

# UROLINK in sub-Saharan Africa

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Reflections on my travels in Zimbabwe, Botswana, Kwazulu Natal, Mozambique, South-west Cameroon, Nigeria and Zambia; February–March 2000.

## Introduction

My love affair with Africa started 33 years ago when I went to Botswana for 2 years in the late 1960s. What is so magical? The laughing, smiling people, the warm weather, the singing (which is spontaneous, rhythmical, tuneful and very moving) and most of all the feeling of space and the sedate pace of life. In Africa the time is always an hour later than stated. Of course, there are drawbacks; the lack of green grass and decent beer, and the squalor of some areas, but this is not peculiar to Africa.

## The state of urology

Medically, places in Africa vary; I was impressed in the teaching hospitals I visited in Zimbabwe, Mozambique, Nigeria and Zambia, by how well-informed the students and doctors were, and how well taught they were in clinical skills. The ward rounds relied on history-taking and clinical examination; investigations were a luxury, with very little ultrasonography. CT was not available, although IVU and urethrography were. In Zambia the reagents for assaying routine urea and electrolytes were frequently not available.

The ultrasonographer in the hospital in Nongoma in Kwazulu Natal had an up-to-date ultrasound machine which she was using with great skill, but had received no instruction in diagnosis (there were no radiologists). I spent a happy morning with her, examining the kidneys, prostates and bladders of patients with bladder stones and carcinoma of the prostate.

The operating theatres were well kept, despite obvious shabbiness and lack of paint, and the instruments were sterilized in an autoclave by the nursing staff. They were very strict about gowning and double-gloving, and their operative and nursing skills were excellent. There was no endoscopic equipment which was useable (except in Botswana).

The telescopes available in Bulawayo were so fogged as to be virtually unusable, and there were no means of replacing them because hospital finances were scarce. In Gaborone (Botswana) they had an excellent selection of endoscopes, both rigid and flexible, and an Olympus flexible cystoscope and ureteroscope which had never been used. The surgeon had never received endoscopic urological training, although one of the nursing staff had been trained.

The anaesthetic equipment and expertise was variable; spinal anaesthesia was common and competent. In Maputo the theatres were doubled, so there was one anaesthetist for two patients but separated by a screen. In Nongoma I shared an endoscopic list with anaesthetist Dr Ruby Padi, with whom I had worked in North Wales for many years in the late 1980s and early 1990s. In Buea, South-west Cameroon, there was no medical oxygen supply available. Caesarean sections were undertaken with intravenous ketamine and spinal anaesthesia was not used. In Lusaka, giving sets for intravenous infusion were unavailable and blood was transfused in the theatre by injection of a bolus using a syringe.

Diathermy equipment was also variable; there was no working diathermy in Limbe (South-west Cameroon), where I watched a mastectomy under operating lights with only one working light bulb. I later went to South Africa with a new donated diathermy machine, which I left in Nongoma, where it was received with great joy. The donation of equipment, however useful, is not all that is needed as the upkeep of the equipment is much more difficult. There are no expert services in the hospitals to check and maintain the equipment, and no spare parts and or money to replace the parts when they fail. Although there are representatives of the instrument manufacturers in South Africa, the cost of replacement is exorbitant, so if equipment is supplied the means of replacement and repair must be supplied also, either by giving continuing financial help or liaising with manufacturers and relying on their goodwill. The urological expertise in sub-Saharan Africa is limited to a very few excellent departments, and urological endoscopy is generally not possible, not through lack of training but for lack of equipment.

## Urological diseases in sub-Saharan Africa

Schistosomiasis is a major health problem in all of Africa. Haematuria is a common symptom which is regarded almost as a normal sign of adulthood. In Ghana, as in other areas, some residents believe that bilharzia is a sign of manhood, whilst others attributed the redness of the urine to the red pigment in a variety of sugar cane that is eaten in the area [1]. In a study in Nigeria, infection with *Schistosoma haematobium* was detected in half the subjects, with a peak incidence amongst those aged 10–14 years. The awareness of schistosomiasis and its symptoms was high, but there was little understanding of how it occurred through water-borne transmission [2]. In a study from Anambra state, Nigeria, 37% of the children were affected, 65% accounted for in boys by swimming and 48% in girls by laundering. One third of 230 adults interviewed believed haematuria to be a venereal disease and 20% thought it was a sign of maturity; <2% of the respondents knew that snails transmitted the disease [3]. The treatment of schistosomiasis with praziquantel is very effective, with cure rates of >80% [4].

Unfortunately, in older adults haematuria is not taken that seriously, so the diagnosis of bladder cancer may be delayed. The development or re-development of haematuria in a person aged >30 years should be investigated as carcinoma and not treated as a recurrence of bilharzia [5]. Consequently, bladder cancer (usually squamous cell carcinoma) is diagnosed late and is incurable by surgery or radiotherapy, the latter being available in only a few centres and not particularly effective.

Schistosomiasis can also affect the upper tracts, with subsequent ureteric stricturing and dilation of the upper tracts; this requires monitoring, although mechanical obstruction is rare and only then requires surgery.

## Prostatic disease

There were surprisingly many elderly men with indwelling catheters. In Harare, endoscopic surgery was used for prostatectomy; in Bulawayo, Ibadan, Maputo, Lusaka the surgeons used open prostatectomy, and in Nongoma the patients were sent to Durban for endoscopic or open surgery. In Francistown (Botswana) and the Cameroon the patients remained with the catheters *in situ*. There were no  $\alpha$ -blockers available for use, not even prazosin for hypertension, which could have been helpful.

In those patients with prostatic cancer, radiotherapy was available in Zimbabwe, Kwazulu Natal and Nigeria, but drugs for medical castration (anti-androgens, which are expensive) or oestrogens (which are cheap) were not available. Even if they had been, it is certain that the patient would rarely have accepted their use, as surgical

castration, even for symptomatic prostate cancer, is unacceptable to the African man. Despite their catheters these men were still sexually active and wished to remain that way.

## Urethral strictures

Most urethral strictures result from venereal infection, although trauma (which is common, and usually caused by road traffic accidents) accounts for a few; therefore, the strictures are usually long and complex. The centres I visited had no optical urethrotomes or suitable catheters for postoperative self-dilatation and thus open urethral surgery was universal, often carried out in staged procedures but usually using scrotal skin. Unfortunately, the prevalence of circumcision precludes the use of the prepuce. Replacement grafting with tissues such as buccal mucosa is not yet used outside South Africa. I was able to use an optical urethrotome satisfactorily for two short membranous urethral post-traumatic strictures in patients in Nongoma and Lusaka, and to supply the patients with suitable catheters at least for some time. The men had no qualms about the re-use of catheters for as long as possible. In a study of the management of urethral stricture in Africa the cost-benefit of optical urethrotomy and urethroplasty were compared [6]. The recurrent stricture rate after urethrotomy and self-dilatation was 17%, and similar to that of urethroplasty. In addition to providing lasting treatment to many patients, urethrotomy was 10 times cheaper, 10 times faster and offered the surgeon better protection from infection with HIV than did urethroplasty. However, recognizing strictures unsuitable for urethrotomy before surgery is important to avoid a useless procedure. A failed urethrotomy I undertook in Lusaka (a recurrent gonococcal stricture) took me over 30 min under continuous irrigation, with fluid covering my arms and splashing into my face. The luxury of camera attachments to television monitors (or even teaching aids for teaching) is as yet a remote possibility.

## Circumcision

Some tribes in Southern Africa still practise ritual circumcision on adolescent boys; a traditional healer carries out the procedure in 80%, resulting in many complications of circumcision [7]. The use of one blade for ritual circumcision also increases the risk of transferring infection, especially HIV. Complications include haemorrhage, septicaemia, partial or complete loss of the penis from gangrene, and infection with HIV. Ritual circumcision, whether mass or single, for cultural or religious reasons remains controversial, with no confirmed medical benefit, and should be discouraged.

However, prepubertal circumcision might be associated with a reduced risk of HIV, although circumcision after 20 years old does not seem to give this protection [8]. Circumcision has been shown to have no effect on the acquisition of urethral infections and genital warts, and in one study increased the risk of HIV infection [9].

### Paediatric urology

The usual congenital abnormalities are present, with hypospadias being very common. The paediatric wards I visited had numerous children awaiting, undergoing or in between stages of repair, with suprapubic catheters *in situ* because of the poor facilities for catheter care outside the hospital. Their stay in hospital tended to be prolonged. There was considerable interest in the lecture given by Patrick Duffy (Consultant Paediatric Urologist from Great Ormond Street) on hypospadias repair, and improvements in the results from these procedures will continue.

In both Zimbabwe and Ibadan I saw advanced Wilms' tumours in small infants (one was bilateral); a delay in diagnosis is inevitable in countries where clinics and hospitals are many days' travel away, and where ultrasonography and imaging is unavailable in many district hospitals.

In Lusaka, a 12-year-old boy was admitted with retention of urine. There was no useable endoscope, either paediatric or adult, to biopsy the lesion of the bladder base, so open biopsy confirmed a rhabdomyosarcoma of the bladder. This very quickly fungated through the anterior abdominal wall, necessitating cystoprostatectomy 3 months later when the boy was in renal failure and close to death. The boy recovered well and remains so over a year later. The option of radiotherapy was not available.

Stone disease is not common in Africans, despite the hot climate and subsequent dehydration; other interesting conditions were Fournier's gangrene of the genitalia, which was common and associated with venereal disease, UTIs and genitourinary tuberculosis.

### Female urology

The continuing high incidence of vesicovaginal fistulae (VVF) and vesico-rectovaginal fistulae in women in Mozambique and Zambia, evident from the many young (teenage) inpatients, reflect the obstetric care in these countries. The incidence has reduced considerably, especially with improvements in antenatal services in South Africa. VVF is a severely demoralizing and disabling injury; a statistical analysis showed that patients with VVF were smaller in stature and of a lower socioeconomic status, and that women married and

commenced child-bearing when too young to safely deliver a child [10].

The surgical expertise for repairing these fistulae is available in the main centres, and provide reasonable results. For the larger fistula, urinary diversion using conduits is not an option, as urostomy appliances are not available and the young female remains wet and malodorous. Continent urinary diversion for the failed repair remains an option, and although this requires catheters for intermittent catheterization, it is a procedure which could be promoted for managing these unfortunate young girls [11]. The Mainz II procedure using a continent rectal urinary pouch (the anal sphincter being intact) would also be useful, as it precludes the need for catheterization.

### Problems

*Personnel.* The main problem is the lack of trained urologists in sub-Saharan Africa (excluding South Africa, where there are  $\approx 150$ ); most urology is undertaken by general surgeons. There are three trained urologists in Mozambique, Botswana has none, but Zimbabwe fares better with eight, most of whom are trained endoscopic surgeons; Zambia has about five and South-west Cameroon none. In South Africa the urologists are concentrated mainly in the cities, with 80% of them in the private sector; the rural areas appear to be as deprived as their neighbouring countries. This problem could be addressed by the city urologists visiting the rural areas to undertake routine urological procedures, rather than the patient having to travel long distances to undergo routine procedures, e.g. TURP and TURBT. The urologists then also have the opportunity to train the theatre and ward nursing staff.

There is an exodus of nurses from Zimbabwe and other nearby countries into South Africa, as the pay and working conditions are better. There is likewise an exodus of nurses from South Africa to the UK, to support the NHS and for the same reasons. Several doctors also emigrate from these countries, but many in their 30s and 40s have been lost in the AIDS epidemic, leaving areas in the hospitals understaffed.

### Equipment

Endoscopic equipment is often absent or so poorly maintained as to be useless; this situation can be remedied by providing equipment (preferably free from the manufacturer), with the maintenance provided free. Even equipment such as irrigation fluid and giving sets is not easy to supply. Irrigation fluid was flown by the Red Cross from Durban to Nongoma for my use; I suspect that many places will continue to use boiled tap water in

clean buckets. Catheters are in such short supply that they are reused. If equipment is sent from other countries it will be taxed at the airports; it must be carried in personally if these heavy customs duties are to be avoided.

## Drugs

Notwithstanding the lack of anti-retroviral agents for treating HIV-positive patients (which are not affordable by the governments of these countries) even cheap drugs, e.g. antibiotics,  $\alpha$ -blockers and oestrogens, are not available.

## Education

The library in Harare was well stocked, unlike Lusaka which had no journals published after 1994. However, most hospitals need journals; many of the medical personnel have Internet access and can obtain information relatively easily. Despite the lack of journals in Lusaka it had the best audio-visual department I have seen, with slide-making and graphics facilities. This had been donated, staffed and continues to be run by the British Council, and is an excellent demonstration of how a donation should be given so that there is no interference by the local bureaucracy, who like to obtain a share of any proceeds.

## HIV/AIDS

The epidemic of AIDS will be difficult to eradicate (Table 1), partly because condoms are not used in this predominantly heterosexual male-dominated society, where a woman would not be listened to even if she requested her partner use a condom. In some cultures there is a belief that if the man has intercourse with a virgin she will cleanse him of the disease, as it is passed on to her, and he will be healed.

**Table 1** The scale of the AIDS epidemic in Southern Africa

Country	% of (adult) population infected
Botswana	35.8
Lesotho	23.5
Malawi	15.9
Mozambique	13.2
Namibia	19.5
South Africa	9.9
Swaziland	25.2
Tanzania	8.1
Zambia	19.9
Zimbabwe	25.1

The lower rate of HIV in some countries may reflect the degree of testing. The life expectancy of both men and women has decreased by 10 years, with a generation of 30- and 40-year-olds dying from AIDS. The grandmothers are left to care for the children, but their mature years are no guarantee of protection against HIV infection. Until the governments concerned obtain treatment for HIV-positive citizens, and until lessons are learned about how HIV is spread, then the epidemic will continue. There is a common poster on the billboards in Gaborone, which promotes the simple message: *Abstain. Be faithful. Use a condom.* As most African men seem unable to comply with any of these, the resolution of this disease in the near future seems unlikely.

Guidelines have been devised for health workers travelling overseas to countries where AIDS is commonplace, with advice on how to avoid contamination with HIV, how to manage such contamination using HIV-testing kits, and how to obtain supplies of antiviral agent.

## The future

Although this review appears slightly pessimistic about some aspects, there is great potential for satisfaction and pleasure in working in sub-Saharan Africa. There is a welcoming atmosphere in all these countries; the people are keen to exchange ideas and to teach us what they know. Some excellent open surgery is being undertaken. One of the rewarding aspects of my visit was to arrange urological training for the local surgeons. The surgeons in Maputo had been attending Professor Naudé's department of urology in Groote Schuur Hospital for 3 months each, for endoscopic training arranged by the goodwill of Professor Naudé and partly funded by UROLINK. Also, Dr G. Webb (from Cape Town) regularly visits Gaborone and has been training the local surgeon. It is important that local expertise and training are shared.

These hospitals need equipment, drugs and manpower. Textbooks and journals are also useful, although many places have access to the Internet. Communication by e-mail is now commonplace, as telephones and postal services are most unreliable. There is a great need to improve public health education in the towns and countryside, especially about preventing HIV and venereal disease, and in the management of haematuria and UTI.

The goal of UROLINK is to promote the provision of appropriate urological expertise worldwide, and this can be best accomplished by twinning between hospitals, to co-ordinate medical, paramedical and nursing support. This is especially useful in sub-Saharan Africa.

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Abbreviation: VVF, vesicovaginal fistula.