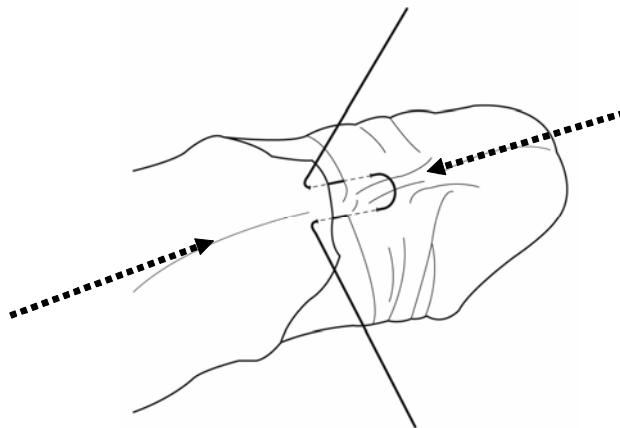


Fig. 5.23 Alignment of the midline skin raphe on the shaft of the penis and the line of the frenulum.

Step 9. Place a vertical mattress suture opposite the frenulum, in the 12 o'clock position (Fig. 5.24). The suture should be placed so that there is an equal amount of skin on each side of the penis between the 12 and 6 o'clock positions. The technique of vertical mattress suture is shown in Fig. 5.6. Place two further vertical mattress stitches in the 3 o'clock and 9 o'clock positions (see Fig. 5.8).

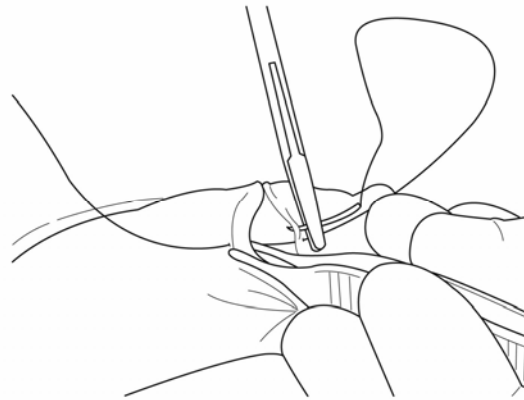
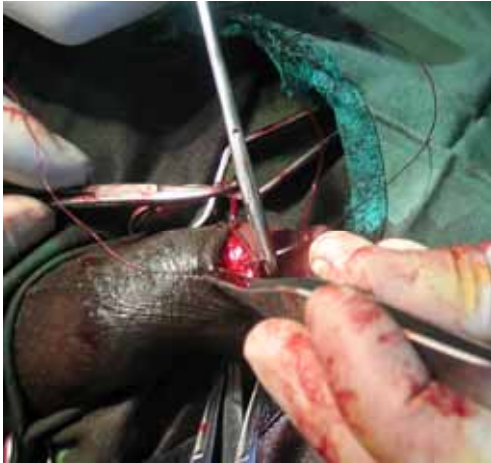


Fig. 5.24 Placing a vertical mattress suture in the 12 o'clock position

It is helpful to leave a long end on the horizontal mattress suture at the frenulum (at the 6 o'clock position) and on the vertical mattress suture opposite (at the 12 o'clock position). The long ends of the sutures can be held by an assistant with artery forceps to stabilize the penis during suturing (Fig. 5.25).



Fig. 5.25 Penis is stabilized by an assistant holding two artery forceps (arrows) attached to the long ends of the 6 and 12 o'clock sutures

Step 10. After placement of the sutures at the 6, 12, 3 and 9 o'clock positions, place two or more simple sutures in the gaps between them. The technique of simple interrupted sutures is shown in Fig. 5.5.

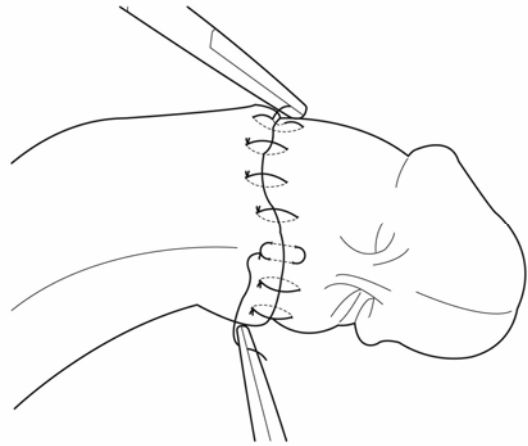


Fig. 5.26 Several simple sutures are placed between the 12, 3, 6 and 9 o'clock mattress sutures

Depending on the skin pigmentation, there may be a strong contrast between the colour of the penile shaft skin and the remaining mucosa. With time the exposed mucosal skin will become darker and the contrast less marked.

Step 11. Once the procedure is finished, check for bleeding. If there is none, apply a dressing (see "Dressing" at the end of this chapter).

Dorsal slit method of circumcision

The dorsal slit method requires more surgical skill than the forceps-guided method. It is helpful to have an assistant present during the procedure, although it can be done without one. There is a risk that more skin is cut away from one side than the other, giving an asymmetric result. Nevertheless, the technique is widely used by general and urological surgeons throughout the world. It is the technique illustrated in the WHO manual, *Surgical care at the district hospital*.¹

Step 1. Prepare skin, drape and administer anaesthesia, as described above.

Step 2. Retract the foreskin and remove any adhesions, as described above.

Step 3. Mark the intended line of the incision, as described above.

Step 4 (optional). Some surgeons prefer to mark the line of incision by making a very shallow incision using a scalpel. This is useful on a deeply pigmented man on whom it is difficult to see the line of the marking pen or dabs of gentian violet. Before making the shallow incision, check carefully that the incision line is level with the corona and that even amounts of skin are marked for removal from each side of the penis. The incision should be made just through the skin; it is very important not to cut too deeply and divide blood vessels (Fig. 5.27).

One disadvantage of marking the line of incision with a scalpel is that there may be an increased risk of accidental injury to the surgical staff. In addition, a relatively inexperienced surgeon may cut too deeply. However, these risks must be balanced against the risk of a poor result of the circumcision operation if the marking is difficult to see and too much or uneven amounts of skin are removed.

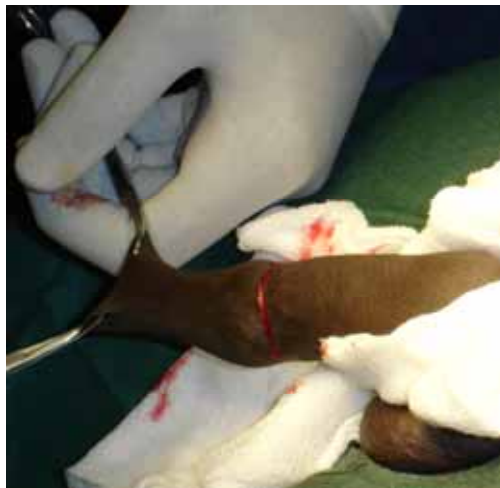


Fig. 5.27 Superficial incision used to mark the line of incision on a man with deeply pigmented skin.

Step 5. Grasp the foreskin with artery forceps at the 3 o'clock and 9 o'clock positions. Take care to apply the artery forceps so that there is equal tension on the inner and outer aspects of the foreskin (Fig 5.28).

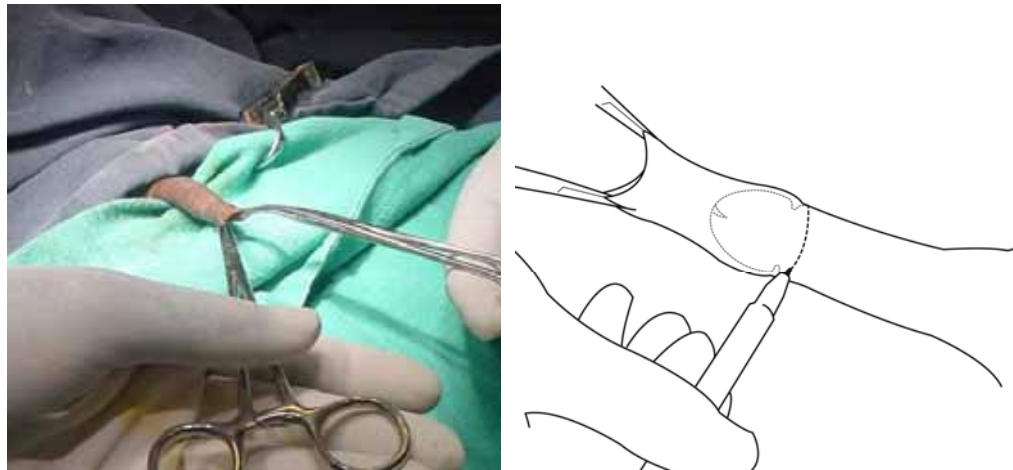


Fig. 5.28 Tensioning the foreskin.

Step 6. Place two artery forceps on the foreskin in the 11 o'clock and 1 o'clock positions (Fig. 5.29). Check that the inside blades of the two artery forceps are lying between the glans and foreskin, and have not been inadvertently passed up the urethral meatus.

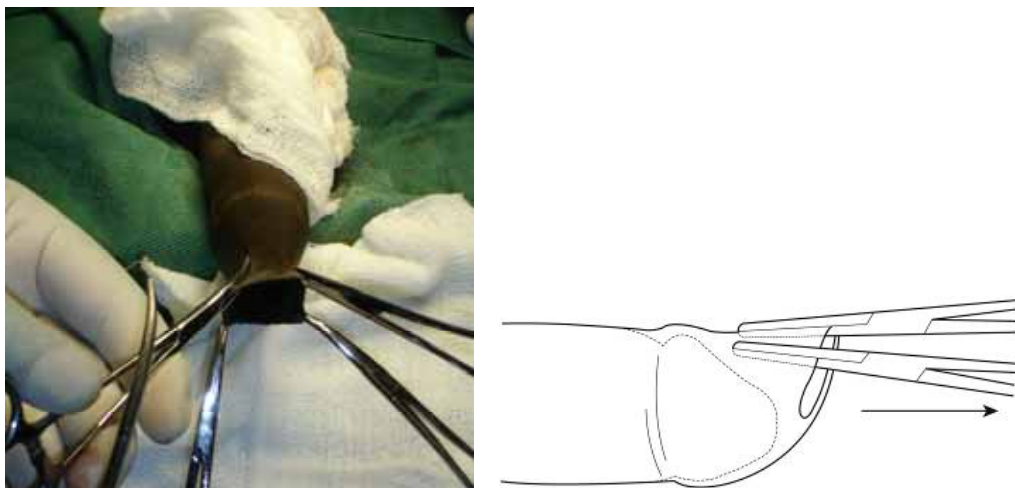


Fig. 5.29 Placing artery forceps at the 11 o'clock and 1 o'clock positions (In the drawing the forceps in 3 and 9 o'clock positions are not shown).

Step 7. Between the two artery forceps, in the 12 o'clock position, use dissection scissors to make a cut (the dorsal slit) up to but not beyond the previously marked incision line (Fig. 5.30).

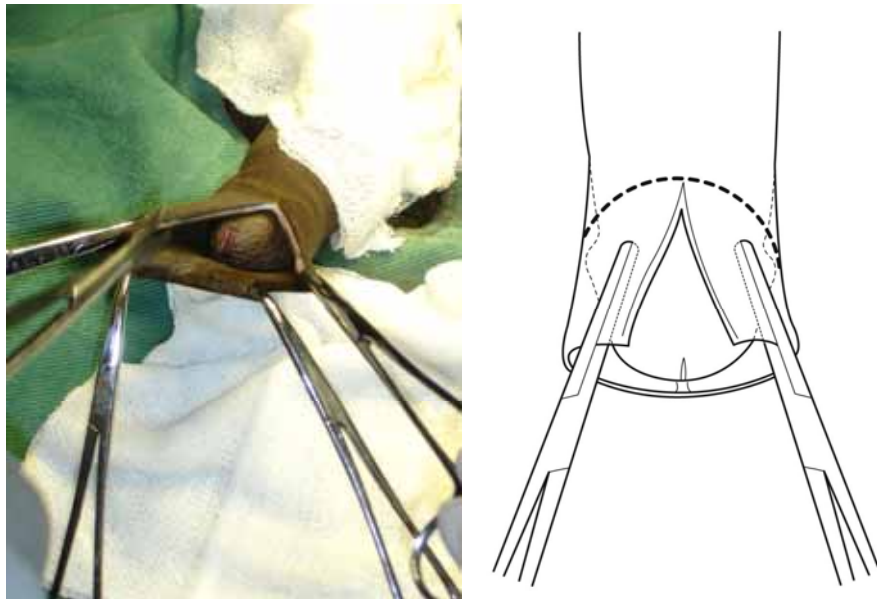


Fig. 5.30 Cutting the dorsal slit

Step 8. Using dissection scissors, cut the foreskin free, following the previously marked circumcision line (Fig. 5.31).

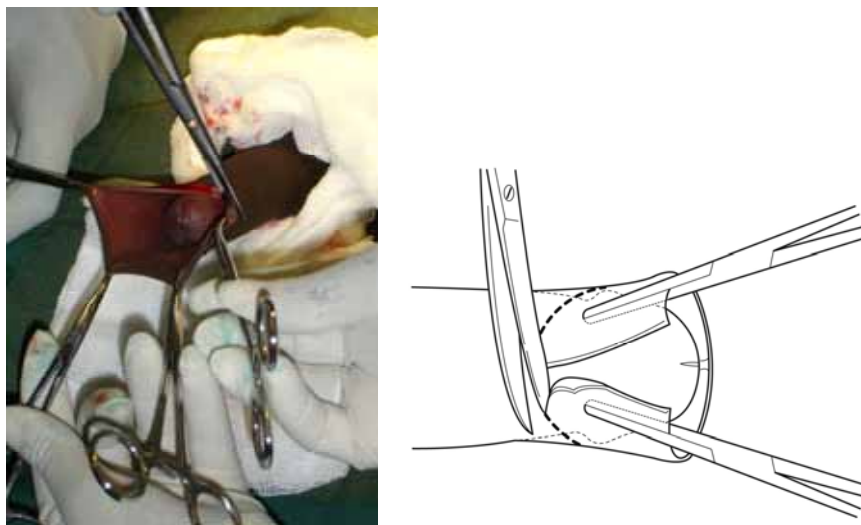


Fig. 5.31 Cutting away the foreskin with dissection scissors

Step 9. Any skin tags on the inner edge of the foreskin can be trimmed to leave approximately 5 mm of skin proximal to the corona (Fig. 5.32). Care must be taken to trim only the skin and not to cut deeper tissue.

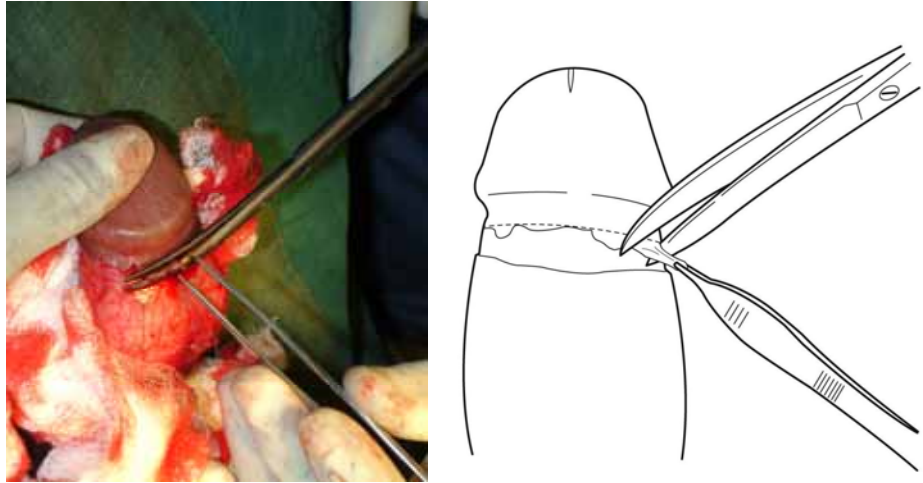


Fig. 5.32 Trimming the inner edge of the foreskin

Step 10. Stop any bleeding and suture, as described in steps 7–10 of the forceps-guided method.

Step 11. Check for bleeding. If there is none, apply a dressing (see “Dressing” at the end of this chapter).

¹ World Health Organization. *Surgical care at the district hospital*. Geneva, 2003.

Sleeve resection method of circumcision

The sleeve resection method requires good surgical skill and is better suited to a hospital rather than a clinic setting. The technique requires an assistant. If bipolar diathermy is available the procedure can be virtually bloodless. Although the cosmetic results are better than with the other two techniques, there is more room for surgical error, either by cutting too deep when making the two circular incisions or cutting too deep when dissecting the skin flap free.

Step 1. Prepare skin, drape and administer anaesthesia, as described above.

Step 2. Retract the foreskin and remove any adhesions, as described above.

Step 3. Mark the intended outer line of the incision, as described above (Fig. 5.33), with a V shape, pointed towards the frenulum, on the underside (ventral aspect) of the penis (Fig. 5.34). The apex of the V should correspond with the midline raphe.

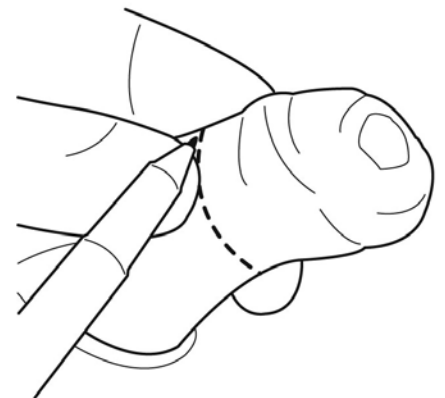


Fig. 5.33 Marking the line of the outside cut, just below the corona

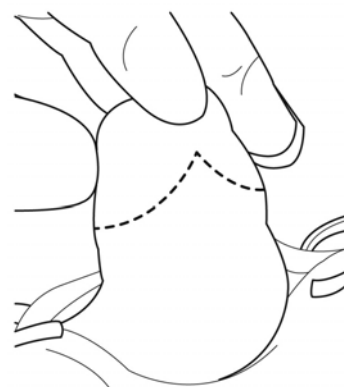
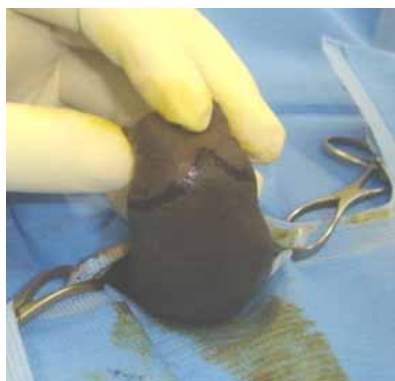


Fig. 5.34 A V is marked on the ventral side (underside) of the penis, with its point towards the frenulum.

Step 4. Retract the foreskin and mark the inner (mucosal) incision line, 1–2 mm proximal to the corona. At the frenulum, the incision line crosses horizontally (Fig. 5.35).

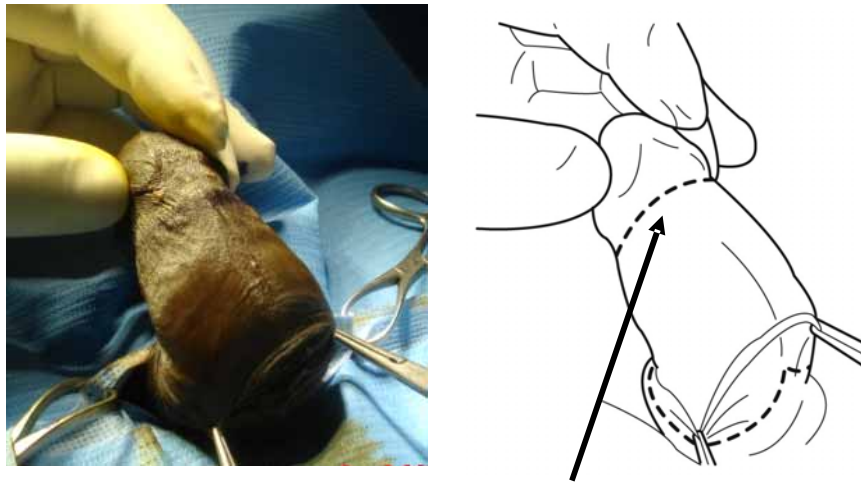


Fig. 5.35 Marking the inner incision line

Step 5. Using a scalpel, make incisions along the marked lines, taking care to cut through the skin to the subcutaneous tissue but not deeper (Fig. 5.36, 5.37 and 5.38). As the incision is made, the assistant should retract the skin with a moist gauze swab.

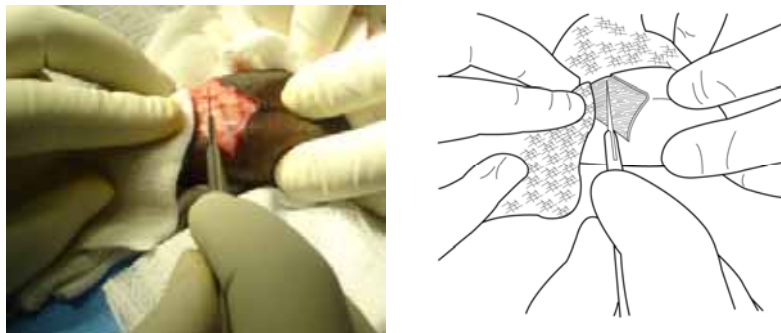


Fig. 5.36. Incising along the marked line

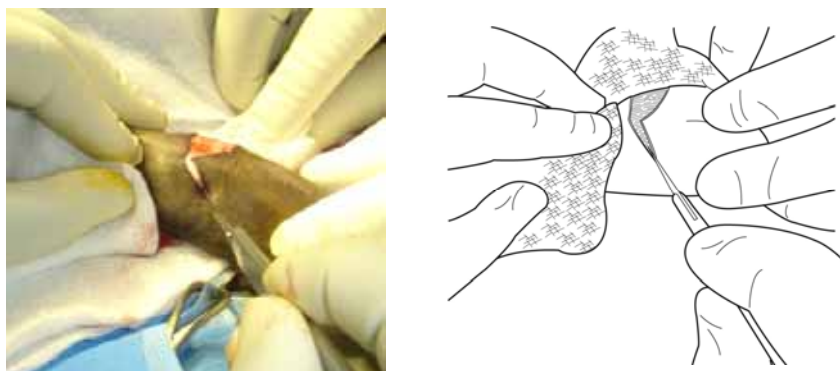


Fig. 5.37 Incising the V shape on the underside of the penis

Any significant bleeding vessels should be clipped with an artery forceps and tied or secured with an under-running suture. Provided the cut has not been made too deeply, most bleeding will be from the skin edge and can be stopped by simple pressure over a swab.

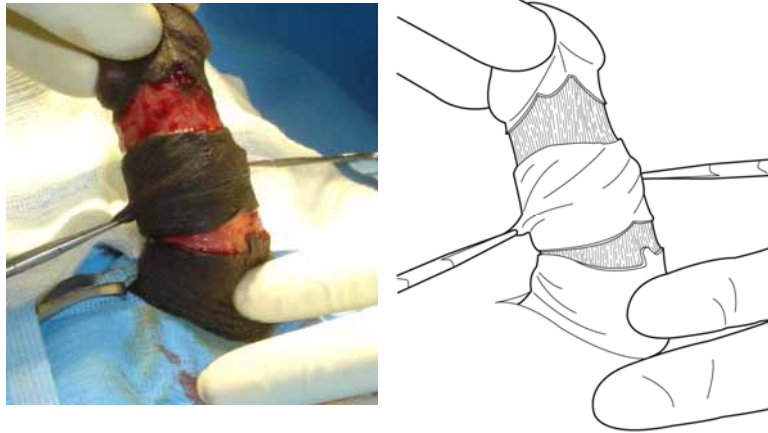


Fig. 5.38 Completed incisions leaving a sleeve of foreskin

Step 6. Cut the skin between the proximal and distal incisions with scissors, as shown in Fig. 5.39.

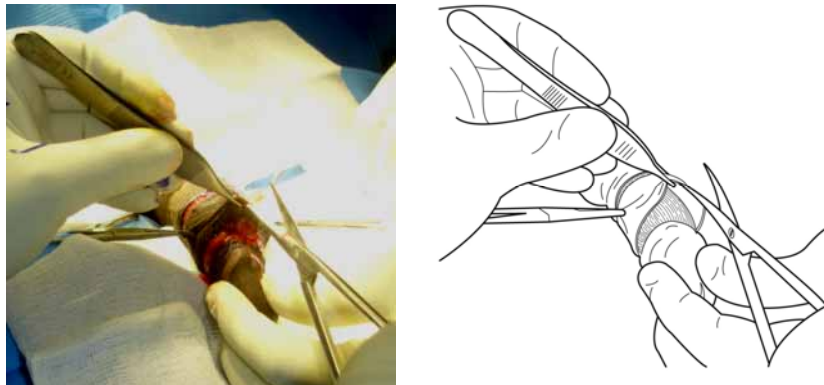


Fig. 5.39 Cutting the skin between the two incisions

Step 7. Hold the sleeve of foreskin under tension with two artery forceps, and dissect the skin from the shaft of the penis, using dissection scissors (Fig. 5.40).

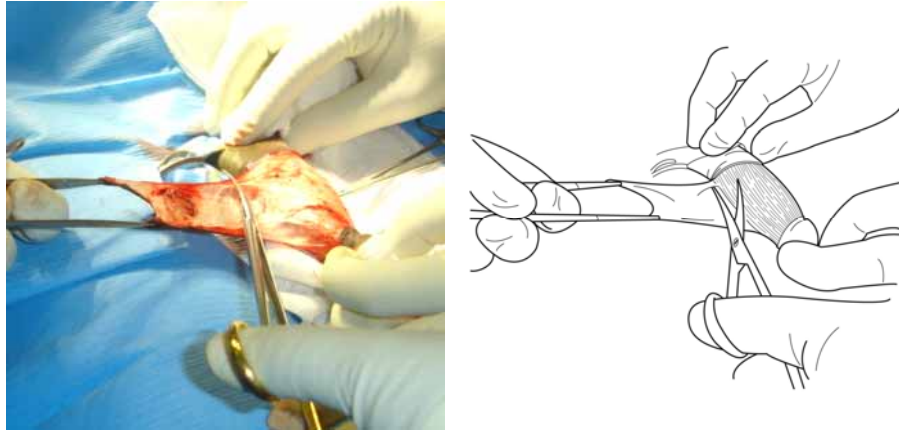


Fig. 5.40 Dissecting the sleeve of skin away from the shaft of the penis.

Tie off any bleeding vessels with under-running sutures.

Step 8. Stop any bleeding and suture, as described in steps 7 – 10 of the forceps-guided method.

Step 9. Once the wound has been sutured, check for bleeding. If there is none, apply a dressing as described below.

DRESSING

Irrespective of the method of circumcision, a standard penile dressing technique is used.

Check that there is no bleeding. Minor bleeding from a skin edge will often stop after five minutes of pressure with a gauze. Once all bleeding has stopped, place a piece of petroleum-jelly-impregnated gauze (*tulle gras*) around the wound. Place a sterile dry gauze over this, and secure in position with adhesive tape (Fig 5.41). Take care not to apply the dressing too tightly, as it could restrict the blood supply and cause necrosis of the glans.



Fig. 5.41 Standard dressing.

The dressing should be left in position no longer than 48 hours. Either the patient can return to the clinic where the circumcision was performed, or go to another clinic for postoperative follow-up and removal of the dressing. If the dressing has dried out, it should be gently dabbed with antiseptic solution (aqueous cetrimide) until it softens. It can then be removed gently (Fig 5.42). It is important not to disrupt the wound by pulling at a dressing that has dried to the wound.

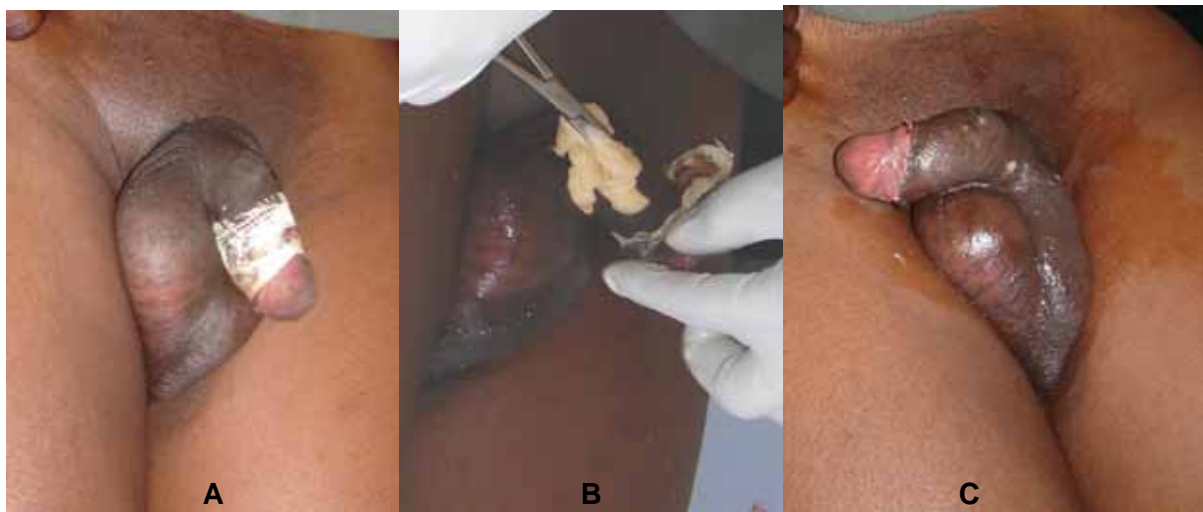


Fig. 5.42. A: after removal of the gauze swab.,B: using cetrimide to soak off a paraffin gauze that has dried to the wound. C: appearance of a wound healing normally 48 hours after the operation

Appendix 5.1

VARIATIONS IN TECHNIQUE FOR MINOR ABNORMALITIES OF THE FORESKIN

The techniques described in this manual assume that the foreskin and frenulum are normal. However, clinic-based circumcision can be undertaken in the presence of minor abnormalities, if the circumcision team has sufficient experience. Any abnormalities should be detected in the preoperative examination of the penis, which should include full retraction of the foreskin. Two abnormalities – both of which are common indications for circumcision – require a slight variation in technique.

Phimosis

Phimosis is scarring of the aperture of the foreskin to the extent that the foreskin cannot be retracted. Often the tip of the foreskin will appear white because of scar tissue. If the scar tissue is extensive, then the man is not suitable for clinic-based circumcision and should be referred to a higher level of care.

The first step in all circumcision operations is to mark the foreskin with the line of the incision. If the sleeve resection method is used, the phimosis will prevent retraction of the foreskin and the line of incision near the corona cannot be marked. In this case, a small dorsal slit should be made, which is just long enough to allow the foreskin to be retracted. Once retracted, any adhesions can be divided and any debris under the foreskin cleaned with a swab soaked in povidone iodine or cetrimide. Once all adhesions have been divided, the second line of incision on the foreskin near the corona can be marked and the circumcision operation can proceed as usual.

In the forceps-guided or dorsal slit methods, the line of incision is marked on the outer aspect of the foreskin in the normal manner. However, with minor degrees of phimosis, it may be necessary to make a small dorsal slit to allow full retraction and cleaning under the foreskin before proceeding with the operation. The forceps-guided method should not be used if there is evidence of extensive scarring.

Tight or scarred frenulum

All males have a band of tissue (the frenulum) on the ventral side of the penis, just below the glans. Usually the frenulum does not interfere with retraction of the foreskin. During early sexual experiences, the frenulum may be stretched as the foreskin is retracted, and minor tears are a frequent problem. Such tears can heal, leaving inelastic scar tissue, which tightens and makes further tearing and scarring more likely. The problem can be seen when the foreskin is retracted during physical examination. Instead of the normal pink frenulum, a tight band of white tissue is seen (Fig. 5.43A). This restrictive frenular band can be easily corrected during circumcision.

Spread open the foreskin and retract it ventrally to put the frenular band under tension. Using dissection scissors, snip the band at its centre, taking care not to injure the urethra, which is just under the frenulum. Any bleeding from the frenular artery should be controlled by careful tying or under-running. After the frenulum has been cut, there will be an inverted V-shaped defect (Fig. 5.43B).

The circumcision can then be performed as usual. In this case, however, do not suture the penile skin up to the edge of the foreskin defect, since this will cause increased tension on the ventral side. This tension may cause curvature of the penis or possibly make erection or

coitus uncomfortable. Instead, close the V-shaped defect by placing the frenular suture 1–2 cm (depending on age and penis size) back from the apex of the V, taking both sides of the defect (Fig. 5.43C). The V incision is thus converted into an inverted T. Suture the rest of the skin as in a normal circumcision (Fig. 5.43D).

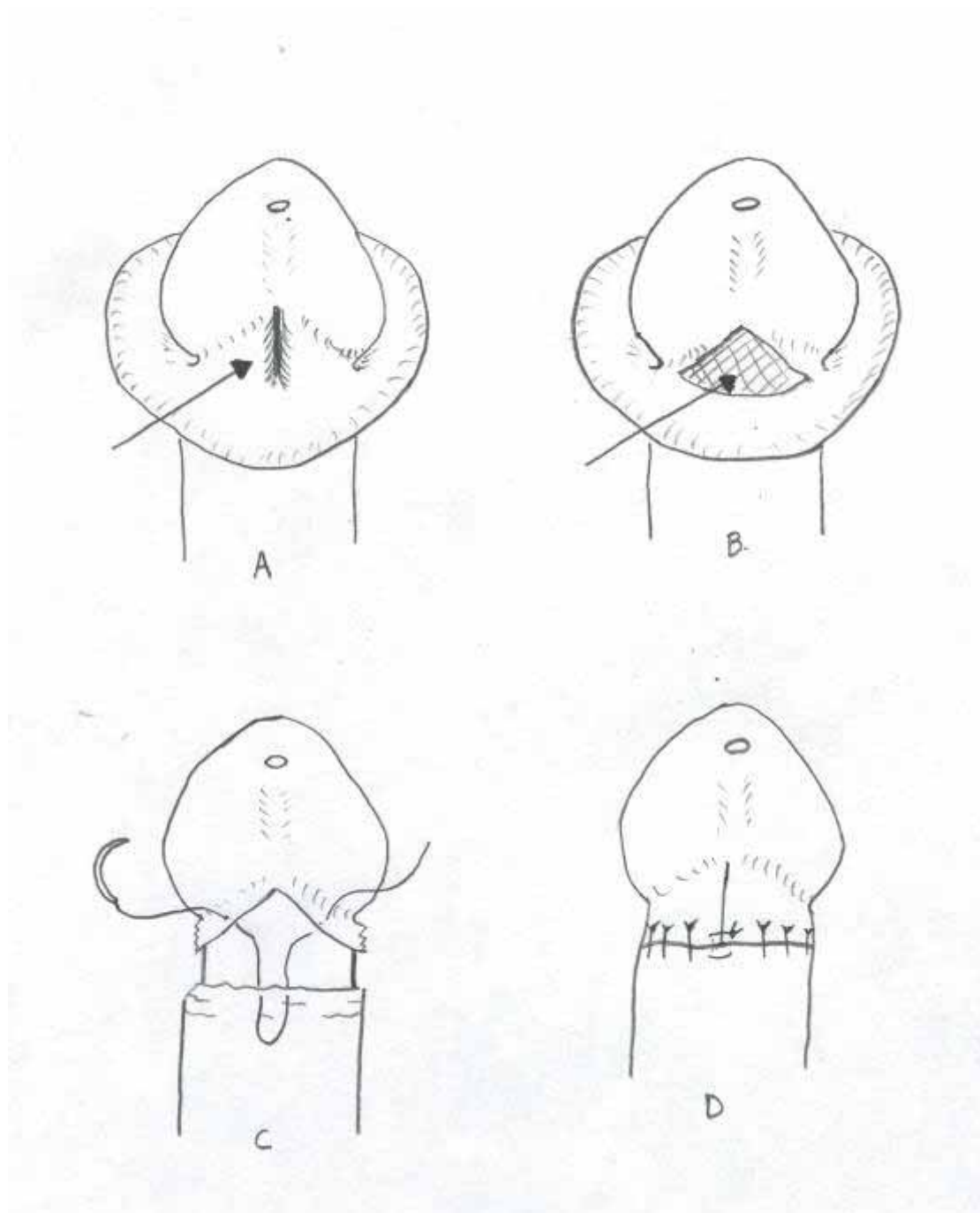


Fig. 5.43 Variation in technique if the frenulum is tight or scarred

Chapter 6

Circumcision of infants and children

SUMMARY

This chapter gives step-by-step instructions for performing a circumcision on an infant or young child. Four surgical techniques are described:

- the dorsal slit method;
- the Plastibell method;
- the Mogen clamp method;
- the Gomco clamp method.

Four widely-used surgical techniques for paediatric circumcision are described in this chapter. The recommended techniques are shown in detail so that they can be referred to in the context of a training course. After the initial training, they can be used to reinforce what has been learnt. Surgeons should become expert in the technique most suited to the circumstances of their practice. It is not recommended that a nursing, clinical or medical officer learn all the techniques. It is best to become a master of one. This will produce the best results with the least complications.

Circumcision of infants and pre-pubertal boys is simpler than circumcision of older boys and adults, because the penis is relatively underdeveloped and the foreskin less vascular. Healing is quick and complication rates are low. A major disadvantage is that the child cannot give consent for the procedure. In addition, the primary health benefit – reduced risk of HIV infection – is not realized until many years later when he becomes sexually active. Circumcision can be delayed to an older age, when the boy can understand the risks and benefits of circumcision and consent to the procedure himself. Programmes that promote circumcision of young children are likely to have lower morbidity rates and lower cost than programmes targeting adolescents and adults. However, this must be balanced by concerns about consent.

SCREENING MALE BABIES AND YOUNG BOYS FOR CIRCUMCISION

The screening procedures for infants and young children are similar to those for adolescents and adults, and are aimed at ensuring that the client is suitable for surgery at the clinic. If there is any doubt, surgery should be deferred or the client

referred to a specialist centre. The circumcision team should enquire about the health of the baby or young boy.

Neonatal circumcision (within the first 28 days of life) should be undertaken only if the birth was a full-term delivery and the baby has had no significant medical problems. Known haematological disorders and jaundice are contraindications to circumcision. Thus any baby with yellow sclera or purpuric skin lesions should not be accepted for clinic-based circumcision. Any congenital abnormality of the genitalia is a contraindication to circumcision. Only babies with a normal physical examination and an intact, completely normal appearing penis and foreskin should be considered for male circumcision. This is because the foreskin may be needed for plastic surgical repair of the abnormality.

CONSENT

In all cases, the procedure can be undertaken only with the full consent of the parent or legal guardian. The parent or legal guardian should be fully informed about how the procedure will be done, what type of anaesthetic will be used, what complications are possible, and what type of postoperative care should be provided. A summary of the information that needs to be provided is given in Appendix 6.1. The consent of the child should also be obtained, if he is able to give it (Chapter 3 addresses this issue in more detail). An example of a consent form is given in Appendix 6.2.

PREPARATION

Before the procedure, the baby should be clean and have a clean, freshly-laundered or new disposable nappy. Because mothers may need to travel some distance to the clinic, any clinic offering infant circumcision should have facilities for washing babies and changing nappies.

ANAESTHESIA

Anaesthesia is recommended for paediatric circumcision. Many studies have shown that babies react to pain, and that an effective method of providing local anaesthesia is with dorsal penile nerve block.^a The maximum safe dose of lidocaine in children is 3 mg/kg of body weight. For a 3-kg baby, this corresponds to 0.9 ml of 1% solution or 1.8 ml of 0.5% solution (see Table 5.1). Anaesthetic solutions containing epinephrine (adrenaline) should **never** be used.

^a Kirya C, Werthmann MW Jr. Neonatal circumcision and penile dorsal nerve block: a painless procedure. *J Pediatr.* 1978;96:998-1000.

Safe injection of local anaesthetic

It is the surgeon's responsibility to check the vial of anaesthetic, to ensure that the correct agent at the correct concentration has been selected, and to check the expiry date. It is important to verify that the anaesthetic is clear and that there are no visible particles, which may suggest that the vial is contaminated.

Using a fine needle (e.g. 27-gauge), injections are made at the 10 and 2 o'clock positions. Before injecting any local anaesthetic, the surgeon should gently aspirate to make sure that no blood enters the syringe. This is to ensure that anaesthetic is not injected into a blood vessel. This safety precaution should be repeated each time the needle is moved and before any additional local anaesthetic is injected.

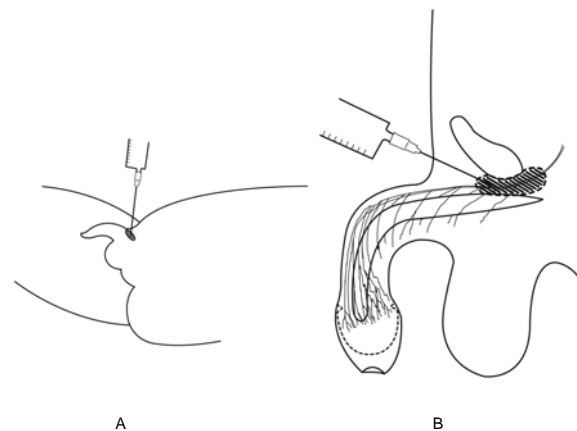


Fig. 6.1: Injection of local anaesthetic for a dorsal penile nerve block at the 2 and 10 o'clock positions.^b A: The injection at the base of the penis. B: Diagram of an infant penis, to show the anatomy of the dorsal nerve as it passes under the pubic arch, and the position of the anaesthetic in relation to the dorsal penile nerve and pubic symphysis. [NOTE TO ARTIST: AMEND B TO LOOK MORE BABY-LIKE, can use model above to locate landmarks in infant]

Local anaesthesia alone can be used for most infants (under one year of age) who can be held during the procedure so that

^b Butler-O'Hara M. LeMoine C. Analgesia for Neonatal Circumcision: A Randomized Controlled Trial of EMLA Cream Versus Dorsal Penile Nerve Block. *Pediatrics*. April 1998; Vol. 101 No. 4

they do not wriggle. It can also be used for boys who are old enough to cooperate during the procedure. For children between the ages of about 1 and 12 years, use of local anaesthetic alone is more problematic, since the boy may not remain still during the operation. Sedation may be required in addition to local anaesthesia, but there are risks, particularly of air-way obstruction and anoxia. If sedation is necessary to perform the procedure safely the patient should be referred to an appropriate facility.

EMLA cream

EMLA 5% cream (eutectic mixture of local anaesthetics, containing 2.5% lidocaine and 2.5% prilocaine) has been extensively used for Plastibell circumcision in children of all ages. It is safe and provides effective anaesthesia when correctly used. It must be applied with care in neonates, because of the potential risk of methaemoglobinaemia from prilocaine metabolites, which can oxidize haemoglobin and dangerously reduce the oxygen-carrying capacity of the blood. Care must be taken to ensure that the cream is not accidentally rubbed onto a large area of the baby's body, as a result of the hands and feet wriggling during the procedure. This can be done by covering the penis with a small piece of polythene held in place with a sticking plaster. It has been shown that, provided the cream is applied only to the penis, EMLA is safe for both term and preterm infants.¹ Possible minor adverse events include transient local skin reactions, such as blanching and redness.

EMLA cream should be applied to the whole penis 1–2 hours before the procedure. In older boys whose foreskin can be retracted, the cream should be applied to the glans so that the glans and the underside of the foreskin are covered. Depending on local circumstances, it is often possible for the parent to apply the cream at home before coming to the clinic. If this is done, the clinic staff should ensure that the cream has been applied properly.

The maximum recommended doses and durations of exposure to EMLA cream are summarized in Table 6.1.

Table 6.1. Recommended maximum exposures to EMLA cream for infants and children^c

Age group	Maximum dose	Maximum skin area*	Period of application **
0–3 months	1 g	10 cm ²	1 h
3–11 months	2 g	20 cm ²	4 h
1–5 years	10 g	100 cm ²	4 h
6–11 years	20 g	200 cm ²	4 h

Notes:

1. EMLA cream should be applied to the penis only. The maximum areas shown are those above which toxicity is likely to occur if larger areas are coated inadvertently.
2. EMLA cream will be removed when the penis is cleaned and prepared for surgery.

GLUCOSE BY MOUTH

In addition to the other agents described, oral sucrose administration (sugar water) in the amount of 1-2 mls has been reported to ameliorate the pain of circumcision.^d

VITAMIN K

In many developed countries vitamin K is routinely given to babies to prevent vitamin K deficiency bleeding in the newborn. Vitamin K at a dose of 1 mg intramuscularly given shortly after birth has been shown in studies in the USA to reduce bleeding after neonatal circumcision. There is a need for evaluation of oral or injectable Vitamin K in the context of neonatal circumcision programmes in developing countries.

SKIN PREPARATION AND DRAPING

The penis and lower abdomen should be cleaned with povidone iodine solution. If local anaesthetic injections are being used, the skin preparation should be done before the anaesthetic is injected. If EMLA cream is being used, skin preparation should be done 1–2 hours after the EMLA cream is applied, just before the procedure starts. The lower abdominal and thigh area should then be covered with a sterile operative drape with a hole to allow the penis through. The drape should not cover the baby's face.

^c Taddio A, Stevens B, Craig K, et al. *Efficacy and safety of lidocaine-prilocaine cream for pain during circumcision*. N Engl J Med 1997;336:1197-201

^d Mohan CG, Risucci DA, et al. Comparison of analgesics in ameliorating the pain of circumcision. *J. Perinatol.* 1998 Jan-Feb;18(1):13-9

RETRACTION OF THE FORESKIN AND DIVISION OF ADHESIONS

In infants and children, the foreskin is commonly fused to the glans by fine adhesions. These adhesions are normal. Before circumcision is performed, it is necessary to separate them.

Before the foreskin can be retracted it may be necessary to stretch the opening with an artery forceps. Care must be taken to avoid putting the tips of the forceps into the urethral meatus, in order to avoid injury.

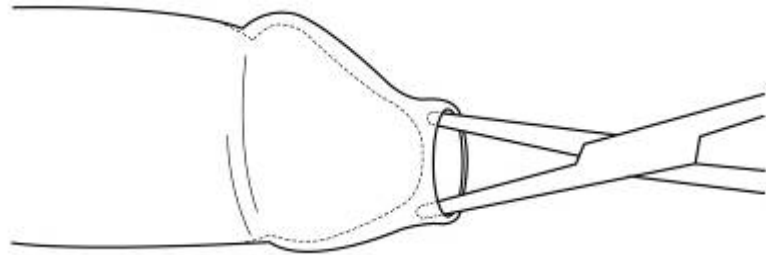


Fig. 6.2 Stretching the foreskin opening with an artery forceps

Once the opening has been dilated, slowly retract the foreskin and separate adhesions by gently running a blunt probe around the glans or using gauze to separate the glans from the foreskin, until the corona is exposed. An alternative to a blunt probe is the tip of a closed pair of mosquito artery forceps. It sometimes helps to moisten the glans with chlorhexidine or povidone iodine, or to apply some sterile gel when separating adhesions.

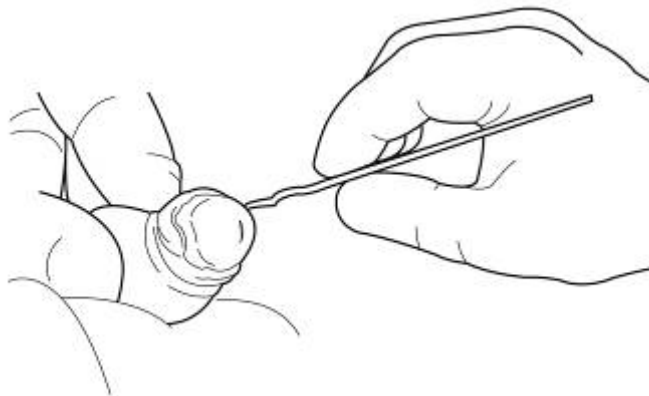


Fig. 6.3 Retraction of the foreskin and gentle division of adhesions with a blunt probe

PAEDIATRIC SURGICAL METHODS

Four techniques for circumcision of children are described in this section: the dorsal slit method, the Plastibell method, the Mogen clamp method, and the Gomco clamp method.

The dorsal slit method with closure of the wound with suture is not typically used for infant male circumcision and is more appropriate for older children, particularly in situations where the surgeon undertakes relatively few procedures so that it is not practical to stock devices. A small dorsal slit is a preliminary step when using the Gomco and Plastibell devices. Typically, in early infancy, the wound does not need to be closed with sutures, regardless of the device used.

In babies, the foreskin is long in relation to the penis, and there is little chance of penile erection. This has two important consequences. First, the glans will be further exposed towards puberty, as the penis grows relative to the foreskin. Second, clamping devices that remain on the penis for a few days (e.g. the Plastibell device) are more feasible than with adults, because there is less chance of the device being pushed off by an erection.

In early infancy (< 60 days of age), regardless of which technique is used, closure of the wound is typically not necessary. Beyond early infancy (>60 days) better cosmetic outcomes may be achieved if the wound is closed with simple interrupted sutures. The Plastibell provides a unique benefit over the other techniques in that it can be used outside of the early infant period without regularly requiring surgical closure.

Extremely rare complications such as loss of the glans, urinary retention and bladder rupture have been reported with the use of the Plastibell device as a result of migration of the ring onto the shaft of the penis, which may happen if the wrong size is used. The Plastibell should only be considered in areas where follow up is both reliable and easily available.

The Plastibell is a disposable device, whereas the Mogen and Gomco clamps are reusable. The choice between the different techniques may depend on the cost of the Plastibell, the need to sterilize the Mogen and Gomco clamps, the ages at which circumcision is performed, and the possible need for suturing skills.

The advantages and disadvantages of the different methods of paediatric circumcision are summarized in Table 6.2.

Table 6.2 Advantages and disadvantages of four methods of paediatric circumcision

Method	Advantages	Disadvantages	Comments
#1 Dorsal slit	Can be performed at any age in any hospital or clinic equipped with standard surgical instruments.	Requires more surgical skill than other methods. Rare risk of urethral injury.	Can be undertaken by skilled surgeons on an occasional basis
#2 Plastibell	Can be performed outside of early infancy without typically requiring closure of the wound. Disposable. Reduced risk of penile amputation and laceration.	Requires stock of different sizes of Plastibell. Routinely requires dorsal slit with risk of urethral injury. Rare possibility of injuries associated with proximal migration of ring. May require second clinic attendance to have bell removed.	Close follow up and easy access to care essential. Suitable for clinics with large numbers of babies.
#3 Mogen clamp	Simple, one piece instrument, only one size, fastest of all the techniques, easy to teach Does not routinely require a dorsal slit, reducing risk of urethral injury No parts retained following the procedure	Rare risk of partial glans amputation. Risk of buried glans if device applied for too long	In older infants (>60 days) sutures may be necessary. Suitable for clinics with large numbers of babies.
#4 Gomco clamp	Reduced risk of penile amputation. No parts retained following the procedure.	Routinely requires dorsal slit with risk of urethral injury Requires multiple sets and different sizes of clamps. Multipart device with risk that parts will be lost, damaged or interchanged. Risk of penile laceration if device parts interchanged.	In older infants (>60 days) sutures may be necessary

Suture material

Sutures are almost always used in the dorsal slit method but are typically not required for the Gomco and Mogen technique when used in early infancy (<60 days of age). The selection of suture size is a compromise between ensuring adequate tensile strength and keeping the amount of foreign material to a minimum. The preferred suture size for paediatric surgery is 5/0 or 4/0 chromic catgut or vicryl rapide. The suture should be mounted on a round-bodied needle.

Dorsal slit method for children

The dorsal slit technique can be undertaken by any skilled surgeon, using standard operating instruments. The technique is useful in clinics undertaking limited numbers of paediatric circumcisions. The penis of an infant is small, and any surgeon who is going to undertake paediatric circumcision should already be competent with general surgical skills and adult procedures. There is a need for fine movements and small tissue bites. In particular, the surgeon must take care in the region of the frenulum, because the urethra is close to the skin, and can easily be injured.

Step 1. After cleaning, draping, and anaesthesia, a sterile marking pen or gentian violet is used to mark the line of the circumcision over the corona, with no tension on the foreskin, using the technique described in Chapter 5.^e

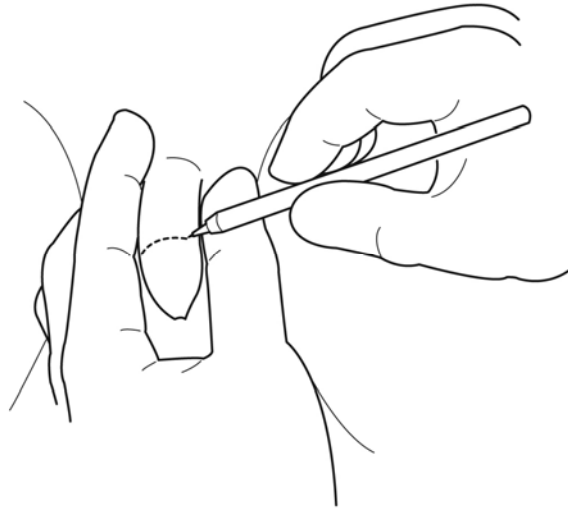


Fig. 6.4 Marking the line of the circumcision.

Step 2. Clamp the foreskin at the 12 o'clock position, taking care not to place the tip of the clamp beyond the previously marked circumcision line (Fig. 6.5). Close the clamp to crush the skin and leave in place for one minute. This reduces bleeding.

^e Kaplan GW. Complications of circumcision. *Urol Clin North Am* 1983; 10543-549

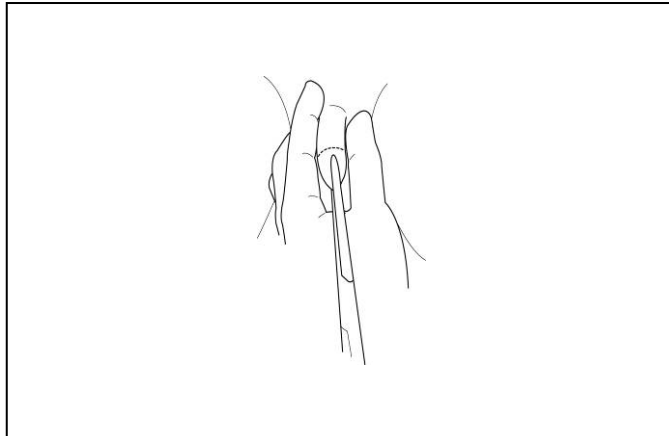


Fig. 6.5 Clamping the foreskin

Open and remove the clamp then hold the foreskin with artery forceps on each side of the crushed area, at the 11 o'clock and 1 o'clock positions. Using scissors make a cut at the 12 o'clock position, through the crushed skin. Special care should be taken not to insert the artery forceps or scissors into the urethra. (Fig. 6.6).

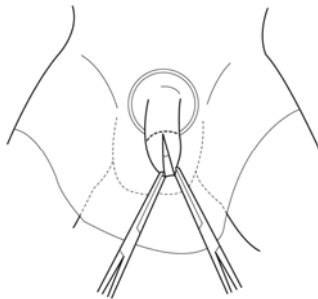


Fig. 6.6 The dorsal slit

[NOTE TO ARTIST: Use Fig 6.10 without the suture]

Step 3. Using scissors cut the foreskin free, following the previously marked circumcision line (Fig. 6.7). Some surgeons use the bell of the Plastibell as a guide. This has the advantage of protecting the glans but the disadvantage that a new Plastibell device is required each time.

It may be necessary in older boys to trim the mucosal layer of the foreskin to 2–3 mm from the corona. If this layer is left too long, the suture line can slip back over the glans, constricting it and making it appear as if the foreskin has not been removed ("concealed glans"). Control any significant bleeding by clipping the blood vessel with an artery forceps and then tying. Bipolar diathermy may be used, if available. Minor bleeding can be controlled with simple pressure for five minutes.

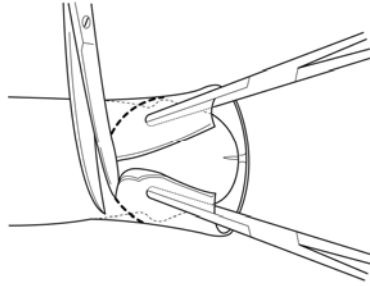


Fig. 6.7 Removing the foreskin by cutting along the marked line of circumcision

Step 4. Suture the edges of the incision with 5/0 or 4/0 vicryl or catgut sutures (depending on the age of the child) and a round-bodied needle. Cutting needles should not be used.

Approximate the skin edges and the frenulum using simple sutures; mattress sutures are not necessary. Take great care at the frenulum, because the urethra is near the surface and can easily be injured by too deep a bite. Place all sutures approximately 1 mm from the skin edge. Place the first two sutures at the 12 o'clock and 6 o'clock positions, leaving them long and temporarily held with forceps (Fig. 6.8). This keeps the penis stable while the remaining sutures are completed. In babies, only two further stitches may be needed on each side. In older children, it is helpful to place sutures at the 3 o'clock and 9 o'clock positions, and then to place the final sutures in between.

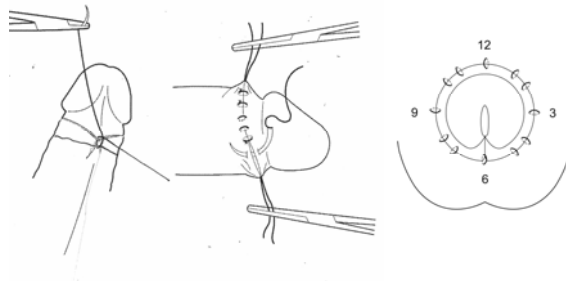


Fig. 6.8 Suturing the circumcision wound.

Finally, inspect the wound and apply a piece of gauze impregnated with petroleum jelly or with petroleum jelly plus antibiotic.

Information for parents

The parents of infants and children who have had a dorsal slit circumcision should be told that it is not necessary to use a dressing, and the baby can be looked after in the regular way, including normal washing and use of nappies. Healing is usually complete after about one week.

The parents should be told to come back to the clinic if:

- the child appears to be distressed or in pain;
- the child has fever;
- the child does not wake for feeding as per his usual pattern;
- the glans or wound becomes discoloured;
- there is any separation of the skin edges;
- there is any unusual swelling or bleeding;
- the child has any difficulties with urination;
- the parents have any other worry about healing.

The Plastibell method

The Plastibell technique is widely used and has been shown to be acceptable and practical in developing country settings. This technique requires less surgical skill than the dorsal slit method to produce a neat result. It can be used in children up to age 10–12 years, and can be used with EMLA anaesthetic cream. However, as for other surgical methods, incorrect technique can result in complications. Any clinic offering Plastibell circumcision needs to have in stock the full range of bell sizes. If the bell used is too small, it may cause pressure necrosis and injury to the glans. If the bell is too large, it may slip over the glans onto the shaft of the penis and cause constriction. In extreme cases this may result in gangrene and loss of the glans and/or urinary retention and bladder rupture.^{fgh} For these reasons, the Plastibell technique is only recommended for use in clinics that regularly perform paediatric circumcisions and follow-up can be assured; it is not recommended for occasional use.

The Plastibell is manufactured by the Hollister Company and comes in six different sizes each in a sterile package.



Fig. 6.9 The Plastibell device (manufactured by Hollister Inc., 2000 Hollister Drive, Libertyville, Illinois 60048, USA)

Step 1. Select the correct size of Plastibell according to the girth of the glans. The most commonly used sizes are 11 or 13 mm.

Step 2. After cleaning, draping anaesthesia, and marking the line of the circumcision over the corona, retract the foreskin

^f Bode C, Ikhisemojie S, Ademuyiwa A, *Penile injuries from proximal migration of the plastibell circumcision ring. Journal of Pediatric Urology* 2009.05.011

^g Mihssin N. Retention of urine: an unusual complication of the Plastibell device. *BJU International*. 1999; 84, 745

^h Jee LD. Ruptured bladder following circumcision using the Plastibell device. *Br J Urol* 1990;65:216-7

and separate the adhesions to expose the corona, as described above.

Step 3. It is usually necessary to make a dorsal slit (as described above) before the Plastibell can be placed on the glans. The slit needs only to be sufficiently long to allow the Plastibell to be placed over the glans. Each Plastibell is supplied in a sterile packet with a ligature – the Plastibell tie. The procedure is easier if, after opening the Plastibell package, the Plastibell tie is placed loosely around the shaft of the penis before the dorsal slit is made (Fig. 6.10).

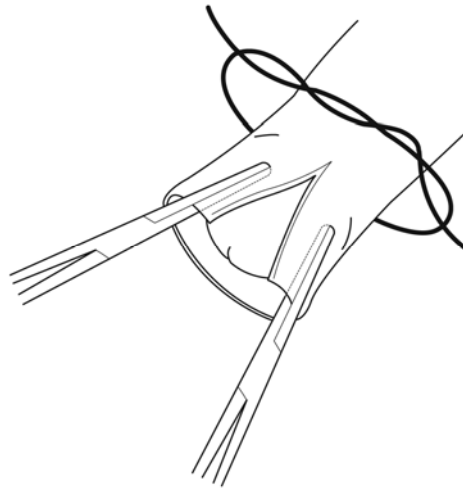


Fig. 6.10 The dorsal slit, allowing access to the glans

Step 4. Place the Plastibell on the glans, as shown in Fig. 6.11.

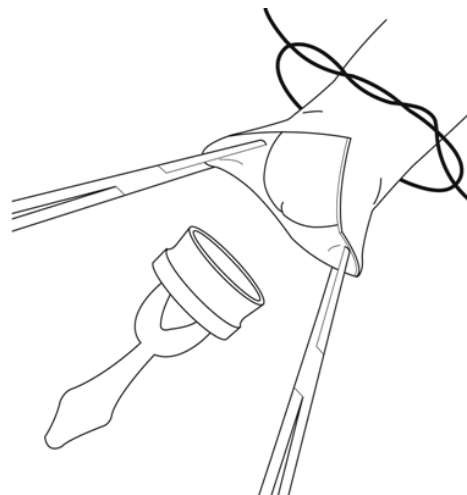


Fig. 6.11 Placing the Plastibell on the glans

Step 5. Pull the foreskin back over the Plastibell. It is sometimes helpful to hold the foreskin in position by clipping it to the Plastibell handle with an artery forceps (Fig. 6.12).

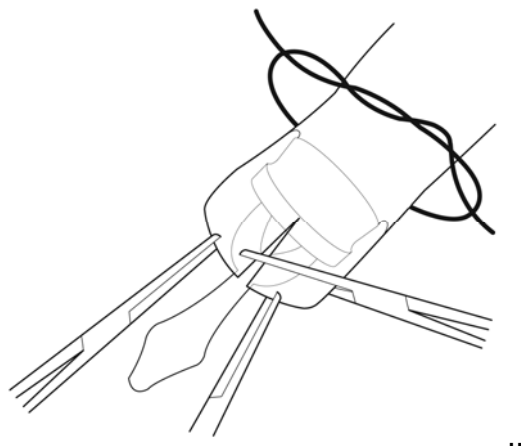


Fig. 6.12 An artery forceps is used to secure the foreskin to the handle of the Plastibell

Step 6. Carefully place the ligature in the groove of the Plastibell. Ensure that it is in the correct position, then pull it tight and tie. Cut off the foreskin using scissors, leaving 1–2 mm of cuff to prevent the ligature from slipping off (Fig 6.13).

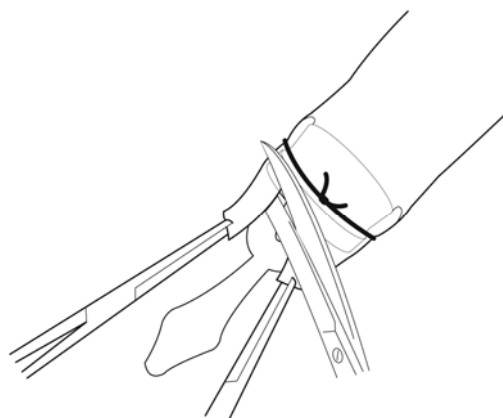


Fig. 6.13 Cutting away the foreskin

Step 7. Snap off the handle of the Plastibell (Fig 6.14).

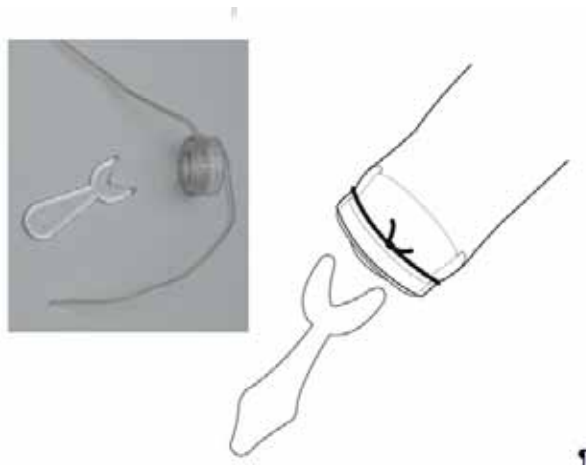


Fig. 6.14 Snapping off the Plastibell handle

Step 8. Check that there is no bleeding. If all is well, the child can be sent home and looked after in the normal way, including normal washing and use of nappies. The rim of tissue distal to the ligature will become necrotic and the Plastibell will drop off after 5–8 days. Alternatively the infant can be checked after 36–48 hours and the ligature cut.

Information for parents

The parents of infants and children who have had a Plastibell circumcision should be told that it is not necessary to use a dressing, and the baby can be looked after in the normal way, including normal washing and use of nappies. Healing is usually complete after about one week. Bleeding is rare because the clamp crushes the edge of the foreskin. The parents should be told to come back to the clinic if:

- the child appears to be distressed or in pain;
- the child has fever;
- the child does not wake for feeding as per his usual pattern;
- there is any separation of the skin edges;
- there is any unusual swelling or bleeding;
- the child has any difficulties with urination;
- the plastic ring slips onto the shaft of the penis;
- the tip of the penis becomes swollen or changes colour
- one part of the foreskin remains pink or has not shrivelled after 48 hours;
- the plastic ring has not fallen off within 8 days;
- the parents have any other worry about healing.

The Mogen clamp method

The Mogen clamp is widely used. There have been several studies comparing it with the Gomco clamp, another widely used device. The Mogen (“shield”) clamp compares favourably, because it is easy to use and has no parts to assemble. The fewest complications with this method have been reported in the context of circumcision of 8-day-old babies. Since the Mogen clamp is reusable, careful precautions have to be taken to ensure the device is properly cleaned and sterilized between procedures. Also there is a risk that the glans can be pulled into the slit and crushed or partially severed.ⁱ



Fig. 6.15 The Mogen clamp

Step 1. After cleaning, draping, anaesthesia and marking the line of the circumcision over the corona, retract the foreskin and separate the adhesions to expose the corona, as described above.

It is important to separate all adhesions in order to prevent the glans from getting accidentally pulled into the Mogen clamp and injured.

Step 2. Put traction on the foreskin, and introduce it into the slit in the device, with the concavity facing the glans (Fig 6.16). It is important to ensure that the glans is not pulled into the slit.^j If there is any doubt, remove the clamp, inspect the glans for any sign of crushing injury and reapply the clamp.

ⁱ Strimling BS: Partial amputation of glans penis during circumcision. *Pediatrics* 97: 134-136, 1995

^j Strimling BS: Partial amputation of glans penis during circumcision. *Pediatrics* 97: 134-136, 1995

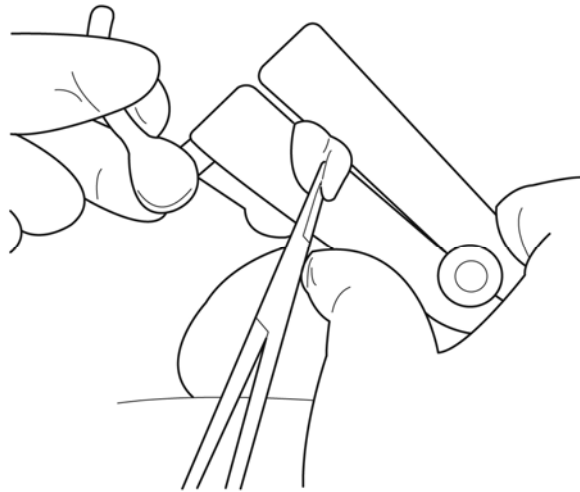


Fig. 6.16 The Mogen device in situ

Step 3. Close the device, crushing the foreskin. Leave in the closed position for 3–5 minutes, to reduce the risk of bleeding. If the device is left too long it may be difficult to separate the foreskin to reveal the glans after the device is removed.

Step 4. Cut off the foreskin on the outer side of the clamp with a scalpel (Fig 6.17). Open the device and remove.

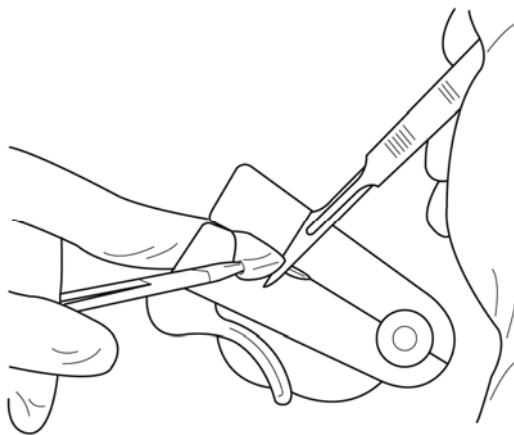


Fig. 6.17 The foreskin is cut flush with the clamp using a scalpel. The Mogen clamp device protects the glans from injury.

Step 5. Manipulate the penis, using gentle pressure from the side, to allow the glans to emerge from under the crushed foreskin (Fig 6.18). This is an important step to ensure the foreskin heals below the level of the corona. In older infants (>60 days) it may be necessary to place some 5-0 simple sutures to approximate the edges.

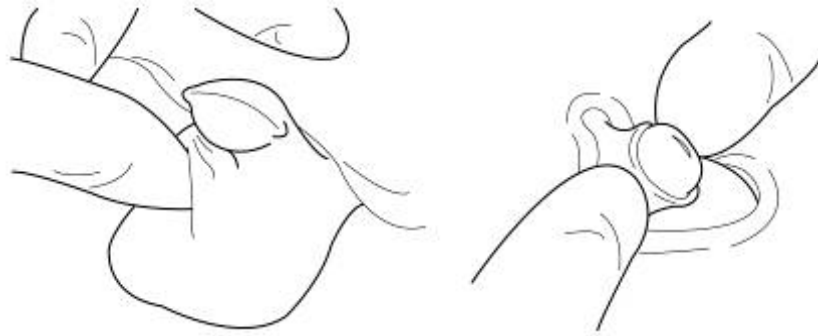


Fig. 6.18 Liberating the glans after removing the Mogen clamp

Step 6. Wrap a piece of petroleum-jelly-impregnated gauze loosely around the penis.

Information for parents

The parents of an infant or child who has had a circumcision using the Mogen clamp technique should be told that it is not necessary to use a dressing and the child can be looked after in the normal way, including normal washing and the use of nappies. Healing is usually complete after about one week. Bleeding is rare because the clamp crushes the edge of the foreskin.

The parents should be told to come back to the clinic if:

- the child appears to be distressed or in pain;
- the child has fever;
- the child does not wake for feeding as per his usual pattern;
- there is any separation of the skin edges;
- there is any unusual swelling or bleeding;
- the child has any difficulties with urination;
- the parents have any other worry about healing.

The Gomco clamp method

The Gomco clamp has different bell sizes that can be used for infants, older children and adults. In addition, the crushing of the foreskin is circular (unlike with the Mogen clamp, which is linear).. A disadvantage of the Gomco clamp is that, unlike the Mogen clamp, it consists of four parts – base plate, rocker arm or top plate, nut and bell. A number of bells of different sizes are also needed. There is a risk that parts of the clamp may be mislaid or lost during cleaning and sterilization. Before the start of the procedure and before any anaesthetic is given the surgeon must check that likely sizes of Gomco clamps are available. Once the procedure has started and the correct size has been selected the clamp should be assembled to ensure parts are complete and fit correctly.

Meticulous care must be used to not mismatch device parts. If a small bell is used with a larger base plate the device will not crush the foreskin or protect the glans, possibly resulting in haemorrhage and penile laceration. Correctly matched and sized parts must be used.

Component parts from different clamps or manufacturers are not interchangeable and care must be taken to ensure that the clamp is assembled only from its original parts.

The Gomco clamp should also be thoroughly checked and not used if it has stripped threads, a warped or bent base plate, a bent arm, twisted forks on the rocker arm, or a scored or nicked bell. The clinic may mark clamp parts to ensure that they are correctly reassembled. If so, the manufacturer should be consulted on the best way to do this. Some marking methods may weaken the device or make it difficult to sterilize it.

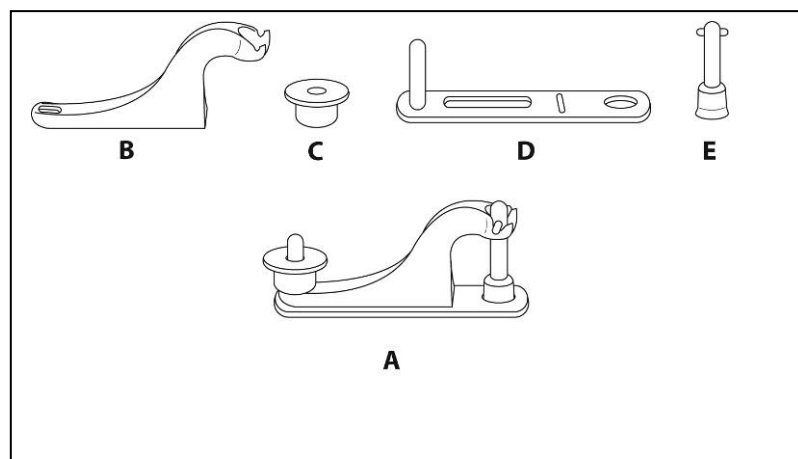


Fig. 6.19 The Gomco clamp. A: assembled device. B: rocker arm. C: nut. D: base plate. E: bell.



Fig. 6.20 Photograph of Gomco clamp

Step 1. After cleaning, draping anaesthesia, and marking the line of the circumcision over the corona, retract the foreskin and separate the adhesions to expose the corona, as described above.

Step 2. It is usually necessary to make a small dorsal slit to allow the clamp to be placed on the glans (Fig 6.21). It is important not to make the dorsal slit too long. Otherwise, it will extend beyond the ring of crushed tissue produced by the Gomco clamp and may produce an untidy result with increased risk of bleeding. The dorsal slit should be long enough to allow all adhesions to be divided and the bell of the Gomco clamp to be placed over the glans.

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Fig. 6.21 Making a small dorsal slit in preparation for placing the Gomco clamp.

Step 3. Choose the correct size of Gomco clamp bell to fit the glans. For neonatal circumcision, a bell size of 1.1 cm is usually appropriate. Introduce the bell through the aperture in the foreskin and place over the glans. Then pull the foreskin over the bell (Fig 6.22).

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Fig. 6.22 Placing the bell and base plate of the Gomco clamp.

Step 4. Place the base plate of the Gomco clamp over the bell, keeping the foreskin pulled over the bell (Figs 6.22 and 6.23). Put the rocker arm of the clamp in position, taking care to place the crossbar at the top of the bell correctly in the yoke. The clamp is now ready for tightening.

Before tightening the clamp, make sure that the foreskin is symmetrical over the bell. The apex of the dorsal slit should be visible. Finally, the crossbar at the top of the bell should sit

squarely in the yoke of the clamp, otherwise there will be uneven crushing and a risk of bleeding.

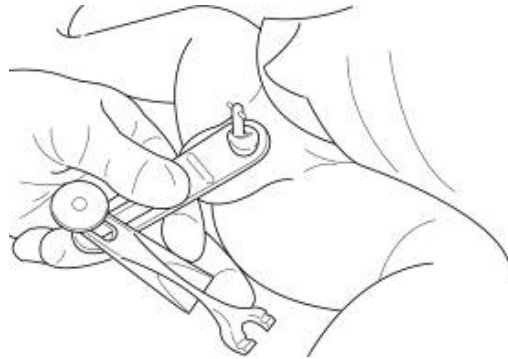


Fig. 6.23 Placing the base plate over the bell

Step 5. Once you are sure that the clamp is in the optimal position, tighten the nut until the foreskin is crushed (Fig 6.24).

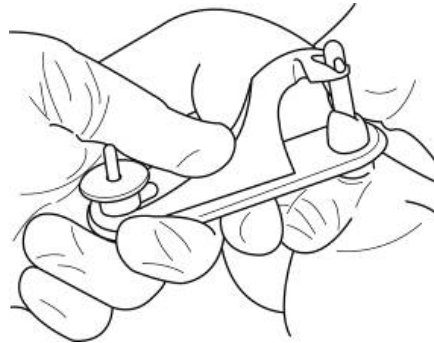


Fig. 6.24 Tightening the clamp.

Step 6. Using a scalpel, excise the foreskin circumferentially against the bell, distal to the clamp (Fig 6.25). The head of the penis is protected from being cut by the bell of the clamp. Leave the clamp in position for 5 minutes, then loosen and remove.^k

^k Yellen, HS. Bloodless Circumcision of the Newborn. American Journal of Obstetrics and Gynecology 1935, 30:146-147

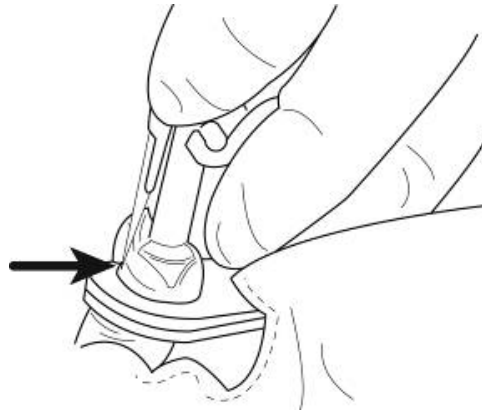


Fig. 6.25 Excising the foreskin.



Fig. 6.26 Completed Gomco clamp procedure.

Step 7. Once the clamp has been removed (Fig 6.26), the crushed skin edge will typically have resulted in haemostasis with good tissue alignment. Normally in early infancy, no sutures are required. In older infants (>60 days) it may be necessary to place some 5-0 simple sutures to approximate the edges.

To obtain a good result with the Gomco clamp, the surgeon must ensure:

- (a) the dorsal slit is not made too long, the apex must be above the crushed skin edge.
- (b) the crossbar of the bell is placed evenly in the yoke of the rocker arm, so that there is an even distribution of the crushing force; and
- (c) the foreskin is symmetrically aligned over the bell.

Information for parents

The parents of an infant or child who has had a Gomco clamp circumcision should be told that it is not necessary to use a dressing, and the baby can be looked after in the normal way, including normal washing and the use of nappies. Healing is usually complete after about one week. Bleeding is rare

because the clamp crushes the edge of the foreskin. Parents should be told to bring the child back to the clinic if:

- the child appears to be distressed or in pain;
- the child has fever;
- the child does not wake for feeding as per his usual pattern;
- there is any separation of the skin edges;
- there is any unusual swelling or bleeding;
- the child has any difficulties with urination;
- the parents have any other concern about healing.

REFERENCES

- ¹ Taddio A, Stevens B, Craig K et al. Efficacy and safety of lidocaine-prilocaine cream for pain during circumcision. *N Engl J Med* 1997;336:1197-1201.

Appendix 6.1

INFORMATION FOR PARENTS CONSIDERING CIRCUMCISION FOR THEIR CHILD

Parents should be given information about circumcision so that they can give informed consent to the procedure. The information should be given verbally in the local language using non-technical terms. In addition, the clinic should have printed information sheets that the parents can take home. Information given needs to be specific to the clinic, and should include the following topics.

- **What circumcision is.** Circumcision is removal of the foreskin. This means that the head of the penis is exposed all the time. It does not affect the ability to pass urine normally and does not affect the ability to father children in adult life.
- **The benefits of circumcision.** The main benefits of circumcision are improved penile hygiene, reduced risk of sexually transmitted infections, including HIV, and reduced risk of cancer of the penis.
- **How circumcision is done.** The technique to be used should be described, i.e. dorsal slit with sutures, Plastibell, Mogen or Gomco clamp methods.
- **The risks of circumcision.** It should be explained that complications from male circumcision are extremely rare but can include poor cosmetic outcome, bleeding, infection, or injury to surrounding structures.
- **What to do before circumcision.** No special precautions are needed before the operation. If the child becomes ill before the planned operation date, the parents should contact the clinic to postpone the procedure until after the child recovers.
- **What to do after circumcision.** The instructions will depend on the procedure that has been used (see descriptions of techniques in Chapter 6).
- **What to do** if there are any complications or problems after circumcision, in particular bleeding, infection or other concerns. This will usually be for the family to bring the baby back to the clinic, but if distance makes a return visit difficult then an alternative health facility should be identified.
- **An emergency contact number** or information about where to go in an emergency.

Appendix 6.2

SAMPLE CONSENT DOCUMENT FOR A MINOR

The name of my son/ward is _____ (BLOCK CAPITALS)

My name is _____ (BLOCK CAPITALS)

I am the boy's parent/legal guardian.

I am asking you to do a circumcision operation (removal of the foreskin) on my son/ward and I give you permission to do this operation.

Signed
(parent or legal guardian)

My name is _____ (BLOCK CAPITALS)

I am the **counsellor/surgeon** who has given information to the parent or guardian of the above-mentioned boy.

I have given information about:

- what circumcision is;
- the benefits of circumcision;
- how circumcision is done;
- the risks of circumcision;
- what to do before circumcision;
- what to do after circumcision;
- what to do if there are any complications or problems after circumcision;
- an emergency contact number and information about where to go in an emergency.

I have given the client an opportunity to ask me questions about all the above.

I have asked the parent or guardian some questions to make sure that he or she understands the information I have given.

To the best of my belief the client is capable of giving consent and has enough information to make a proper decision about whether to proceed with the operation of circumcision.

Signed
(Circumcision clinic counsellor or surgeon)

Chapter 7

Postoperative care and management of complications

Summary

- Possible complications of male circumcision include excessive bleeding, formation of haematoma, infection, an unsatisfactory cosmetic effect, lacerations of the penile or scrotal skin, and injury to the glans.
- Certain complications can be managed in the clinic. For others, the patient may need to be referred to a higher level of care.
- Complications of circumcision can be avoided by ensuring asepsis during the procedure, performing careful and accurate excision of the inner and outer preputial layers, ensuring adequate haemostasis, and paying attention to the cosmetic result.

POSTOPERATIVE CARE

Postoperative monitoring

It is very important to monitor the client for at least 30 minutes after surgery, because it is during this period that the effects of surgical trauma and other complications become apparent. Nurses or other staff members can carry out the tasks related to postoperative recovery and discharge, but the surgeon is ultimately responsible for the quality of post-circumcision care.

The summary below assumes that the circumcision has been performed in a clinic under local anaesthetic. If circumcision was performed in a hospital under general anaesthetic, the normal hospital recovery room protocols should be followed.^a

- Receive the client from the theatre; review the client record.
- Monitor the client's vital signs: check blood pressure, breathing, and pulse twice, at 15-minute intervals.
- Check the surgical dressing for oozing or bleeding.
- Ask the patient if he has any pain.
- Observe the general condition of the client.
- Administer any drugs or treatment prescribed.
- Provide bland carbohydrates (such as a biscuit) and liquids to raise blood sugar levels unless medically contraindicated.
- Handle the client gently when moving him.
- Make the client comfortable, according to the climate.
- Complete the client record form.

All men have occasional penile erections during sleep, and young men frequently get erections during the day. After the circumcision, the man will still have erections, which will not disrupt the process of wound healing. If, during the immediate recovery period, there is a particularly prolonged or painful erection, it can be stopped by letting the client inhale one ampoule of amyl nitrate.

Instructions for the client

It is very important to inform the client that he should avoid sexual intercourse and masturbation for 4–6 weeks after the procedure, to allow the wound to heal. A condom should then be used to protect the wound during every act of sexual intercourse for at least six months. Thereafter condoms should always be used to prevent sexually transmitted infections, HIV or unwanted pregnancy.

The dressing applied during surgery should be removed 24–48 hours later, provided that there is no bleeding or oozing. If there is any bleeding or oozing, a new dressing may be applied for a further 24–48 hours, and then checked again. Once bleeding has stopped, no further dressing is necessary and the patient should be instructed to wear freshly laundered, loose-fitting underwear. Underwear should be changed each day. After the dressing has been removed, the man can shower twice a day, and should gently wash the genital area with mild soap (baby soap) and water. (This advice may be adapted according to local conditions, including the availability of facilities for washing and showering.)

Before discharging the client, make sure that he understands that complications are infrequent, but that he should:

- look for signs of potential problems, namely:
 - increasing bleeding,
 - severe pain in the penis or genital area,
 - inability to pass urine, or severe pain when passing urine,
 - discharge of pus from the surgical wound
 - increased swelling;
- return to the clinic immediately or seek emergency care if a problem develops.

Make sure the client knows where to go if complications arise.

Give the client postoperative instructions, verbally and in writing, if appropriate (see Appendix 7.1). Ask him to repeat the instructions, to make sure that he has understood them. Give him any medications prescribed, and arrange an appointment for follow-up (see below). Check that a responsible adult is available to accompany the client

home (this is of particular importance for clients who are below the age of consent). It is helpful if the instructions given to the client are also given to any accompanying adult.

The surgeon or designated member of the team should assess whether the client is ready for discharge.

Finally, the client record should be completed.

Transfer of client records

All client records should be kept at the service site where the procedure took place. If the follow-up visit will take place at another facility, the client should be given a card to give to the follow-up provider. The card should indicate the date of the procedure, the type of procedure, and any special instructions. If it is necessary to transfer the client's records, a copy should be made and the original kept at the facility where the surgery took place.

FOLLOW-UP VISITS

Ideally, the surgeon who performed the circumcision should conduct the follow-up examination. However, if this is not possible, a trained non-physician can perform the examination and manage minor complications. If the client goes to a different health centre for follow-up, it is important that the staff at that facility are trained to do a careful follow-up examination and report any complications to the facility where the circumcision took place.

Routine follow-up

The follow-up visit should be within 7 days of surgery. The provider should assess the progress of healing and look for signs of infection. The operation site should be examined, and additional examinations should be done as required by the case history, symptoms or complaints of the client. If the client has a problem that cannot be resolved, another visit should be scheduled or he should be referred to a higher level of care.

At the follow-up visit:

- Check the medical record or referral form for background information on the client and the surgical procedure.
- Ask the client if he has had any problems or complaints since the surgery. Specifically, ask if he has experienced any of the following:
 - discharge or bleeding from the wound,
 - difficulty urinating,
 - fever,
 - pain or other distress, or

- swelling of the penis or scrotum.
- Examine the operation site to assess healing and ensure that there is no infection.
- Treat any complications found during the examination (see below), or refer the client to a higher level.
- Ask the client whether he is satisfied with the service provided or has any comments to make that will help improve the service.
- Document the follow-up visit in the client's medical record, including any complaints, diagnosis, treatment and comments.

Emergency follow-up

Clients who come for an emergency follow-up visit should be seen immediately. Staff should be alert to the possibility of excessive bleeding or infection.

At an emergency visit:

- Examine the client immediately. Check all areas related to his complaint.
- Read the medical record, if available.
- Ask the client about the sequence of events since the operation. Ask about: any problems during the surgery or in the recovery period; how problems developed; any increase in discomfort; and any medication taken or other treatments obtained.
- Arrange for treatment of any problems that can be handled on an outpatient basis.
- Refer the client to a higher level of care for treatment of potentially serious complications.
- Note on the client record all problems and actions taken.
- Inform the facility where the male circumcision was performed about the emergency follow-up visit (if applicable).

RECOGNITION AND MANAGEMENT OF COMPLICATIONS

This section describes the complications that can be managed in the clinic setting, and the indications for referral to a higher level of care.

If complications occur during or after the circumcision, the team should take the time to inform the client, and if possible his family,

about what has happened and the plans to deal with the complication. Anxiety and fear of the unknown add to the distress caused by complications. These can be greatly reduced if the client is given clear explanations about what is happening.

For example, a complaint of increasing penile pain and fever 4–5 days after surgery is indicative of wound infection. If there are signs of infection on examination, the client should be given antibiotics and the situation reviewed after 24–48 hours, depending on the severity of the complaint. In these circumstances, the client and his family should be told there is an infection, that antibiotics are needed, and when the situation will be reviewed.

Organizing referrals

A circumcision team working in a clinic setting should have a formal arrangement with the nearest referral centre, so that there are no bureaucratic obstacles when referral is required. When strengthening or establishing national or local circumcision services, adequate funding for referrals should be included as part of the cost of the circumcision service.

Many complications can be managed in the clinic setting, but occasionally emergency transfer may be needed. When there is a need for emergency transfer, the following general rules apply:

- The client should be transferred by ambulance, lying flat.
- The client and his family should be given a full explanation of what is happening and why.
- A clear note should be sent to the referral centre with the client.
- The client should be told not to eat and, depending on the length of the journey, not to drink, as a general anaesthetic may need to be given at the referral centre. Any accompanying family member should also be given this information.

Complications occurring during surgery

- **Excessive adhesions.** If the client has phimosis, so that the foreskin cannot be retracted prior to surgery, there is uncertainty about what will be found once the dorsal slit has been made and the foreskin retracted. If there are excessive adhesions, it may be difficult to separate the foreskin from the glans. Depending on the experience of the circumcision team, it may be better to stop the procedure and refer the man to a hospital. In this situation, the dorsal slit will have to be repaired, using stitches to stop bleeding. It will not be possible to put on a dressing because the man will need to urinate. Nevertheless, the area should be kept as clean as possible. The wound should be covered with a gauze swab, which the man can keep in place by wearing tight underpants. Arrangements should be made for the man to attend the local

referral hospital as soon as convenient, and in any case within 24–48 hours.

- **Excess bleeding during surgery.** If there is excessive bleeding during the surgery, the first rule for the surgeon is not to panic. More damage is caused by panic attempts to stop bleeding than by the original injury. Place a swab under the penis and a second swab over the bleeding point, apply firm pressure, and wait five minutes (timed by the clock). After five minutes, slowly lift off the swab. Often, the bleeding will have stopped. Do not be tempted to look under the swab before five minutes have elapsed. If the bleeding has not stopped after five minutes, the site of the bleeding will be obvious. Apply a haemostatic artery forceps to the bleeding point. If this does not control the bleeding, apply pressure over a swab for a further 5 minutes (timed). At the end of this time, gently lift the swab again, and under-run the bleeding area with a suture. Remember that the larger blood vessels generally run along the length of the penis, and place the suture proximal to the bleeding (that is, on the side towards the base rather than the tip of the penis). It is very likely that these measures will control bleeding. If, exceptionally, the bleeding continues, the man should be transferred to a referral centre as an emergency, or a more experienced surgeon should be called to help.
- **Bleeding from the frenular artery.** If there is excessive bleeding from the frenular artery, an under-running haemostatic stitch should be used to occlude the artery (Fig. 7.1). Great care is needed not to bite too deeply, because the urethra is near to the surface skin and can easily be damaged.

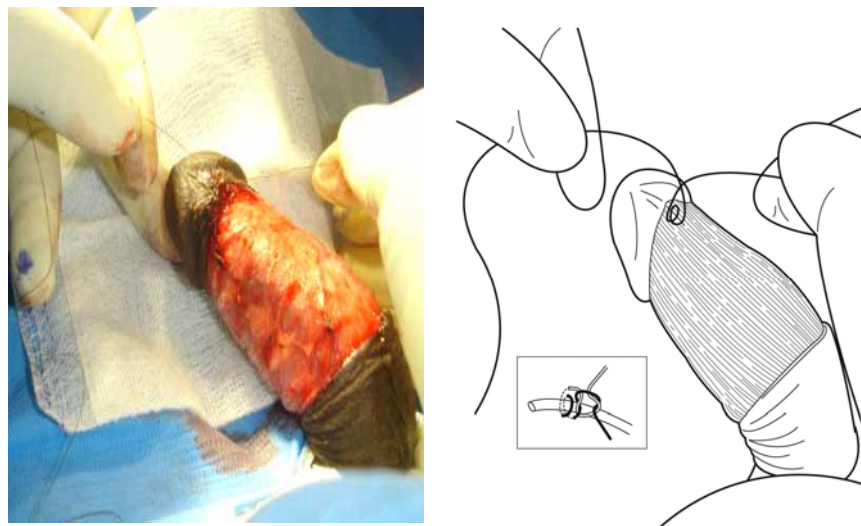


Fig. 7.1 Suture under running the frenular artery

- **Accidental injury.** Accidental injury can include injury to the glans (e.g. partial severing of the glans) or too deep an incision, resulting in bleeding that is difficult to control. Any bleeding should be controlled by applying pressure over a piece of gauze, and the man should be transferred as an emergency to a referral centre. If

the transfer time is likely to be long, insert a urinary catheter, wrap the penis in sterile gauze, and tape the gauze in place. During the transfer, the client should lie flat. At all times, the client and his relatives should be kept informed about what has happened and what is going to be done. The risk of such accidents is reduced if the surgeon has received proper training and certification, and if there is a system of ongoing appraisal and recertification. Risks are higher if the surgeon becomes overconfident, or when timetable constraints result in operations being done in a hurry. To avoid this, countries need to have established and well-funded training and recertification procedures, and clinics need to ensure that adequate time is allowed for surgery.

- **Severing of the glans.** If part or all of the glans has been severed, it should be wrapped in a sterile paraffin gauze to prevent drying and placed in a polyethylene bag. The man and his glans should be transferred as soon as possible to a referral centre, where it may be possible to reattach the glans.

Complications occurring within the first 48 hours after surgery

- **Bleeding** is the most likely complication during the first 24–48 hours. A small amount of bleeding onto the gauze dressings is usual, but may alarm the client. If he comes back to the clinic with blood-soaked dressings, these should be removed and the circumcision wound inspected for an obvious bleeding point. If there is fresh blood from the skin edge, a further suture should be inserted. This will require a full sterile procedure, as for the original circumcision, including local anaesthesia and sterile draping. Usually, placing one or two additional mattress sutures over the area will stop the bleeding.
- **Haematoma** may form and may be associated with considerable bruising and skin discoloration. In general, haematomas are best left alone, unless they are very large or there is continued bleeding. The choice is between applying a further clean dressing and reviewing the situation in 24 hours, or applying a clean dressing and sending the client to a referral centre. If the circumcision team is relatively inexperienced, it is safer to send the man to the referral centre.
- **Wound disruption** is unusual in the first few days, but is sometimes seen in association with subcutaneous bleeding and haematoma formation, when the stitches cut out. In this situation the man should be sent to a referral centre. The specialist at the referral centre may decide either to suture the wound or to leave it to heal by secondary intention, depending on the state of the skin edges. If the disruption occurs within 48 hours of the operation, it is usually better for the clinic surgeon to explore and re-suture the wound.

Complications that occur within the first two weeks after surgery

- **Infection.** After 2–3 days, the most likely problem is wound infection. An infection often causes increasing pain, and there may be visible signs, such as redness or purulent discharge. The patient should be given an appropriate antibiotic and advised to take frequent showers and to put a clean dressing on the wound between showers. If the infection is severe, the man should be advised to lie on his back, so that his penis is the highest point of his body. This promotes drainage of lymphatic fluid and speeds up the healing process. Sitting in a chair is a bad position. Alternatively the wound can be left without a dressing, but should be protected from flies.
- **Wound disruption and cutting out of stitches.** When stitches cut out, this usually indicates that there is an infection, and the patient should be given antibiotics (see above). If more than 48 hours have passed since the operation, do not try to re-suture the wound, as the new stitches are likely to become infected and also cut out, making the situation worse. The wound should be left to heal by secondary intention. The man should be seen at the clinic as often as necessary until the wound has healed. In general, the healing process after infection leaves an untidy result, at least for the first few months. The man should be reassured that the appearance will usually become normal after about a year.
- **Worsening wound infection with signs of gangrene.** A rare risk of genital surgery is infection with multiple bacteria, causing progressive skin loss. In this situation, the blood supply is cut off, and the skin becomes necrotic and turns completely black. This condition is known as Fournier's gangrene (synergistic gangrene or necrotizing fasciitis) and is more common in men who have diabetes. Any man with signs of spreading infection or black gangrenous skin should be urgently transferred to a referral centre. At the referral centre, it is usually necessary to give a general anaesthetic and remove all the dead skin.

Late complications

In the long term, the client may complain of:

- decreased sensitivity of the glans;
- oversensitivity of the glans;
- unsightly circumcision wounds, ragged scars or other cosmetic concerns;
- persistent adhesions at the corona and inclusion cysts. These problems can be avoided if the foreskin is fully retracted during the operation and all adhesions carefully divided;
- discomfort during erection from the scrotal being skin pulled up the shaft of the penis and a tight scrotal sac. This can result from removal of too much skin during the circumcision. These problems can be avoided by careful preoperative marking of the incision lines.

- torsion (misalignment) of the skin of the penile shaft. This can be avoided by taking care during the operation to align the midline raphe with the frenulum.

Appendix 7.1

SAMPLE POSTOPERATIVE INSTRUCTIONS FOR MEN WHO HAVE BEEN CIRCUMCISED

- After the operation, rest at home for one or two days. This will help the wound to heal.
- You may bathe on the day after surgery, but do not let the dressing get wet.
- Remove the dressing 24–48 hours after surgery.
- Do not pull or scratch the wound while it is healing.
- Do not have sexual intercourse or masturbate for 4–6 weeks, and use condoms to protect the wound for every act of sexual intercourse for at least six months until the wound has healed completely. (Your health care provider will advise you about this during your follow-up visit.)
- You may have a little pain or swelling around the wound. This is normal. Check occasionally to make sure that it does not get worse. Take any medicines provided or recommended by the clinic. Be sure to follow the instructions given to you.
- Return to the clinic or call:
 - if you notice increased bleeding from the surgical wound;
 - if the pain or swelling at the surgical wound gets progressively worse;
 - if you have difficulty in passing urine;
 - if you develop a fever within one week of surgery;
 - if you have severe pain in the lower abdomen;
 - if the wound is discharging pus.
- If you have any of these problems, go to:

- Return to the clinic for a follow-up visit about one week after the operation. A health care worker will check to see how the wound is healing.

Your next appointment is:

Day _____
Date _____
Time _____
Place _____

Chapter 8

PREVENTION OF INFECTION

SUMMARY

- Health care workers need to follow recommended practices for preventing infection, in order to protect themselves, other health care workers, and their patients from exposure to HIV and other infections.
- Hand hygiene greatly reduces the number of disease-causing microorganisms on hands and arms. It is the most important way of limiting the spread of infection. If hands are visibly soiled, they should be washed with soap and water; otherwise, an alcohol-based handrub should be used.
- Personal protective equipment should be worn to protect both patients and staff from infectious microorganisms.
- Gloves should be worn: when there is a reasonable chance of hand contact with blood or other body fluids, mucous membranes, broken or cut skin; when performing any invasive procedure; and when handling contaminated items. A new pair of gloves should be worn for each new patient contact, to avoid spreading infection from person to person.
- Hypodermic (hollow-bore) needles can cause injuries to clinic staff at all levels: workers can be stuck by hypodermic needles during patient care, cleaning and housekeeping. Staff may be exposed to needle-stick and sharp injuries when washing soiled instruments and disposing of waste material.
- All staff should be trained in the proper handling of sharp instruments.
- Soiled instruments and other reusable items can transmit disease if not properly cleaned, disinfected and sterilized (or high-level disinfected). High-level disinfection destroys all microorganisms, except some bacterial endospores. Sterilization destroys all microorganisms, including bacterial endospores.
- Proper waste management is important to prevent accidental injury to people who handle waste items, and to prevent the spread of infection to health care workers and the local community.
- Post-exposure prophylaxis for HIV with antiretroviral drugs may reduce the risk of infection after exposure to HIV. It will be effective only if it is started as soon as possible after exposure (within 72 h) and if the full course of treatment is adhered to.
- Post-exposure prophylaxis for hepatitis B can reduce the risk of hepatitis B infection.

BASIC CONCEPTS

Measures to prevent infection in male circumcision programmes have two primary objectives:

- to minimize the risk of infections in people having surgery;
- to minimize the risk of transmitting HIV and other infections to clients and health care staff, including cleaning and housekeeping staff.

In the context of circumcision services, there are two important pathways for transmission of infection:

- **Direct transmission.** Enteric and skin infections can be transmitted by this route, as can bloodborne pathogens, such as HIV and hepatitis B virus, either by direct contact with an open wound or blood, blood products and body fluids, or by accident through a needle stick injury.
- **Airborne transmission.** Pneumonia, pertussis, diphtheria, influenza, mumps, and meningitis can be transmitted through droplets in the air, usually within a range of about 1 m, while active pulmonary tuberculosis, measles, chickenpox, pulmonary plague, and haemorrhagic fever with pneumonia can be transmitted via droplet nuclei (small-particle aerosols) over larger ranges.

In male circumcision programmes, a major concern is the potential direct transmission of bloodborne pathogens, such as HIV and hepatitis B virus, to health care workers or patients. Exposure may take place during patient care, clinical or surgical procedures, processing of soiled instruments, cleaning and waste disposal. Needle-stick injuries carry a high risk of infection; the actual level of risk will depend on the type of needle, the depth of the injury, the amount of blood or blood product on the needle, and the viral load in the blood.

The risk of acquiring HIV from an HIV-infected person through a needle-stick injury is estimated at 0.3% (three HIV infections for every 1000 injuries). The risk of acquiring hepatitis B virus infection, after being stuck with a needle that has been used on a person with hepatitis B infection ranges from 6% to 37%, with an average of 18%. Finally, the risk of acquiring hepatitis C infection after being stuck with a needle that has been used on a hepatitis-C-infected person is 1.8%.¹

Most instances of transmission of infection in health care facilities can be prevented through the application of basic infection control precautions. In the circumcision clinic, standard precautions, as described below, should be applied to all patients at all times, regardless of their infection status.

STANDARD PRECAUTIONS

Standard precautions are a set of practices to prevent and control infection. They include the use of personal protective equipment, designed to protect health care workers and patients from contact with infectious agents.

Laboratory and health care workers can protect themselves and their patients from exposure to HIV and other infections by following standard precautions.

Often, during clinical care, it is not known whether a patient is infected or colonized with potentially pathogenic microorganisms. Every patient, and every member of staff, should therefore be considered at risk, both of infecting others and of acquiring an infection. Standard precautions should be applied during all contact between health care workers and patients, in all health care facilities at all times.

The key components of standard precautions are:

- hand washing and antisepsis (hand hygiene);
- use of personal protective equipment when handling blood, blood products, body fluids or excretions, mucous membranes, non-intact skin, or wound dressings;
- prevention of needle-stick and sharp injuries;
- appropriate handling of patient care equipment, environmental cleaning and management of spills;
- appropriate handling of waste.

Each of these components is discussed in detail below.

HAND HYGIENE

Hand hygiene is the single most important and cost-effective measure to eliminate disease-causing microorganisms that contaminate hands, and to limit the spread of infection. Proper hand hygiene can be accomplished by frequent hand washing and frequent use of an alcohol-based handrub.

In most clinical situations, an alcohol-based handrub should be used for routine hand antisepsis. Commercial handrubs, liquid soaps and skin-care products are sold in disposable containers, and may be used provided they meet recognized international standards (such as those of the American Society for Testing and Materials or the European Committee for Standardization), and are well accepted by health care workers. Where such products are not available or are too costly, an alcohol-based handrub can be produced locally at low cost.²

Clean water^a should be available for hand hygiene in all health care settings providing services related to male circumcision (screening, surgery, and follow-up). All staff should wash their hands with soap and water before starting their clinic duties, and whenever hands are visibly soiled. In addition, staff should use an alcohol-based handrub frequently, particularly before and after direct contact with each patient.

Hands should be washed or treated with a handrub:

- before and after direct contact with each patient;
- after removing gloves;
- before handling an invasive device for patient care, whether or not gloves are used;
- after contact with blood, blood products, body fluids or excretions, mucous membranes, non-intact skin, or wound dressings;
- after using the toilet (normal personal hygiene).

^a If the tap water is contaminated, use either water that has been boiled for 10 minutes and filtered to remove particulate matter, or chlorinated water (water treated with a dilute solution of sodium hypochlorite (bleach) to give a final concentration of 0.001%).

Washing hands with soap and water

The steps, procedures and technique for washing hands are shown in Fig. 8.1, which is also available as a WHO poster. If single-use disposable paper towels are not available, ensure that towels are not used more than once before laundering.

How to handwash?

WASH HANDS ONLY WHEN VISIBLY SOILED! OTHERWISE, USE HANDRUB!



WHO acknowledges the Hôpitaux Universitaires de Genève (HUG), in particular the members of the Infection Control Programme, for their active participation in developing this material.



October 2006, version 1.

Fig. 8.1 Correct hand washing technique for health care workers

Alcohol-based handrub

The steps, procedures and technique for using an alcohol-based handrub are shown in Fig. 8.2, which is also available as a WHO poster.

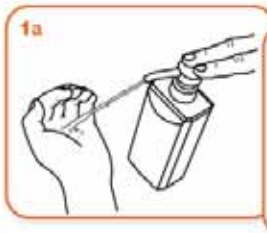
How to handrub?

Image: www.who.int

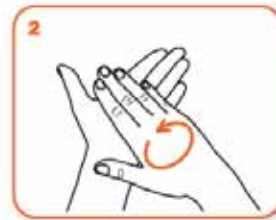
RUB HANDS FOR HAND HYGIENE! WASH HANDS ONLY WHEN VISIBLY SOILED!



Duration of the entire procedure: **20-30 sec.**



1a Apply a palmful of the product in a cupped hand and cover all surfaces.



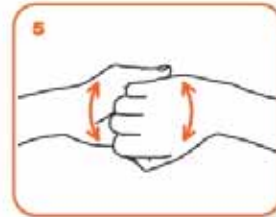
2 Rub hands palm to palm



3 right palm over left dorsum with interlaced fingers and vice versa



4 palm to palm with fingers interlaced



5 backs of fingers to opposing palms with fingers interlocked



6 rotational rubbing of left thumb clasped in right palm and vice versa



7 rotational rubbing, backwards and forwards with clasped fingers of right hand in left palm and vice versa



8 ...once dry, your hands are safe.



WHO acknowledges the Hôpitaux Universitaires de Genève (HUG), in particular the members of the Infection Control Programme, for their active participation in developing this material.



October 2006, version 1.

Fig. 8.2 Correct hand rubbing technique for health care workers

Keep in mind the following:

- Alcohol-based handrubs do not remove soil or organic matter. If hands are visibly soiled, wash them with soap and water.
- Staff who frequently wash hands or use an alcohol-based handrub should use hand lotions and creams regularly to minimize drying of the skin and reduce the risk of irritant contact dermatitis. Staff with an allergy or adverse reaction to alcohol-based handrubs should use other handrubs or soap and water.

If potentially infectious blood or other body fluid is splashed onto non-intact skin, or if there is a potentially infective percutaneous injury, do not use alcohol-based solutions or strong disinfectants; wash the affected part with water and soap, and seek advice on the need for post-exposure prophylaxis (PEP) (see page 8-16).

Surgical hand scrub

The hand scrub procedure for the surgeon is described in Chapter 4.

PERSONAL PROTECTIVE EQUIPMENT

Personal protective equipment provides a physical barrier against microorganisms, helping to prevent them from contaminating hands, eyes, clothing, hair and shoes, and from being transmitted to patients and staff.

Personal protective equipment includes gloves, masks, protective eyewear (face shield or goggles), cap or hair cover, apron, gown, and footwear (boot or shoe covers).

Personal protective equipment should be used by health care workers who provide direct care to patients, support staff, including medical aides, cleaners, and laundry staff, and family members who provide care to patients in situations where they may have contact with blood, blood products and body fluids. Laboratory staff who handle patient specimens should always use personal protective equipment.

Protective equipment that is designed for single use (e.g. disposable gloves, eyewear, masks, caps, gowns, aprons and footwear) should not be reused. It should be disposed of according to the health care facility protocol. Reusable equipment should be decontaminated according to the manufacturer's instructions or laundered according to the health care facility protocol.

Gloves

The use of gloves does not replace the need for hand hygiene by either hand rubbing or hand washing. Gloves should be worn whenever the person is likely to come into contact with blood or other potentially infectious materials, mucous membranes, or non-intact skin. Gloves should be removed

immediately after caring for a patient. Gloves should not be used for the care of more than one patient.

Change or remove gloves in the following situations: during patient care if moving from a contaminated body site to a clean body site within the same patient; after patient contact before touching another patient.

In countries with a high prevalence of hepatitis B, hepatitis C and HIV infection, wearing two pairs of gloves (double gloving) may be appropriate for surgical procedures lasting more than 30 minutes or involving contact with large amounts of blood or body fluids. This situation is not likely to apply with properly screened patients undergoing clinic-based circumcision.

Table 8.1 Gloving requirements for common tasks in a male circumcision service

Activity	Type of gloves
Checking blood pressure or temperature, giving an injection	No gloves required
Drawing blood and testing for HIV	Examination
Handling and cleaning instruments, handling contaminated waste, cleaning spills of blood or other body fluid	Utility
Surgery	Sterile surgical

Keep in mind the following:

- Wear gloves of the correct size, particularly for surgery.
- Use water-soluble (non-fat-containing) hand lotions and moisturizers, to prevent skin from drying, cracking, and chapping. Avoid oil-based hand lotions and creams, because they can damage latex rubber surgical and examination gloves.
- Keep fingernails short: they should not extend beyond the fingertip. Bacteria and other microorganisms that cause disease can collect under long nails. Long nails also tend to puncture gloves more easily.
- Store gloves in an area where they are protected from extremes of temperature.
- Glove reprocessing is strongly discouraged and should be avoided. There is currently no standardized, validated and affordable procedure for reprocessing gloves.
- Using gloves when they are not necessary represents a waste of resources.

Masks, caps and protective eyewear

Masks protect the mucous membranes of the mouth and nose from possible infections, as well as reduce the risks of transmission of infections from the health care worker. They should be worn by anyone undertaking a procedure

that is likely to generate splashes of blood, blood products and body fluids. Surgical masks are designed to resist fluids, and are preferable to cotton or gauze masks.

Caps or hair covers and eyewear, such as plastic goggles, safety glasses, face shields and visors, protect against accidental splashes, spills and leaks of blood and other body fluids.

Protective eyewear should be worn by theatre staff during circumcision surgery. Caps are recommended, but are not essential.

Aprons and the surgeon's gown

Aprons made of rubber or plastic provide a waterproof barrier to keep contaminated fluids off the health worker's clothing and skin. Staff should wear aprons when cleaning instruments and other items used for patient care.

If an apron is used, it is worn under the surgical gown. During circumcision surgery a surgeon's gown is recommended, though some surgeons prefer to use a clean or disposable apron.

Footwear

Appropriate footwear is necessary to protect the feet from injury from sharp or heavy items. Rubber boots or leather shoes provide the best protection, but must be regularly cleaned. Avoid wearing sandals, thongs, or shoes made of soft material.

Immunizations

Certain vaccines, such as hepatitis B, can be useful for protecting health care workers and laboratory staff against diseases they may be exposed to during their work.

SAFE HANDLING OF HYPODERMIC NEEDLES AND SYRINGES

All clinic staff should be trained in the safe handling of sharp instruments. Single-use autodisable syringes with integrated needles are safer because they cannot be used again, but are expensive. Hypodermic (hollow-bore) needles are the most common cause of injuries to all types of clinic workers:

- Health care workers are most often stuck by hypodermic needles during patient care.
- Cleaning staff are most often stuck by needles when washing soiled instruments.
- Housekeeping staff are most often stuck by needles when disposing of waste material.

Tips for safe use of hypodermic needles and syringes

- Disposable needles and syringes must be used only once.
- Do not disassemble the needle and syringe after use.
- Do not bend or break needles before disposal.
- Dispose of the needle and syringe together in a puncture-resistant container.

In general, it is safer to dispose of a needle and syringe directly into a sharps container without recapping. If a needle must be recapped, use the “one-handed” recapping method:

- Place the needle cap on a firm, flat surface.
- Holding the syringe with one hand, use the needle to “scoop up” the cap (see Fig. 8.3).
- With the cap over the needle tip, turn the syringe upright (vertical), so that the needle is pointing towards the ceiling.
- With the forefinger and thumb of your other hand, grasp the cap just above its open end and push it firmly down onto the hub (the place where the needle joins the syringe).

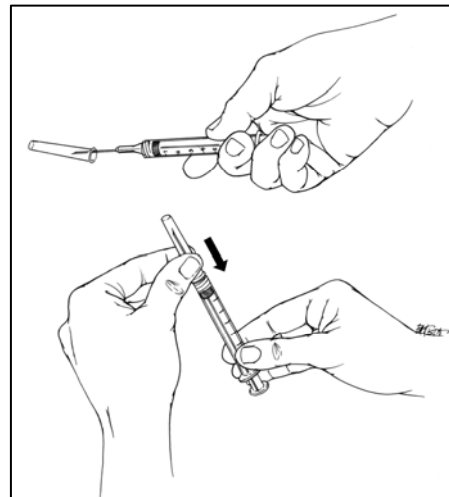


Fig. 8.3 One-handed needle recapping method

Sharps containers

Clearly labelled, puncture- and tamper-proof sharps safety boxes or containers are a key component in efforts to keep injuries from disposable sharps to a minimum.

- Place sharps containers as close to the point of use as possible and practical (ideally within arm’s reach), but away from busy areas. Avoid placing containers near light switches, overhead fans,

or thermostat controls, where people might accidentally put their hand into them.

- Attach containers to walls or other surfaces, if possible, at a convenient height, so that staff can use and replace them easily.
- Mark the container clearly, so that people will not mistakenly use it as a rubbish bin.
- Mark the fill line (at the three-quarters full level). Do not shake the container to settle its contents, to make room for more sharps.
- Never attempt to empty the sharps container.

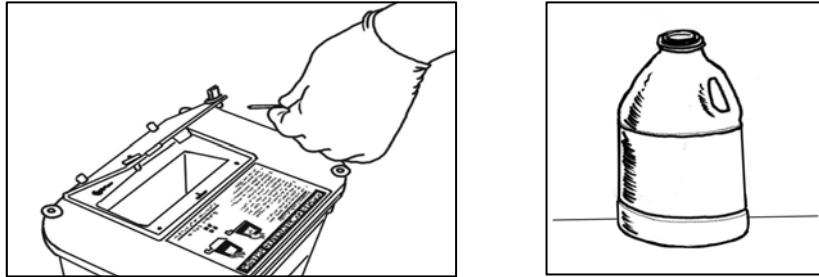


Fig. 8.4 Puncture-proof containers for disposal of sharps

PROCESSING OF INSTRUMENTS, ENVIRONMENTAL CLEANING AND MANAGEMENT OF SPILLS

Soiled instruments and other reusable items can transmit infection if they are not properly reprocessed. Effective and safe reprocessing includes disinfecting instruments and equipment immediately after use, cleaning to remove all organic matter and chemicals, and high-level disinfection or sterilization for instruments that will be used in normally sterile critical sites, i.e. within the body, in sterile tissue, cavities or the bloodstream. Before sterilization, all equipment must be disinfected and then cleaned to remove debris. Sterilization is intended to kill living organisms, but is not a method of cleaning.

Disinfection

Disinfectant solutions are used to inactivate any infectious agents that may be present in blood or other body fluids. They must always be available for cleaning working surfaces, equipment that cannot be autoclaved and non-disposable items, and for dealing with any spillages involving pathological specimens or other known or potentially infectious material.

Used instruments should routinely be soaked in a chemical disinfectant for 30 minutes before cleaning. Disinfection decreases the viral and bacterial burden of an instrument, but does not clean debris from the instrument or sterilize it. The purpose of disinfection is to reduce the risk to those who have to handle the instruments during further cleaning. Disinfection is not a sterilizing process and must not be used as a substitute for sterilization.

There are many disinfectant solutions, with varying degrees of effectiveness. In most countries, the most widely available disinfectant is sodium hypochlorite solution (commonly known as bleach or *chlorox*), which is a particularly effective antiviral solution.

Cleaning

All used instruments and equipment must be cleaned with detergent and water after disinfection and before being high-level disinfected or sterilized. Otherwise, organic matter may prevent adequate contact with the disinfectant or sterilizing agent. The organic matter may also bind and inactivate chemical disinfectants.

Instructions for manual cleaning

- Wear thick household or utility gloves.
- Wear protective eyewear, mask and plastic apron, if available, to prevent contaminated fluids from splashing into your eyes or onto your body.
- Thoroughly wash items to be cleaned with soap and clean water:
 - Use liquid soap, if available. Do not use abrasive cleaners or steel wool, especially on metal (they cause scratches and increase the risk of rusting).
 - Using a soft brush, scrub instruments under the surface of the water to prevent splashing, paying particular attention to any teeth, joints, or screws.
 - Rinse the instruments with clean water.
 - Dry the instruments with a towel or allow them to air-dry.

High-level disinfection

High-level disinfection destroys all microorganisms except some bacterial endospores. It is usually used for heat-sensitive instruments and equipment that are used in critical sites, but that cannot be sterilized. High-level disinfection is the only acceptable alternative to sterilization for heat-sensitive surgical instruments.

There is no single ideal disinfectant. Different grades of disinfectants are used for different purposes. However, glutaral (glutaraldehyde) is generally the most appropriate chemical for high-level disinfection. It must be used under very strictly controlled conditions, in a safe working environment, and the manufacturer's handling instructions must be strictly followed.

Sterilization

Sterilization is the destruction of all microorganisms, including bacterial endospores. Sterilization can be achieved by either physical or chemical methods. Sterilization is necessary for medical devices that will be used in sterile body sites.

Sterilization can be done using:

- high-pressure steam (autoclave) or dry heat (oven);
- chemicals, such as ethylene oxide or formaldehyde;
- radiation.

Sterilization of all surgical instruments and supplies is crucial in preventing HIV transmission. All viruses, including HIV, are inactivated by high-pressure steam sterilization (autoclaving) for 20 minutes at 121–132°C, or for 30 minutes if the instruments are in wrapped packs.

Items that have been sterilized need to be properly stored, to ensure that they do not become recontaminated.

- The storage area should be clean, dry, and free of dust and lint.
- The temperature should be kept at approximately 24 °C, and the relative humidity at less than 70%, if possible.
- Sterile packs and containers should be stored 20–25 cm off the floor, 45–50 cm from the ceiling and 15–20 cm from an outside wall.
- Do not use wooden or cardboard boxes for storage of sterile items, as they shed dust and debris and may harbour insects.
- Mark the date of sterilization on the package, and use the oldest packages first – “first in, first out”. Dates serve as an indicator of when packs should be used, but do not guarantee the sterility of the packs.

Environmental cleaning

Routine cleaning is important to ensure a clean and dust-free clinic environment. Visible dirt usually contains many microorganisms, and routine cleaning helps to eliminate such dirt. Administrative and office areas with no patient contact should be cleaned regularly in the same way as other offices. Most patient care areas should be cleaned by wet mopping; dry sweeping is not recommended. Hot water (80°C) is a useful and effective environmental cleaner. The use of a detergent solution improves the quality of cleaning.

All horizontal surfaces and all toilet areas should be cleaned daily. The operating table and instrument trolley should be cleaned with detergent and water between cases.

Management of spills

Any area that is visibly contaminated with blood or body fluids should be cleaned immediately with detergent and water. After cleaning, disinfect the area with 0.5% sodium hypochlorite solution.

SAFE DISPOSAL OF INFECTIOUS WASTE MATERIALS

Waste management

The purpose of waste management is to:

- protect people who handle waste items from accidental injury;
- prevent the spread of infection to health care workers and the local community.

Tips for safe handling and disposal of infectious waste

- Place all waste in plastic or galvanized metal containers, with tightly fitting colour-coded covers that differentiate infectious from non-infectious waste.
- Place all disposable sharps in designated puncture-resistant containers.
- Place waste containers close to where the waste is generated, in a position that is convenient for users.
- Ensure that equipment used to hold and transport wastes is not used for any other purpose.
- Regularly wash all waste containers with a disinfectant solution (0.5% sodium hypochlorite solution), then wash with soap, rinse with water and allow to air-dry.
- When possible, use separate containers for waste that will be treated or that will be disposed of in a particular manner. In this way, workers will not have to handle and separate waste by hand.

When patients are being cared for at home, contaminated waste, such as dressings and other items that may have been in contact with blood or other body fluids, can be buried in a covered pit or burned in a drum incinerator in the yard.

Disposing of sharp items

Disposable sharp items, such as hypodermic needles, require special handling. They are the items most likely to injure the health care workers who handle them. If these items are disposed of in a municipal landfill, they become a danger to people in the community.

Step 1. Do not recap a used hypodermic needle or disassemble the needle and syringe.

Step 2. Place the needle and syringe in a puncture-resistant sharps container. The opening should be large enough to allow items to be dropped through it easily, but small enough to prevent anything being removed from inside.

Step 3. When the container is three-quarters full, dispose of it.

When disposing of the sharps container:

Step 1. Wear heavy-duty utility gloves.

Step 2. Cap, plug, or tape the opening of the container tightly closed. Make sure that no sharp items are sticking out of the container.

Step 3. Dispose of the sharps container by burning, encapsulating, or burying it.

Step 4. Remove utility gloves.

Step 5. Wash hands and dry them with a clean cloth or towel or allow to air-dry.

Burning waste containers

Burning destroys the waste and kills any microorganisms, and is the best method of disposing of contaminated waste. It reduces the bulk volume of waste and also ensures that items cannot be scavenged and reused.

Encapsulating waste containers

Encapsulation is the easiest way to safely dispose of sharps containers. When the container is three-quarters full, pour cement (mortar), plastic foam, clay or other similar material into the container until it is completely full. After the material has hardened, seal the container and dispose of it in a landfill or bury it.

Burying waste

In health care facilities with limited resources, burial of waste (such as excised foreskins) near the facility may be the only practical option for waste disposal. To limit health risks and environmental pollution, some basic rules should be followed:

- Restrict access to the disposal site. Build a fence around the site to keep animals and children away.
- Line the burial site with a material of low permeability (e.g., clay), if available.
- Select a site at least 50 meters away from any water source to prevent contamination of the water table.
- Ensure that the site has proper drainage, is located downhill from any wells, is free of standing water, and is not in an area that floods.

POST-EXPOSURE PROPHYLAXIS

Health care workers may be accidentally exposed to blood and other body fluids that are potentially infected with HIV, hepatitis virus or other bloodborne pathogens. Occupational exposure may occur through direct contact of non-intact skin with potentially infected blood or body fluids, from splashes into the eyes or mouth, or through injury with a used needle or sharp instrument. Post-exposure prophylaxis (PEP) can help prevent the transmission of pathogens after such a potential exposure.

Managing occupational exposure to hepatitis B, hepatitis C and HIV

The immediate response to exposure to blood or other fluids that are potentially infected with hepatitis B virus (HBV), hepatitis C virus (HCV) or HIV is as follows.

Step 1. Provide immediate first aid care to the exposure site:

- If a splash or a spill occurs on the skin, wash the area immediately with soap and water. Do not use caustic agents, alcohol or bleach, because they will irritate the skin and may increase the risk of infection. Do not apply a dressing.
- If a splash or a spill occurs in the eyes, the nose, the mouth, or on any mucous membrane, rinse the area with clean water for at least 10 minutes.
- If an injury has been caused by a potentially contaminated sharp, wash the area with soapy water, and allow the wound to bleed freely for a few minutes if possible. Then give normal first aid.

Step 2. Evaluate the risk by determining the type of fluid (blood, visibly bloody fluid, or other potentially infectious fluid), the severity and type of exposure (percutaneous or needle stick, mucous membranes, intact or non-intact skin), and the source of infection.

Step 3: If the source person is identified, it is important to try to obtain information on his or her hepatitis and HIV serostatus and, if positive, an evaluation of the clinical status and treatment history.

- Assess the risk of infection, using available information.
- The source person may be tested only with his or her informed consent.
- Do not test discarded needles or syringes for virus contamination.

Management of exposure to hepatitis B

The medical response to exposure to hepatitis B virus (HBV) depends on the patient's immune status, as determined by the history of hepatitis B vaccination and vaccine response, and whether the exposure poses a risk of infection. Transmission of HBV may occur

following percutaneous injury, or contamination of mucous membranes or non-intact skin. The virus does not cross intact skin. HBV post-exposure prophylaxis is safe for pregnant and breastfeeding women.

Table 8.2. Recommendations for HBV post-exposure prophylaxis, according to immune status of exposed person

HBV immune status	Post-exposure prophylaxis
Unvaccinated	HBV vaccination and HB immunoglobulin (HB Ig)
Previously vaccinated, known responder (anti-hepatitis B surface antigen positive)	None
Previously vaccinated, known non-responder	HBV vaccination and HB Ig
Antibody response unknown	Test. If antibody response is poor, give HB vaccination and HB Ig

People who receive hepatitis B vaccine should be tested for anti-hepatitis B surface antigen 1–2 months after the last dose. Note that the anti-hepatitis B surface antigen response to vaccine cannot be ascertained if the person was given HB Ig in the previous 3–4 months.

Management of exposure to hepatitis C

- There is no post-exposure prophylaxis regimen for hepatitis C virus (HCV).
- Evaluate the person who has been exposed to hepatitis C virus by performing a baseline test for anti-HCV antibodies and alanine aminotransferase (ALAT).
- Perform follow-up testing for anti-HCV antibodies and ALAT 4–6 months after exposure.
- Repeatedly reactive anti-HCV enzyme immunoassays should be confirmed with supplemental tests.
- Any person who is found to have HCV antibodies should be referred to a specialist for care.

Post-exposure prophylaxis for HIV³

Post-exposure prophylaxis for HIV is a set of comprehensive actions aimed at preventing infection in the exposed person. It includes first aid care, counselling and risk assessment, HIV testing following informed consent, and – depending on the risk assessment – the provision of a short course (28 days) of antiretroviral drugs, with follow-up and support.

Step 1. First aid

Provide immediate first aid care for the exposure site, as described above.

Step 2. Report and evaluation

After the incident, the exposed person should be referred to a trained service provider, who can give counselling, evaluate the risk of HIV transmission having occurred, and decide on the need to prescribe antiretroviral (ARV) medications to prevent HIV infection. The incident should be reported for further evaluation, according to national requirements regarding recording and notification of occupational injuries and diseases.

The recommendation for HIV post-exposure prophylaxis is based on an evaluation of the risk of infection according to the type of exposure and the HIV status of the source (see Table 8.3).

Table 8.3. Recommendations for HIV post-exposure prophylaxis

Type of exposure	Source known HIV-positive	Source of unknown HIV status	Source known HIV-negative
Percutaneous, severe (e.g. injury with large hollow-bore needle, deep puncture, visible blood on device, needle used in artery or vein)	Two-drug regimen ^a	Consider HIV prevalence in population or subgroup	PEP not recommended, unless there is risk that source is in window period ^c
Percutaneous, not severe (e.g. injury with small-bore or solid needle, superficial injury)	Two-drug regimen ^a	PEP not recommended	PEP not recommended
Splash on non-genital mucous membrane or non-intact skin, severe (e.g. exposure to large volume of blood or semen)	Two-drug regimen ^a	Consider HIV prevalence in population or subgroup	PEP not recommended, unless there is risk that source is in window period
Splash on non-genital mucous membrane or non-intact skin, not severe (e.g. exposure to small volume of blood or semen, or to less infectious fluid, such as cerebrospinal fluid)	PEP not recommended; two-drug regimen if circumstances require ^b	PEP not recommended	PEP not recommended

^a Three drugs are recommended in certain settings; see discussion on choice of regimen in text.

^b Although PEP is not recommended, it is inappropriate to withhold PEP if the exposed person insists. In this case the two drug regimen is given.

^c Recent HIV infection not detected with antibody test

Post-exposure prophylaxis is **not** indicated:

1. if the exposed person is already HIV-positive from a previous exposure;
2. in the context of chronic exposure (e.g. repeated exposure to HIV from unprotected sexual intercourse with a known HIV-positive partner);
3. if the exposure poses no risk of transmission, e.g.:
 - exposure of *intact skin* to potentially infectious body fluids;
 - exposure to *non-infectious body fluids* (faeces, saliva, urine, sweat);
 - exposure to body fluids from a person known to be HIV-negative, unless the source person is identified as being at high risk of having been recently infected and currently within the window period for seroconversion.

Step 3. Testing and counselling

- If testing is available, the exposed person should be offered the chance to be tested for HIV and receive appropriate counselling. The person should always have the choice to refuse testing.
- Do not delay starting ARVs for PEP while waiting for HIV test results. The exposed person could start taking ARVs for PEP immediately, and stop the treatment if the test results reveal that he or she is already HIV-positive.
- Antiretroviral drugs for PEP should be started as soon as possible and in any case within 72 hours after exposure.
- The drugs should be taken continuously for 28 days.
- Each circumcision clinic should either have the necessary drugs in stock or know where they can be obtained, so that treatment can be started within 72 hours.
- Whenever possible, the source patient should also be tested, with his or her informed consent. If the test results show that the source person is negative, PEP can be stopped.
- Counselling should include provision of information on the importance of adhering to treatment, and information on HIV prevention in general and in the workplace. The person should be advised to use condoms, and not to donate blood or organs for up to 6 months after exposure.
- Women of childbearing age should be advised to use contraception, and alternatives to breastfeeding should be discussed with women currently feeding their infants. There is a high risk of transmitting HIV to the infant if the mother becomes infected during breastfeeding.

Step 4. Antiretroviral medications for post-exposure prophylaxis

If national guidelines on post-exposure prophylaxis exist, these should be followed. If not, WHO recommendations may be applied. WHO recommends a two-drug PEP regimen, unless there is suspicion or evidence of drug resistance. The standard PEP regimen consists of two nucleoside reverse transcriptase inhibitors (NRTIs). The possible regimens are given in Table 8.4.

Table 8.4 Recommended two-drug PEP regimens^a

Preferred regimens	zidovudine (ZDV) + lamivudine (3TC), or stavudine (d4T) + 3TC
Alternative regimens	tenofovir disoproxil fumarate (TDF) + 3TC, or TDF + emtricitabine (FTC) ^a

^a These combinations are currently commercially available as fixed-dose combinations.

Note that non-NRTIs are not recommended for PEP. In regions where the prevalence of drug resistance is above 15%, or when there is suspicion that the virus could be resistant to one or more of the drugs included in the standard PEP regimen, a third drug – a protease inhibitor – should be added to the two chosen NRTIs. In this situation, it is recommended to consult an HIV expert.

Table 8.5 Recommended three-drug PEP regimens^a

Preferred regimens	ZDV + 3TC + LPV/r
Alternative regimens	<ol style="list-style-type: none"> 1. ZDV + 3TC + SQV/r or ATV/r or FPV/r 2. TDF + 3TC + SQV/r or ATV/r or FPV/r 3. TDF + FTC + SQV/r or ATV/r or FPV/r 4. d4T + 3TC + SQV/r or ATV/r or FPV/r

^a ZDV: zidovudine; 3TC: lamivudine; LPV/r: lopinavir/ritonavir; SQV/r: saquinavir/ritonavir; ATV/r: atazanavir/ritonavir; FPV/r: fosamprenavir/ritonavir; d4T: stavudine; TDF: tenofovir; FTC: emtricitabine.

- Women of childbearing age not using reliable contraception should not be prescribed medications such as the combination didanosine + stavudine. They should be offered a pregnancy test before starting the PEP regimen.
- Lactating women should be aware that ARVs are excreted in breast milk, and that the virus itself can be transmitted during breastfeeding
- When and where safe and feasible, alternative feeding options should be discussed with breastfeeding mothers.

Step 5. Follow-up and testing

Follow-up visits should aim to support the person's adherence to PEP, prevent or treat side-effects of the medicines, and detect seroconversion, if it occurs. The following steps are recommended:

- There should be regular follow-up for the first six weeks after starting PEP to support good adherence.
- Perform HIV-antibody testing at baseline, 6–12 weeks and six months after exposure.
- Perform HIV-antibody testing if the person develops any illness compatible with an acute retroviral syndrome.
- Advise exposed persons to take precautions to prevent secondary transmission during the follow-up period. This includes:
 - avoiding pregnancy and seeking safe alternatives to breastfeeding;
 - avoiding donating blood, tissue or sperm;

- using condoms during sexual intercourse, until the test at six months confirms that the exposed person remains seronegative.
- Evaluate exposed persons taking PEP within 72 hours after exposure and monitor for drug adherence and possible drug-related side-effects and toxicity for at least two weeks.
- If the person develops HIV antibodies, he or she should be referred for treatment, care and support.

The incident report and the evaluation of the risk of exposure (see Step 2) should also lead to quality control and evaluation of working safety conditions. Appropriate correctional measures (such as strengthening adherence to standard precautions, if relevant) should be taken to prevent other exposures to HIV and other bloodborne pathogens

Clinic staff should know their HIV status

It is advisable for all clinic staff who carry out surgical procedures to have an HIV test at periodic intervals, in accordance with national HIV testing guidelines. If a health care worker is known to have recently had a negative HIV test, then post-exposure prophylaxis can be started immediately, if relevant, following exposure to potentially infected blood. In addition, health care workers would be showing leadership in the context of national campaigns to increase awareness of HIV status.

REFERENCES

- ¹ World Health Organization. *Sharp injuries*. Geneva; 2005 (Environmental Burden of Diseases Series, No. 11).
- ² World Alliance for Patient Safety. A WHO alcohol-based formulation. In: *WHO guidelines on hand hygiene in health care (advanced draft)*. Geneva, WHO; 2006 (WHO/EIP/SPO/QPS/05.2; <http://www.who.int/patientsafety/en/>).
- ³ World Health Organization/International Labour Organization. *Post-exposure prophylaxis to prevent HIV infection: Joint WHO/ILO guidelines on post-exposure prophylaxis (PEP) to prevent HIV infection*. World Health Organization, Geneva; 2007.

Chapter 9

MANAGING A CIRCUMCISION SERVICE

Summary

- The manager of a clinic circumcision service has a number of roles. These include ensuring quality of services, making sure that good quality records are kept, monitoring and evaluating the programme, and carrying out supportive supervision.
- To meet these responsibilities, the clinic manager must set the desired levels of performance for the services provided, assess current levels of performance, work with other clinic staff to analyse the causes of inadequate performance and find solutions for identified problems.

RECORD-KEEPING, MONITORING AND EVALUATION

The clinic manager should ensure that the health care providers maintain adequate records on all clients. Records should include information on the identity of the client, the type of service provided, and any special circumstances associated with it. Sample record forms to assist this task are given in Appendices 9.1 (stock card), 9.2 (stock-taking card for consumables), 9.3 (adverse event form) and 9.4 (register).

A more detailed account of indicators and monitoring and evaluation of male circumcision programmes is given in the WHO/UNAIDS publication *A guide to indicators for male circumcision programmes in the formal health care system*, which can be downloaded from the Clearinghouse on Male Circumcision for HIV prevention (www.malecircumcision.org).

Indicators

Health care facility managers need detailed information to allow them to make decisions about how best to use scarce resources. They might want to know the answers to questions such as:

- Are we reaching our target audience?
- Can we provide the necessary services (for example, do we have the appropriate equipment, staff and medications)?
- Are our services of high quality (for example, do they meet national and international standards)?
- Do our services meet the needs of our clients?
- Are we referring clients who need it?

For each question, managers should develop one or more indicators to monitor the services or the impact of changes. For example, to assess the quality of the circumcision service provided, an appropriate

indicator might be the percentage of male circumcision clients who are re-admitted or referred for management of an adverse event.

Answering these questions depends on careful record-keeping by staff who understand the purpose of the records.

What is monitoring?

Monitoring is the routine assessment (e.g. daily, monthly, quarterly) of information or indicators related to ongoing activities.

Monitoring helps to:

- track progress towards the programme targets or performance standards; and
- identify aspects of the programme that are working according to plan and those that are in need of adjustment.

What is evaluation?

Evaluation is the measurement of how much things have changed as a result of the interventions implemented.

There are, of course, many factors that can cause things to change. A formal evaluation tries to demonstrate how much a specific intervention contributed to an observed change.

Why evaluate male circumcision programmes?

The purpose of evaluating a male circumcision programme is to:

- assess progress made at particular points in time;
- assess progress towards objectives;
- provide feedback on whether targets are being met;
- identify reasons for successes and failures; and
- provide a basis for future planning.

What is a monitoring system?

Collecting information to track indicators requires the collaboration of dedicated and knowledgeable staff. Obtaining and reporting the required information represent an extra burden of work, and may even be impossible unless an effective monitoring system is in place. This implies:

- All those involved know what information is needed and by whom.
- The tools needed to collect the information are available.
- All those involved know how and when to report the information.
- One person is responsible for making sure the system is working, i.e. that indicators are up to date, that records are being properly kept, and that data are reported to appropriate partners.

The person responsible for the monitoring system must keep clinic staff informed about what needs to be recorded and reported. He or she must also adjust monitoring tools to reflect the information required.

Monitoring performance in male circumcision programmes

Fig. 9.1 is a graphic representation of how monitoring through routine data collection can help identify how programme performance (represented by the thick arrow) relates to programme objectives, using as an example the cumulative number of circumcisions performed per month.

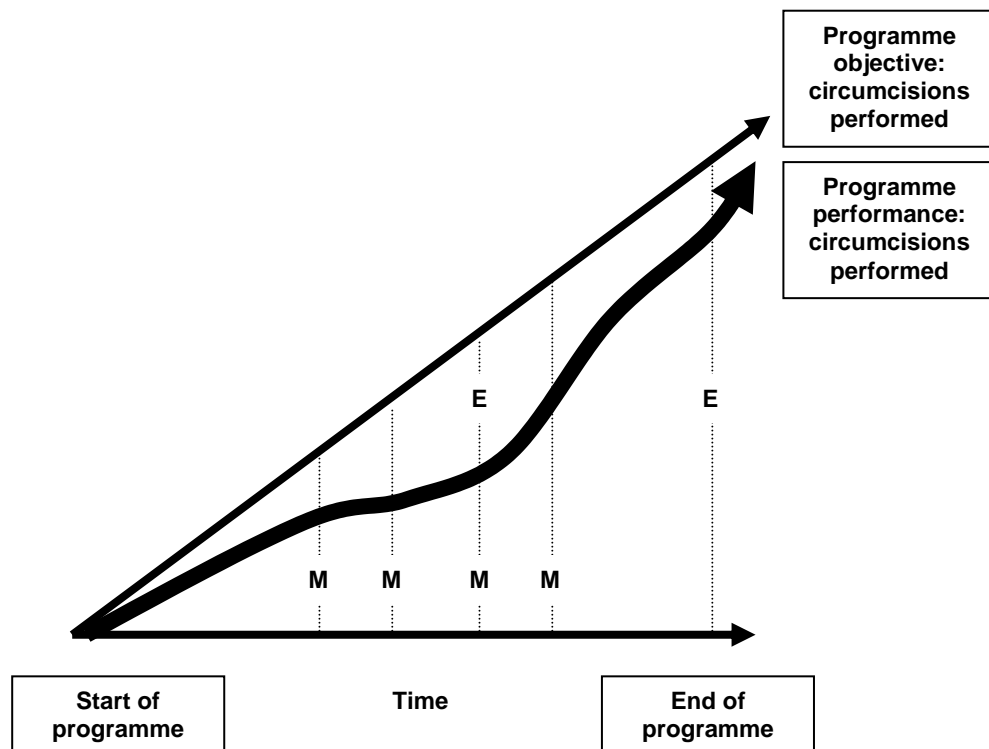


Fig. 9.1. Monitoring and evaluation of programme performance in relation to programme objectives

Evaluation

Evaluation can be done by:

- reviewing available records and reports (client record forms, clinic register, theatre register, adverse events forms, drug inventory forms, referral forms, etc.);
- conducting supervisory assessments;
- having staff conduct self-assessments;
- conducting peer assessments;
- obtaining feedback from clients (e.g. through exit interviews);
- surveying community perceptions of the service;
- comparing the clinic's services with those of other facilities.

What are “good data”?

A monitoring system will provide useful information only if the data recorded are “good”. Clinic managers should ensure that staff are aware of the following:

- **Understanding the data.** Staff responsible for keeping records should know exactly what information is needed, for example, adverse events associated with male circumcision.
- **Recording the data every time.** Every time a staff member performs a procedure, sees a client, prescribes medication, receives a test result, or makes a referral, it should be recorded on the appropriate form.
- **Recording all the data.** All the information requested on the monitoring forms should be completed. This might require noting when a particular treatment was **not** provided.
- **Recording the data in the same way every time.** The same definitions, rules, and tests should always be used for reporting the same piece of information. In the long term, this may not be possible, as tests and definitions change, treatment evolves and new technologies are developed. When it is not possible to record data in the same way, a note should be made describing the change.

It is not the role of clinicians (surgeons or medical, clinical and nursing officers) to develop a functional monitoring system for the facility. That is the role of the health planner or clinic manager. However, the clinicians need to know who is responsible for the monitoring system, to record data accurately and reliably, and to know how and when to report information related to the service or to patients.

Clinicians can also help those responsible for the system by providing feedback about how the system is working, how information is shared with other clinicians, and how easy the various forms are for clinicians to complete accurately and reliably. In this way, the monitoring system to be as accurate and reliable as possible.

Using monitoring information for intervention-related decision-making

In the context of record-keeping and monitoring, information is good only if it can be used. Data that cannot be used should not be collected.

QUALITY ASSURANCE

Quality assurance is the assessment or measurement of the quality of care and services and the implementation of any necessary changes to either maintain or improve the quality of care rendered. Quality assurance has also been defined as a systematic process for closing the gap between actual performance and desirable outcomes.

The quality of male circumcision services can be defined through the development and communication of standards. Quality can then be measured by determining whether the standards are being met. Various methods can be used to measure quality, e.g. self-assessment, peer assessment and external assessment. Quality improvement methodology can be used to continuously improve the quality of male circumcision care and services.

WHO has developed a comprehensive guide to quality assurance¹ for male circumcision programmes. The guide defines ten service standards that each programme should meet (Box) and includes the essential competences for male circumcision service provision. In addition it outlines the process of quality assessment and includes guidance for facility managers and staff. The guide is supplemented by a toolkit² to assist managers and staff assess the quality of services.

Recommended male circumcision service standards

1. An effective management system is established to oversee the provision of male circumcision services.
2. A minimum package of male circumcision services is provided.
3. The facility has the necessary medicines, supplies, equipment and environment for providing safe male circumcision services of good quality.
4. Providers are qualified and competent.
5. Clients are provided with information and education on HIV prevention and male circumcision.
6. Assessments are performed to determine the condition of clients.
7. Male circumcision surgical care is delivered according to evidence-based guidelines.
8. Infection prevention and control measures are practised.
9. Continuity of care is provided.
10. A system for monitoring and evaluation is established.

SUPERVISION

Traditional approaches to supervision emphasize inspecting facilities and checking individual performance. They focus on finding fault or errors, and sanctioning those responsible, or thought to be responsible. This type of supervision often causes negative feelings and rarely results in an improved service.

In contrast, supervision for performance and quality improvement focuses on:

¹ World Health Organization. *Male circumcision quality assurance: a guide to enhancing the safety and quality of services*. Geneva, World Health Organization, 2008 (available at www.malecircumcision.org)

² World Health Organization. *Male circumcision services quality assessment toolkit*. Geneva, World Health Organization, 2009 (available at www.malecircumcision.org)

- the **goal** of providing high-quality health services;
- a **style** of encouraging, inclusive and supportive interaction; and
- a **process** of continuous performance and quality improvement.

The goal

The goal of supervision is to promote and maintain the delivery of high-quality health services. In a traditional system of supervision, this goal is often lost, or at least is not apparent to those being supervised. By clearly stating that the goal of supervision is the delivery of high-quality health care services, the supervisor can transform the sometimes negative impression of supervision into a positive one.

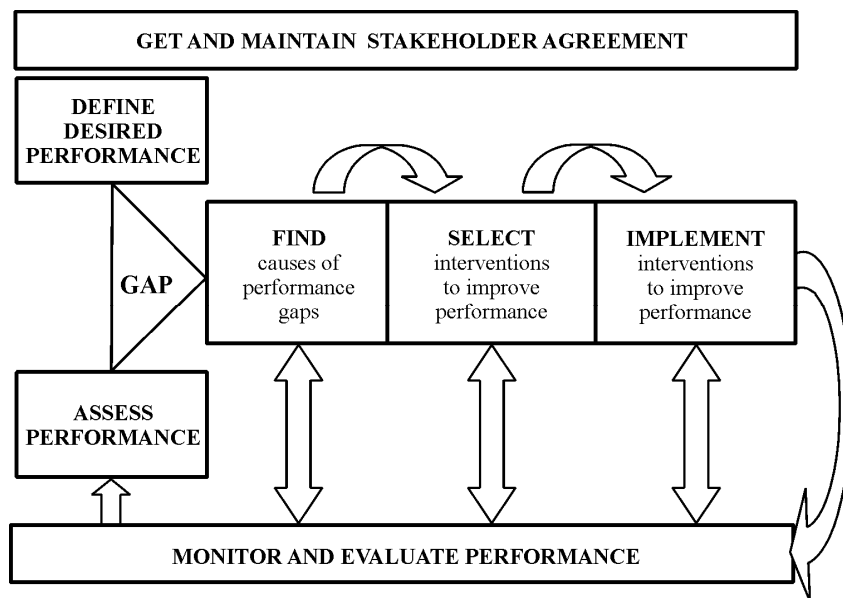
The style

Supervision for performance and quality improvement should be done in a style that involves as many stakeholders as possible, achieves results through teamwork, and provides constructive and useful feedback. The underlying assumption is that people work better when they actively participate and are listened to, treated well, encouraged to do a good job, and recognized for a job well done.

The process

Supervisors can use the step-by-step process of performance and quality improvement presented here to help achieve a high-quality service. The process is illustrated in Fig. 9.2.

The process involves a cycle of logical steps, which are repeated until the desired performance is achieved. The cycle can be used to solve any type of performance problem, for instance involving infection prevention practices, management of stocks, or counselling.

Figure 9.2 The performance and quality improvement process³

The performance and quality improvement process involves the following steps.

- **Define desired performance.** In order for people to perform well, they must know what they are expected to do. Performance standards need to be set. Staff must know not only what their duties are, but also how they are expected to perform them. The desired performance should be realistic and based on common goals, the expectations of the community and the resources available. Examples of desired performance standards related to male circumcision are:
 - All clients over the age of 18 years must complete a written informed consent form before undergoing male circumcision.
 - Instruments used during a male circumcision procedure must be decontaminated in 0.5% sodium hypochlorite solution for 10 minutes before being cleaned and sterilized.
 - All clients undergoing male circumcision (and/or their parents) should be counselled about HIV.
- **Assess performance.** The team should continually assess its own performance in relation to how it is expected to perform. This assessment can be done on a continuous basis informally, or more formally at periodic intervals, by monitoring specific activities and steps, conducting self-assessments or obtaining feedback from clients. Using the above desired standards as examples, performance assessment may show the following:
 - 76% of clients over the age of 18 years completed a written informed consent form before undergoing male circumcision (a gap of 24%).
 - Instruments used during male circumcision procedures were decontaminated in 0.5% sodium hypochlorite solution for 10

³ Adapted from: Performance improvement framework, developed through a collaborative effort by members of the Performance Improvement Consultative Group (PICG).

minutes before being cleaned and sterilized 50% of the time (a gap of 50%).

- 36% of clients undergoing male circumcision (and/or their parents) were counselled about HIV (a gap of 74%).
- **Find the causes of performance gaps.** A performance gap means that what is occurring does not meet the performance standards that have been set. If this is found to be the case, the manager needs to explore with staff why the gap is occurring. Sometimes the reasons for poor performance are not immediately obvious, and it may take some time to find the real cause. For example, if 74% of clients undergoing male circumcision are not being counselled about HIV infection, analysis of the gap may reveal the following possible causes:
 - shortage of staff (especially counsellors and nurses);
 - a high client load;
 - no space in the clinic for counselling clients;
 - a shortage of test kits for HIV;
 - staff not aware of facility policy; or
 - no one in the facility has been trained in counselling and testing.
- **Select and implement interventions to improve performance.** Once the causes of the performance gap have been determined, the manager and staff will need to identify, put in order of priority, plan and implement interventions to improve performance. These interventions can be directed at improving the knowledge and skills of staff, or the environment and support systems. Many different types of interventions can improve worker performance. To make the best use of resources, it is important to select the most appropriate ones.
- **Monitor and evaluate performance.** Once an intervention has been implemented, it is important to determine whether it has had the desired result. In other words, did the intervention lead to improved performance? Did the team come closer to meeting established standards? If not, the team will need to look again at what is hindering performance, to make sure that the interventions were targeted at the real cause of the performance gap. If performance has improved, it is important to continue monitoring to make sure that the level of performance is maintained.

Appendix 9.1: SAMPLE STOCK CARD

Product: e.g. 1% plain lidocaine				
Expiry dates:				
Cost per item:				
Selling price (if applicable):				
Re-order level:				
Date	In	Out	Balance	Comments

Appendix 9.3: SAMPLE MALE CIRCUMCISION ADVERSE EVENT FORM

1. Client's name: _____

2. a: Date of visit: / / (dd/mm/yy)

 b: Date of circumcision: / / (dd/mm/yy)

3. Patient's ID Number:

M	C
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Instructions: Check (✓) appropriate box for any adverse events

Adverse event	Description	Severity	✓
A. During surgery			
Pain	3 or 4 on pain scale	Mild	
	5 or 6 on pain scale	Moderate	
	7 on pain scale	Severe	
Excessive bleeding	More bleeding than usual, but easily controlled	Mild	
	Bleeding that requires pressure dressing to control	Moderate	
	Blood transfusion or transfer to another facility required	Severe	
Anaesthetic-related event	Palpitations, vaso-vagal reaction or emesis	Mild	
	Reaction to anaesthetic requiring medical treatment in clinic, but not transfer to another facility	Moderate	
	Anaphylaxis or other reaction requiring transfer to another facility	Severe	
Excessive skin removed	Adds time or material needs to the procedure, but does not result in any discernible adverse condition	Mild	
	Skin is tight, but additional operative work not necessary	Moderate	
	Requires re-operation or transfer to another facility to correct the problem	Severe	
Damage to the penis	Mild bruising or abrasion, not requiring treatment	Mild	
	Bruising or abrasion of the glans or shaft of the penis requiring pressure dressing or additional surgery to control	Moderate	
	Part or all of the glans or shaft of the penis severed	Severe	

Treatment provided: _____

Treatment outcome: Adverse event completely resolved

Adverse event partially resolved

Adverse event unchanged

Was patient referred? Yes No If yes, to where _____

Adverse event	Description	Severity	√
B. < 1 month after surgery			
Pain	3 or 4 on pain scale	Mild	
	5 or 6 on pain scale	Moderate	
	7 on pain scale	Severe	
Excessive bleeding	Dressing soaked through with blood at a routine follow-up visit	Mild	
	Bleeding that requires a special return to the clinic for medical attention	Moderate	
	Bleeding that requires surgical re-exploration	Severe	
Excessive skin removed	Client concerned, but there is no discernable abnormality	Mild	
	Skin is tight, but additional operative work not necessary	Moderate	
	Requires re-operation or transfer to another facility	Severe	
Insufficient skin removed	Foreskin partially covers the glans only when extended	Mild	
	Foreskin still partially covers the glans and re-operation is required	Moderate	
Swelling or haematoma	More swelling than usual, but no significant discomfort	Mild	
	Significant tenderness and discomfort, but surgical re-exploration not required	Moderate	
	Surgical re-exploration required	Severe	
Damage to the penis	Mild bruising or abrasion, not requiring treatment	Mild	
	Bruising or abrasion of the glans or shaft of the penis requiring pressure dressing or additional surgery	Moderate	
	Part or all of the glans or shaft of the penis severed	Severe	
Infection	Erythema more than 1 cm beyond incision line	Mild	
	Purulent discharge from the wound	Moderate	
	Cellulitis or wound necrosis	Severe	
Delayed wound healing	Healing takes longer than usual, but no extra treatment necessary	Mild	
	Additional non-operative treatment required	Moderate	
	Requires re-operation	Severe	
Appearance	Client concerned, but no discernible abnormality	Mild	
	Significant wound disruption or scarring, but does not require re-operation	Moderate	
	Requires re-operation	Severe	
Problems with urinating	Transient complaint that resolves without treatment	Mild	
	Requires a special return to the clinic, but no additional treatment required	Moderate	
	Requires referral to another facility for management	Severe	

C. ≥ 1 month after surgery			
Infection	Erythema more than 1 cm beyond incision line	Mild	
	Purulent discharge from the wound	Moderate	
	Cellulitis or wound necrosis	Severe	
Delayed wound healing	Healing takes longer than usual, but no extra treatment necessary	Mild	
	Additional non-operative treatment required	Moderate	
	Requires re-operation	Severe	
Appearance	Client concerned, but no discernible abnormality	Mild	
	Significant scarring or other cosmetic problem, but does not require re-operation	Moderate	
	Requires re-operation	Severe	
Excessive skin removed	Client concerned, but there is no discernible abnormality	Mild	
	Skin is tight, but additional operative work not necessary	Moderate	
	Requires re-operation or transfer to another facility	Severe	
Insufficient skin removed	Foreskin partially covers the glans only when extended	Mild	
	Foreskin still partially covers the glans and re-operation is required to correct	Moderate	
Torsion of penis	Torsion is observable, but does not cause pain or discomfort.	Mild	
	Causes mild pain or discomfort, but additional operative work not necessary	Moderate	
	Requires re-operation or transfer to another facility	Severe	
Erectile dysfunction	Client reports occasional inability to have an erection	Mild	
	Client reports frequent inability to have an erection	Moderate	
	Client reports complete or near complete inability to have an erection	Severe	
Psychobehavioural problems	Client reports mild dissatisfaction with the circumcision, but no significant psychobehavioural consequences	Mild	
	Client reports significant dissatisfaction with the circumcision, but no significant psychobehavioural consequences	Moderate	
	Significant depression or other psychological problems attributed by the client to the circumcision	Severe	

Treatment provided: _____

Was patient referred? Yes No If yes, to where _____
and when _____

Treatment outcome: Adverse event completely resolved
Adverse event partially resolved

Adverse event unchanged

In your clinical judgement, was this adverse event:

Related to male circumcision

Not related to male circumcision

Other comments:

Date: _____ Name of health care provider: _____

For more information, please contact:

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