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TRADITIONAL CIRCUMCISION

Part II: Understanding the pathogenesis of gangrenous lesions

Vincent Shaw is married to Helen, and they have three sons aged 14, 12 and 10 years. They enjoy living in Queenstown because of the quality of family life that a smallish town affords. They all enjoy participating in outdoor activities and often hike and cycle together. In addition, Vincent enjoys woodwork, running and sailing. The Shaw family moved to Queenstown in 1988 from Namibia, where Vincent had spent his houseman year in 1984.

While in Namibia, Vincent spent a number of years in hospital practice and later in private practice. He obtained the DA(SA) in 1986 and the DCH(SA) in 1988. In Queenstown he joined a three-man practice. Two years later he rejoined the public sector to practice first at Hewu Hospital in the former Ciskei, and later in a clinic based post in Queenstown. It was while developing the primary health care service in and around Queenstown that Vincent

completed his MFamMed degree in 1994, and became convinced that the future of an efficient primary care service was rooted in the principles of family medicine. He is involved in the training of primary health care nurses working in remote rural areas, and in the development of systems to support nurses and doctors working in remote and isolated areas. His research interests are on the use of participatory research methods to help communities develop.

Summary

In Part I of this article we looked at the presentation of a patient who had undergone a traditional circumcision. The context of his illness was discussed in terms of the traditional practices of the Xhosa nation, and a three-stage diagnosis was made. In this part we look at the pathogenesis of the lesions that we see, and how they present clinically. We can place the development of complications into three groups, namely dehydration, septicaemia and gan-

grene. I have rather chosen to focus here on the pathogenesis of gangrenous lesions and a description of the roles a number of factors play in this process. A strategy has been developed for dealing with these issues and this is discussed.

Lastly, the management of problems related to the traditional circumcision practice is evaluated in terms of the principles of family practice as described by McWhinney.

In order to understand the pathogenesis of lesions, a survey was undertaken of 24 initiates admitted to a hospital for treatment. A structured questionnaire was developed and used by the author and two male nurses who assisted in the care of initiates in the bush. In addition, group discussions were held in the ward to test some of the views expressed. The extent of the lesions of those interviewed varied from grade 1 to grade 4 (Table I), and they were all interviewed between December 1993 and February 1994. In addition, through treating and follow-up of numerous initiates in the bush, I have come to understand the factors involved in the pathogenesis of lesions and have been able to confirm that the views expressed by the initiates are not inaccurate.

The causes of complications as described by initiates

Figure 1 describes the causes as perceived by the initiates. Of interest is the number of ini-

tiates who attributed problems to witchcraft. In addition, it is important to mention that a number of them identified the application of too tight a thong and dehydration as contributing factors.

The interval between circumcision and admission

The time delay between circumcision and admission would seem to reinforce our impressions that in the majority of cases onset of complications occurs around ten days after the initiation. The mean delay in admission in our sample was 14.5 days which is less than that quoted by Crowley *et al* (1990) of 18 days (variation 16-31). Their study was conducted on patients in a referral centre, and the delay in referral may account for the difference between their data and ours. The interplay between the onset of complications and other factors is described below.

Most penile lesions are healing well by

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day seven. It is possible to identify, by day seven, those initiates who are likely to develop problems. These boys need to receive special care. Lesions on the glans are characterised by swelling of the glans and penis, followed by small blisters which appear on the glans and distal penile shaft around day seven to ten.

The colour of the skin changes from red to purple and later to black as gangrene develops. The consistency of the glans becomes indurated and hard and this spreads proximally. Eventually, the glans liquifies and sloughs off like a sheath, leaving a pointed (pencil shaped) penis shaft with no glans. This may give the appearance of a poorly performed circumcision where it looks as if the tip of the penis was excised at the time of the circumcision. Gonorrhoea causes excoriation of the glans beginning around the urethral meatus.

The frequency of dressings

As described in Part I (Vol. 18, No. 1, February/March 1997), the time between the reapplication of leaves, paper, and thong varies from 15-30 minutes. In addition, the process of renewing the dressing takes two to five minutes. During this time, a flush of blood is able to flow through the penis, but once the leather thong has been applied, and depending on the tightness of its application, varying degrees of venous and arterial occlusion occur. In the first seven days, the dressing is applied frequently, but thereafter, as the initiates move around, it is done less frequently. This may have a number of effects:

- a reduction in blood supply to the wound with a further delay in wound healing, and
- ischaemia may result in anaesthesia, which may reduce the urge to redo the dressing.

If one considers the blood supply to the penis⁶ (Figure 3) then it is possible that at least venous flow is impaired, but with engorgement of the penis, and tight application of the thong, arterial supply is compromised to varying extents. If infective processes are added to this, then it is possible that the presence of thrombosis and oedema may complicate the picture.

It appears, therefore, that the impairment of blood flow is the most important factor in the development of complications, and that this is affected by the following:

- the frequency of dressings
- the thickness of the thong
- the tension used in application
- the presence of oedema
- infection (with or without thrombosis)
- the degree of anaesthesia present.

The role of infection

The role of infection remains unclear at this stage. It appears that the primary insult is the impairment of blood supply and that infec-

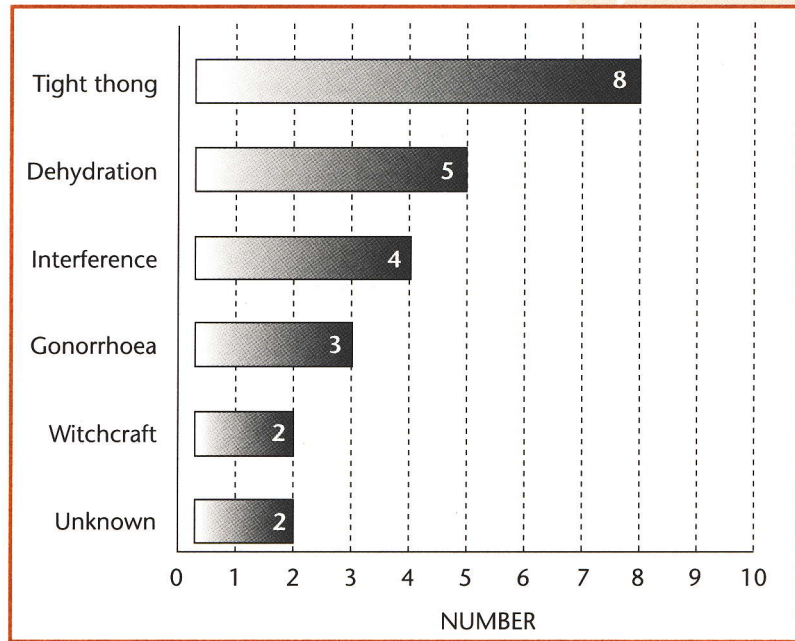


Figure 1. Causes of Complications Perceptions of Bakwetha (n=24)

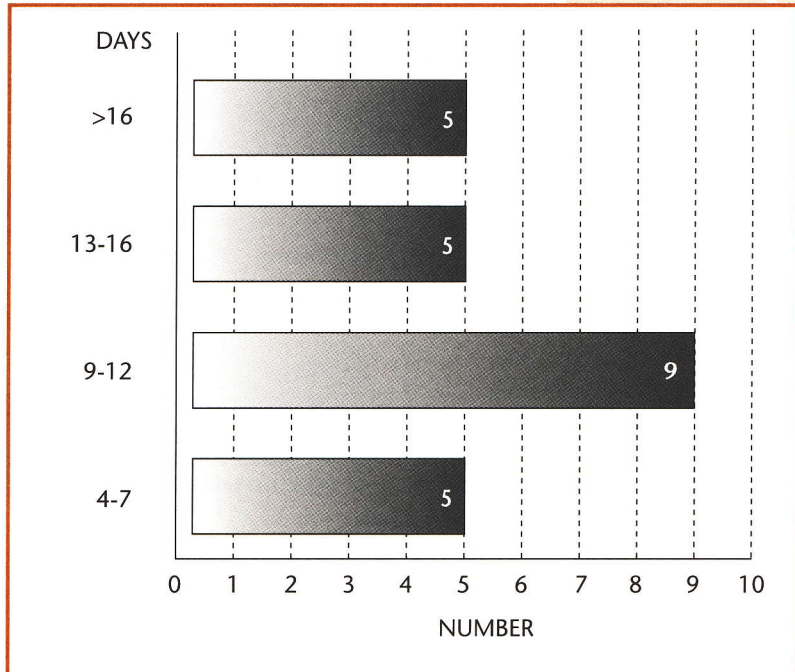


Figure 2: Interval between circumcision and admission (n=24)

tion has a secondary role to play. The factors contributing to infection are the following:

- initiates generally did not wash their hands prior to doing dressings
- spittle was often applied to the leaves and/or
- the leaves were first rubbed against the sole of the foot before being applied to the wound
- the relationship between blood supply and wound healing
- the incubation period of sexually transmitted diseases (gonorrhoea: two to six days, syphilis/lymphogranuloma venereum: seven to 10 days⁷)
- frequency of dressings: would frequent

Lesions on the glans are characterised by swelling of the glans and penis, followed by small blisters which appear on the glans and distal penile shaft around day seven to ten.

Figure 3:
Blood supply to the penis

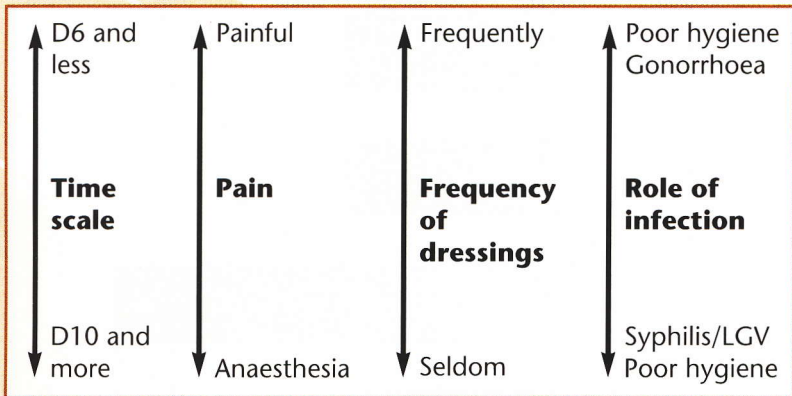
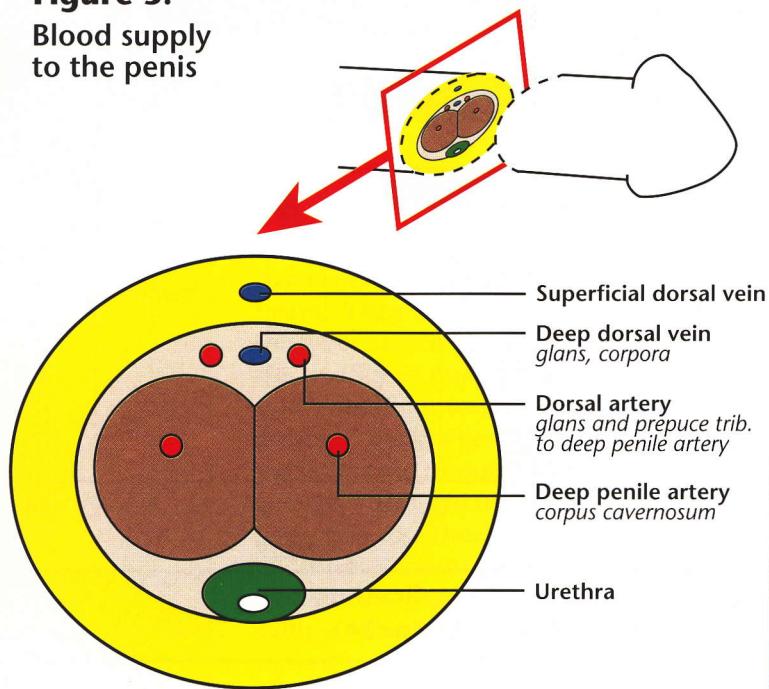


Figure 4: Factors contributing to penile lesions

Grade 1	Skin loss at base of prepuce with/without laceration of glans or shaft
Grade 2	Marked loss of penile skin
Grade 3	Loss of glans with/without partial loss of shaft
Grade 4	Loss of entire penis

Table I. Grades of severity (from Crowley et al)

Antibiotic	Proteus	Eubacterium	Staph.aur	E.coli	Peptostreptococcus
Penicillin	RRRR	SS	R	R	S
Trimethoprim	RRRR	RR	S	S	R
Amoxycillin	RRSR	SS	R	R	S
Cidoramphenicol	RRSS	SS	S	S	S
Tetracycline	RRRR	SR	R	R	S
Erythromyein		SS	R		S
Metronidazole		SS			S

Table II. Organisms cultured and their sensitivity profiles

dressings reduce the onset of infection, or would they result in increased infections? Cultures of swabs taken from the wounds of seven initiates admitted to hospital were analysed and revealed five different species of infection, most of which are secondary invaders of necrotic tissue and related to poor hygiene (Table II).

It is thus apparent that the development of complications is a complex process affected by a number of different factors, most of which affect the blood supply. In each individual the role played by the different factors may vary and these need to be assessed and the appropriate treatment given. Figure 4 indicates the various factors that contribute to the development of complications.

Strategies for dealing with these issues

Based on our understanding of the problems, input from the initiates, and discussions with community members, the needs were identified as follows:

- a reduction in the incidence of dehydration
- a reduction in the number of ischaemic events initiates were exposed to
- a reduction in the potential for developing infections and septicaemia
- making health care workers available and accessible to those in need of them.

A number of strategies were devised in order to deal with the problems arising from the traditional circumcision practice. A multi-pronged approach was needed which allowed for the education and training of all the different people affected by this tradition. Some of the strategies were:

Community meetings

On a community level, numerous meetings have been held with community members. Initially these meetings were held with the men of the community only, often with *in-cibi* and *amakbankatha* present as well. Generally, we explained how complications develop and how these are related to the cultural practices. We encouraged the community members to develop alternative strategies to avoid these complications. Interestingly, most communities have sanctioned the freer administration of fluids to initiates during the first week to avoid dehydration developing. They have also generally

S=Sensitive R=Resistant

agreed that boys with cardiac disease, epilepsy, diabetes, mental illness and HIV/AIDS should not undergo the traditional rite.

Lately, women have wanted to participate in the meetings and this has also been encouraged, although the discussions are usually less frank when women are present. In some instances, once women who were present at the initial stages of the meeting had left, aspects of the tradition were discussed more frankly. Families of initiates have an important role in selecting reliable *iincibi* and *khankatha* to care for their sons. They also need to ensure that his hut is appropriate and that help is available from health care workers should it be needed. They need to sanction the use of fluids in the first seven days.

School visits

Regarding the initiates themselves, a campaign has been launched which allows male advisers to address initiates-to-be in their schools. At this time they are taught about how complications develop and what can be done to prevent them (Table III). They are encouraged to attend a clinic for an examination prior to the ceremony. This component has been a very useful aspect of the programme, as these advisers also undertake visits to the sites where initiates are housed in the bush, and the boys often recognise them as the person who visited them at school. This opens up the communication channels and the boys feel that they are talking to someone whom they know.

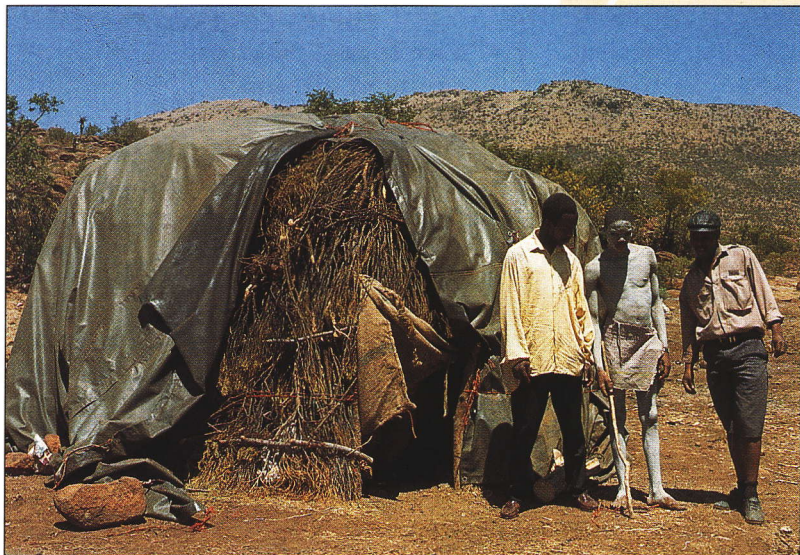
Care at clinics

Initiates are encouraged to attend clinics approximately one month prior to undergoing the circumcision rite. They are screened for STDs and are checked for conditions such as cardiac lesions, epilepsy, diabetes, mental illness, and HIV/AIDS. If fit, a certificate of fitness is given to them. Boys suffering from these conditions are not encouraged to go through with the traditional ceremony. It is suggested that they have a circumcision performed in a hospital under controlled circumstances.

Clinic staff are encouraged to link up with *iincibi* and *khankatha* and to provide them with gloves, scalpel blades and dressing materials.

Hospital care

The correct rehydration of initiates is important and the use of half normal saline fluids should be considered until electrolyte results are available. In addition, an awareness that septicaemia may be present and masked by the clinical signs of dehydration is important. Dressings should be applied regularly while the initiate is in hospital and ward staff should be aware of the pressures on the initiate not to return to the bush, but on his need to remain in the hospital until healing is com-



Cool, well-ventilated huts used in traditional circumcision ceremonies may be replaced by small zinc structures in urban areas, leading to overcrowding and extreme temperatures.



Gangrene of the shaft and glans of an initiate's penis.



The shortened stump of an initiate's penis due to gangrene of the distal portions following circumcision.

Cultures of swabs taken from the wounds of seven initiates admitted to hospital were analysed and revealed five different species of infection most of which are secondary invaders of necrotic tissue and related to poor hygiene.

While it is difficult to determine accurately the number of boys circumcised each year, it is estimated that approximately 10-14% of initiates develop complications.

TOPICS COVERED:

- Safe sexual practices
- Abuse of alcohol
- Intake of fluids
- Hand-washing prior to dressings
- Methods of dressing the wound
- Application of the thong
- Rights as individuals
- Seeking help from health care workers
- Visiting a clinic prior to participating in the ritual

Table III. Educational content of school visits

plete and he can take part in the coming out ceremonies. Many initiates will visit casualty departments at night, often after 22h00, so as to avoid being seen seeking Western medical care. They may be rebuked as it is inconvenient for staff to have to treat these boys so late at night. However, the context of the problem must be considered and staff should try to be accommodating.

Health care worker allocation

Visits to the bush are a routine practice in our area. Around November each year, male nurses are allocated to visit specific sites. On their rounds they pay special attention to boys who are in the seven to ten day period of their ritual. Any problems are dealt with after approval from the family members has been obtained. Once identified as problematic, the boys are visited regularly (three to five times a week) and are often dressed by the male nurse himself.

Legislation

While these aspects have been addressed, moves have also been set afoot in the Eastern Cape Province for the enactment of legislation pertaining to these practices. The aim is to ensure that *iincibi* and *kbankbata* are registered and to prevent charlatans from abusing the situation to address their own selfish needs. Aspects like clinic visits and certificates of fitness to undergo traditional circumcision are also likely to be introduced, as are restrictions on the age of initiates.

While it is still too early to make accurate predictions on the effectiveness of the campaign, Table IV indicates how the incidence of deaths, amputations and admissions decreased from the 94/95 season to the 95/96 season. While it is difficult to determine accurately the number of boys circumcised each year, it is estimated that approximately 10-14% of initiates develop complications. It would seem that the incidence of complications is also affected by the weather conditions (heat and dry weather being adverse).

Implications for family physicians

If we want to play a role as the constant carers, then we need to consider the following:

McWhinney⁸ has described a number of principles which are applicable to family practice. Dealing with initiates who have undergone traditional circumcision has generated in me a much deeper understanding of the importance of these principles. Unless we look at these principles, and apply them in practice, as family physicians we are unlikely to be able to meet the needs of initiates and their families. Some of the principles applied to the traditional circumcision practice, are as follows:

Being committed to the person rather than the disease, and understanding the context of the illness

Family physicians need to understand the context of the patient's illness. They need to understand the traditions and how they contribute to the pathogenesis of lesions. Without this understanding, the care of initiates is unlikely to be appropriate and will probably generate a great deal of friction between the doctor and the family members as Western medical care clashes with traditional practices. An open consultative approach is needed, with a willingness to adapt traditional Western medical practices to the needs of initiates.

Family physicians are members of a team of health care workers and they need to utilise their leadership skills to mobilise resources

As family physicians we need to view our practice population as a population at risk. This means seizing every opportunity we have in order to do health promotion, test opinions and discuss pertinent issues.

Area	94/95				95/96			
	Admissions	Deaths	Amputations	Circumcised in hospital	Admissions	Deaths	Amputations	Total
E Cape	743	34	18		Statistics not available			
Cula	54	0	4	136	26	0	0	430
Colimvaba	28	3	1		16	0	0	
Lady Frere	40	1	2		25	1	0	
Hewa	71	3	3		30	1	0	
Queenstown	68	2			33	1	0	
Total	281	9	10		132	3	0	

Table IV. Admissions, deaths and amputations compared for two consecutive seasons

Family physicians need to see themselves as members of a team of health care workers, and utilise their skills to get health workers mobilised in order to address the needs of the community. A doctor does not necessarily need to go out into the bush, but she/he should be involved in the development of programmes to prevent complications and in the appropriate allocation of resources.

Every contact should be viewed as an opportunity for prevention or health education and we should regard our practice population as a population at risk

As family physicians we need to view our practice population as a population at risk. This means seizing on every opportunity that we have in order to do health promotion, test opinions and discuss pertinent issues. In this way we need to remember to check on the teenage boy who presents with a nasty cough when he is due to go to the bush, and whether he knows about basic hygiene while he is there, and that he will take fluids in the first seven days, and contact a responsible person if he feels he needs help.

It may be important to see patients in any environment, whether it be the home, school, clinic or hospital

Are we prepared to visit boys in the bush if need be?

Acknowledgements

As a white South African I have wondered whether I should in fact even consider giving an account of this nature. It is possible that I may have made a number of assumptions or inferences which may be incorrect and would therefore like to state that I would welcome any contribution towards this description and that if any offence has been committed this has occurred unwittingly.

I would like to express my gratitude to the following people who assisted me during the period that this study was undertaken. Without their support, patience and understanding, I would not have been able to experience the depth of this tradition.

- Mr Z Makasi who accompanied me on so many visits to the bush, and who helped formulate the ideas presented in this article. Mr Makasi is now leading the project in the Queenstown district.
- Mr C Nxoyi and Mr M Cingo who helped collect data initially and who set up so many community meetings, as well as undertaking field trips in the early stages of the study.
- Mr L Klaas who helped proofread this article.
- The communities of Queenstown, Hewu, Ezibeleni and Merino Walk who were prepared to let me treat their children and to learn with them.
- The Department of Health and Welfare, Eastern Cape Province, for permission to publish. ●

References

1. Elliot A. *The Magic World of the Xbosa*. Ch 6: Initiation to Manhood. Collins, 1970:83-95.
2. Balint M. *The Doctor, His Patient and the Illness*. Ch 6: Level of Diagnosis. 2nd ed. London: Pitman Books Ltd, 1964.
3. Fehrson GS, Henbest RJ. *In search of excellence. Expanding the Patient-centred Clinical Method: A Three-stage Assessment*. J Fam Pract 1993;10:49-54.
4. *Harrisons Principles of Internal Medicine*. 9th ed. McGraw Hill, 1980:436.
5. Crowley IP, Kesner KM. *Ritual Circumcision (Umkhwetha) amongst the Xbosa of the Ciskei*. Br J Urol 1990;66:318-21.
6. *Gray's Anatomy*. 35th ed. Longman, 1975.
7. *Harrisons Principles of Internal Medicine*. 9th ed. McGraw Hill 1980.
8. McWhinney IR. *A Textbook of Family Medicine*. Ch 2: The Principles of Family Medicine. New York: Oxford University Press, 1989.

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