



UNIVERSITY OF NAIROBI

**UROLOGICAL FOOTPRINTS IN KENYA
‘THAT WATER MAY FLOW’: A STORY
ABOUT MALE GENITAL CANCER AND
DYSFUNCTION**

INAUGURAL LECTURE

BY
GEORGE ALBERT OMORE MAGOHA

M.B.B.S (Lagos), IOM, FICS, FABI, FIBA, MSIC, FCS
(ECSA), FWACS, FMCS (Urol.).

PROFESSOR OF SURGERY

**UROLOGICAL FOOTPRINTS IN KENYA
'THAT WATER MAY FLOW': A STORY
ABOUT MALE GENITAL CANCER AND
DYSFUNCTION**

INAUGURAL LECTURE

BY

GEORGE ALBERT OMORE MAGOHA

M.B.B.S (Lagos), IOM, FICS, FABI, FIBA, MSIC, FCS
(ECSA), FWACS, FMCS (Urol.).

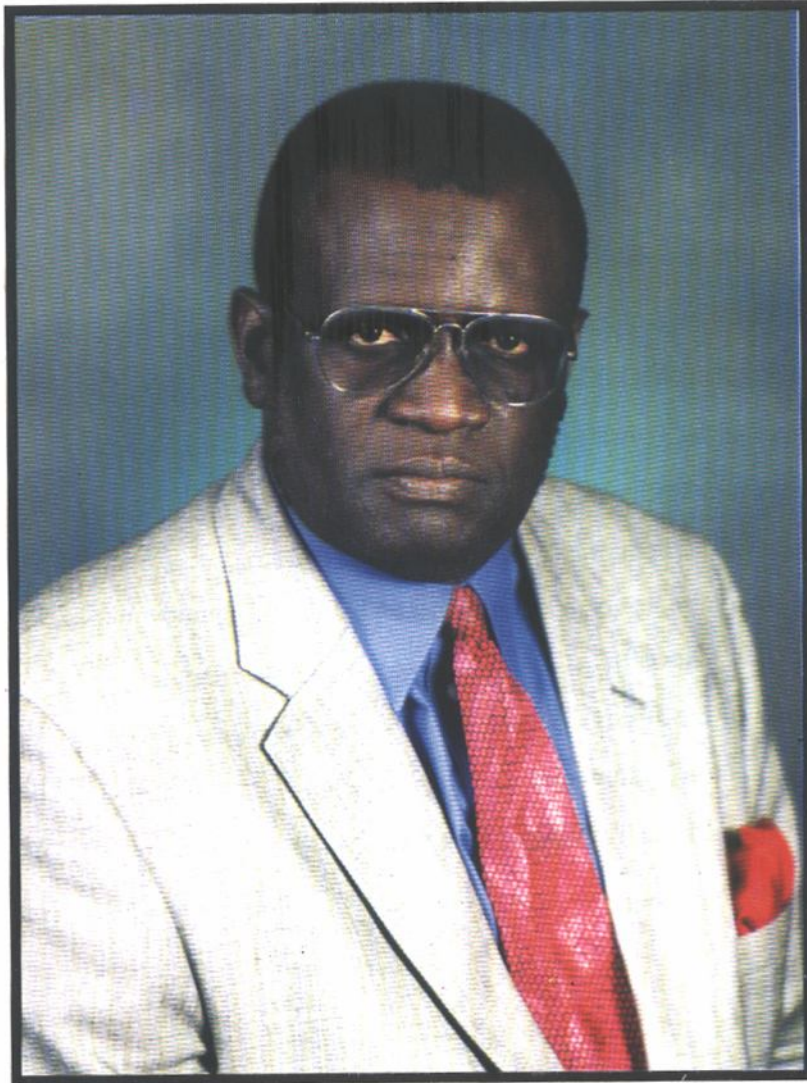
PROFESSOR OF SURGERY
AND
CONSULTANT UROLOGIST
DEPT. OF SURGERY, UNIVERSITY OF NAIROBI

TABLE OF CONTENTS

Dedication	iv
Bibliography	vii
Who is a Psychiatrist	x
What I believe in	xi
DEDICATION	
Introduction	1
This inaugural lecture is dedicated to my first teacher my late father Bernard Magoha.	
Career of the Psychiatrist	2
Racial and Minority Problems	6
Career of the Psychiatrist	8
To Circumvent or not, a Professional and Personal Choice	11
Testicular Cancer	14
System of the Testes (Twisted Testes)	16
What is a Testicular Dysfunction	19
The Postgraduate Training of Psychiatrists	25
References	27

TABLE OF CONTENTS

Dedication	iv
Bibliography	vii
Who is a Urologist	x
What I believe In	xi
Introduction	1
Cancer of the Male Genital Tract	1
Cancer of the Prostate Gland	2
Benign and Malignant Prostatic Obstruction	6
Cancer of the Penis	8
To Circumcise or not, a Professional and Personal Opinion	11
Testicular Cancer	14
Torsion of the Testes (Twisted Testes)	16
Male Erectile Dysfunction	19
The Postgraduate Training of Surgeons	25
References	27



PROFESSOR GEORGE ALBERT OMORE MAGOHA

BIOGRAPHY

I was born on 2nd July 1952 at Kisumu Government Hospital, the seventh in a family of 10 children. My late father was a primary school teacher before retiring in 1974, and my mother is a housewife. To them I owe and pledge my life and courage. The name I was given at birth is Omoro, having been named after my maternal grandfather. This name means a happy child who will bring happiness to the family. It is not a very common name and is closely related to the Nandi name of Mori. I was christened as George Albert at St. Teresa Catholic Church in Yala, Gem, Siaya District.

I attended Jina Primary School in Yala Division, Gem and Dr David Livingstone Primary School in Jerusalem, Nairobi between 1960 and 1966. I attended Starehe Boys Centre between 1967-1970 for my secondary school education and passed with division one which included a distinction one in history which was my best subject. At Starehe Boys Centre, I was moulded into a hands-on tough self-manager by the then Director Dr Geoffrey Griffin. Most of the leadership qualities in me were discovered and strengthened by Doctor Griffin. He taught me to be always truthful and fair to all without fear or favour and never to hit any one below the belt and therefore to back off a retreating foe and to be magnanimous even in comparative victory and success. I will forever be grateful to Dr Geoffrey Griffin and to Starehe Boys Centre for enabling me to learn these important facts of life very early in my life.

I studied for my Advanced Level exam at Strathmore College between 1971-1973 and passed with three very good principals in biology, chemistry and physics. I owe this to my late father who influenced me to abandon English and History which would have resulted in my studying Law. As a result of this, I was awarded INTERAF scholarship in September 1973 to

study medicine at the University of Lagos in Nigeria from where I graduated with an MBBS degree in April 1978.

My post graduate training in surgery and urology started at the Lagos University Teaching Hospital in May 1979 and included University College Hospital Ibadan, University of Ghana at Legon in Accra, Royal college of Surgeons in Dublin, Ireland, the Royal Postgraduate Medical School at Hammersmith Hospital in London and the Institute of Urology in London. In London, I am particularly grateful to training roles by Prof. L.H. Bloomgart, the late Prof. G.D. Chisholm and Mr. Gordon Williams among others who taught me advanced urology and renal transplantation surgery including the organisation and harvest of kidneys from brain dead patients from various hospitals in London and from all over Great Britain. In Lagos, I am grateful to Prof A.E. Elebute, Prof. E. O. Amaku, late Prof. P. Omodare and Prof. M.O. Jaja among others; and to Prof. E.O. Nkposong at the University of Ibadan for teaching me general and emergency surgery and general urology. At the University of Ghana, I am grateful to Prof. N. L. Engmann.

I was married to Dr. Odudu Barbara Essien in May 1982 in Lagos, Nigeria and we have an 18 year old son Michael Augustus Magoha.

I taught Surgery and Human Anatomy at the College of Medicine of the University of Lagos before returning to Kenya where I was appointed lecturer in Surgery at the University of Nairobi in January 1988 and promoted to senior lecturer in 1989. In September 1996, I was promoted to associate professor in surgery, and in March 2000 I was promoted to Professor of Surgery (Urology) of the University of Nairobi.

Administratively, I have been an active member of the University of Nairobi Senate and Council and its various Committees. I was the Chairman of the academic department of Surgery in 1999 to 2000, was elected the Dean, Faculty of Medicine in 2000 to 2001, and appointed the Principal, College of Health Sciences of the University of Nairobi at Kenyatta National Hospital. In April 2002 I was appointed the Deputy

Vice-Chancellor in charge of administration and finance of the University of Nairobi to-date.

I am the current chairman of the Kenya Association of Urological Surgeons (KAUS), and the current treasurer of the Pan African Urological Surgeons Association (PAUSA). I am also a member of the International and African Societies of Impotence Research (ISIR) and (ASIR), the British Association of Urological Surgeons (BAUS), Society International D'Urologie (SIU), Erectile Dysfunction Advisory Council (EDAC), and the International Society of Surgeons among others. I am also a Fellow of the International, West African, Nigerian, East, Central and Southern African Colleges of Surgeons. I was bestowed with the International Order of Merit (IOM) for my excellent contribution to research on genital cancer in Africans and awarded the Scientific Achievement Award for my contribution to research in Erectile Dysfunction in Africans in 2001. I have also been appropriately cited in the current volumes of WHO IS WHO IN THE WORLD, WHO IS WHO IN MEDICINE AND HEALTH CARE and WHO IS WHO IN SCIENCE AND ENGINEERING because of my continuous contribution to the advancement of Clinical Urological science.

I have published over 50 clinical scientific papers in peer reviewed journals both nationally and internationally. I have also supervised to completion 35 surgeons in their postgraduate Master of Medicine in Surgery theses at Kenyatta National Hospital, and I am currently supervising another three. Some of these surgeons who were foreigners have returned to their countries such as Nigeria, Tanzania, Liberia, Cameroon, Sudan, Uganda and Ethiopia where they are engaged in the provision and dissemination of surgical clinical services to their people. Some of their Kenyan counterparts have become lecturers while others have progressed to become senior lecturers in surgery in our two medical schools in Kenya.

I have also attended and presented numerous scientific papers in many scientific conferences all over the world and acted as external examiner

in Surgery to some regional Universities. Last but not least, I have contributed to the improvement of the University of Nairobi infrastructure by attracting twenty five million Kenya Shillings from a Korean professional colleague which was well utilised to construct an additional floor to the administration building at the College of Health Sciences based at Kenyatta National Hospital under my direct and very strict supervision. Thanks to this effort, the Faculty of Medicine Boardroom for example is the best in the whole University completed and furnished to the highest possible international standard.

WHO IS A UROLOGIST?

In very simple terms, a urologist is a human plumber. He deals with human water pipes which transmit urine and seminal fluid, and the organs that feed and supply these pipes. In orthodox terms, a urologist is a fully trained general surgeon with a Fellowship diploma or Master of Medicine diploma in general surgery but who further specialises in the management of urogenital diseases in the kidney, ureter, bladder, prostate, urethra, penis and testis etc. The urologist also manages infertility and erectile dysfunction particularly in the males. A urologist has interest in the whole body from the brain to the pubic hair. He pioneered the use of Endoscopic instruments such as urethroscopes, cystoscopes, ureteroscopes, nephroscopes, resectoscopes and laparoscopes etc used for the direct visualisation of the internal spaces of the human body and he remains the most versatile of all physicians in their use. Indeed today no part of urinary tract is hidden from the urologist. The urologist pioneered organ transplantation through kidney transplant. Today the urologist is the vanguard of fertility control through innovation of a knife-less vasectomy, a procedure which is inexpensive, quick, safe, simple and with no failure rates. But perhaps the most significant advancement of the last century is the development and use of sildenafil (viagra) in the successful management of male Erectile Dysfunction which until then was a nightmare to all Urologists world-wide. I am very proud to have been part of the international team through my memberships of the International

Erectile Dysfunction Advisory Council and the International Society of Impotence Research.

Mr. Vice Chancellor, this inaugural lecture is about a urologist and how his research work and urological practice has impacted on the world of male genital cancer particularly cancer of the Penis, testis and Prostate; and erectile and testicular dysfunction and how his contributions have affected his immediate environment and the world at large. I am proud and honoured to be a urologist. Furthermore, there have been many previous Inaugural lectures since the beginning of this University in 1970. I am therefore very proud but humbled to be the first surgeon and Urologist ever to deliver an Inaugural Lecture at the University of Nairobi and before a most distinguished and scholarly audience.

WHAT I BELIEVE IN

I deeply admire Starehe Boys Centre not only because I was moulded there but more because of their motto 'NATULENGE JUU' which means let us aim high and the sky is the limit. I believe as a urologist that water may flow and indeed must flow. I believe that the knowledge about water flow must like a torch pass from one to another. It must flow from one man to another. It must encourage growth. Devoid of these qualities I firmly believe that knowledge is dead as a cadaver in the Anatomy laboratory and therefore useless to mankind. And I concur with Barbara Streisand in the all time Great Classic 'HELLO DOLLY' and in which Louis Armstrong of blessed memory reached the peak of his perfection and said that 'money is like manure and that it is not worth a thing unless it is spread around encouraging young things to grow'.

It is absolutely impossible to recreate and enact on this stage here today the over 22 years of my academic life within one hour or so . I shall therefore implore you scholars as William Shakespeare did in King Henry V to use your imagination as I rush and jump over clinical times and events of my academic past.

UROLOGICAL FOOTPRINTS IN KENYA 'THAT WATER MAY FLOW': A STORY ABOUT MALE GENITAL CANCER AND DYSFUNCTION

INTRODUCTION

The main thrust of my research has been on genital cancer (penis, prostate and testis), torsion of the testis and erectile dysfunction. This lecture will focus on these although I have researched on many other urological topics in this locality including chronic proctitis (Magoha, 1996), Scrotal gangrene (Ayumba and Magoha 1998), renal transplantation (Rowe and Magoha 1987, Magoha and Ngumi 2001) and autologous blood transfusion (Magoha et al 2001).

CANCER OF THE MALE GENITAL TRACT

Prostate cancer is the most common male genital cancer all over the world including Africa. It has also become the commonest male cancer in Sweden and the USA, and the second most common cancer in the European countries, and the situation is similar in many parts of the Western world (Boring et al. 1994). The screening and subsequent early detection and treatment of prostate cancer has recently been advocated as a means to decrease morbidity and mortality of the disease which is on the increase. However the benefits of early detection of prostate cancer remain to be proven because 50-60% of patients have either locally advanced and or metastatic disease at presentation and are therefore unsuitable for curative surgical treatment (Schroeder, 1993).

Testicular cancer, although relatively rare, represents the most common cancer in men in the 15 to 35 years age group (Abrat et al. 1992). It is known to be rare in blacks and mixed race and is associated with maldescent of the testis in 4-11 percent of the cases. Testicular cancer currently evokes widespread interest because it has become one of the most curable solid tumours and serves as a paradigm for the multimodal treatment of malignancies. The dramatic improvement in survival has resulted from the combination of effective diagnostic techniques, improved tumour markers, effective multidrug chemotherapy regimens and modifications of surgical techniques has led to the diminution in patient mortality from greater than 50 percent to in 1970 to less than 10 percent in 1990 (Waterhouse, 1965).

Cancer of penis has a world wide distribution with a low incidence among Muslims and infrequent occurrence among Jews due to religious reasons for circumcision. Its age adjusted incidence varies in different parts of the world and is reported to be low 0.5-1.5 per 100,000 males annually in the western world and high 2.9 per 100,000 males annually in some Asiatic countries such as India (Harish and Ravi, 1995). Phimosis has been shown to be a significant aetiological factor in penile cancer (Muir, 1979). Cancer of the seminal vesicles is very rare and only about 30 cases have been reported in the literature world wide and may be associated with haemospermia (Goldstein and Wilson 1973). Cancer of the scrotal skin is also rare and mostly arises from occupational exposure to various carcinogens including tars, soot, creosote and petroleum products (Ray and Whitmore 1977).

CANCER OF THE PROSTATE GLAND

Prostate cancer is now recognised as a global disease, but its incidence known to be highest among American Blacks, and moderate in the Europeans. The earlier cancer surveys in African populations characterised black Africa as low risk zones for prostate cancer (Dodge, 1963). The incidences of cancer for Africa are repeatedly quoted as being 4-10 patients per 100,000 males, whereas in Black Americans it is quoted as 100 patients

per 100,000 males. This earlier belief that cancer of the prostate was rare in Africans (Vint, 1935), was due to the evident lack of information regarding the biological behaviour and problems of prostatic cancer in various parts of Africa. This view is no longer tenable in many parts of black Africa.

In Ghana, Yeboah and Quartey in 1977 reported prostatic cancer as the most common genitourinary malignancy at the University of Ghana Teaching Hospital Korle Bu Accra. In Nigeria, Nkposong and Lawani, 1973 at the University College Hospital Ibadan, Amaku et al. 1971 at the Lagos University Teaching Hospital Lagos, and Udeh, 1981 at the University of Nigeria Teaching Hospital Enugu all reported prostate cancer as the most common genitourinary cancer in the West African locality.

Cancer of the prostate is the Gold standard and flagship of both my surgical and academic careers. I decided to become a surgeon and Urologist during my surgical internship in a urology unit as a result of my successful treatment of a patient with advanced cancer of the prostate at a the Lagos University Teaching Hospital in 1978. Indeed, my very first publications were on the subject of prostate cancer as shown below:

- (a) Osegbe, D. N., and Magoha, G. A. O.
‘The effect of rectal examination on the serum acid phosphatase levels in benign and malignant prostatic disease’.
Postgraduate Medical Journal, 1982.
- (b) Magoha, G. A. O. , Odunjo, E. O., and Amaku, E. O.
‘Incidental carcinoma in surgically resected prostates in Nigerians’.
Nigerian Quarterly Journal of Hospital Medicine, 1985.

In the first study on serum acid phosphatase, I joined Professor Dominic Nwankwo Osegbe in 1978. The results of this study indicated that there appeared to be no merit in the teaching that ‘determination of serum acid phosphatase levels should be delayed after a rectal examination’. This was because we found that the elevated serum acid phosphatase levels when properly determined, should always arouse suspicion of a malignant

prostatic disease or other lesions associated with high enzyme levels even if such determination was preceded by a rectal examination.

The second Nigerian study I performed while at the Lagos University Teaching Hospital involved the histopathological analysis of three hundred and six prostate glands resected for clinically benign hyperplasia over a ten year period. The main objective of this study was to determine the incidence of incidental cancer of the prostate in these glands. The research was carried out together with Professor Odunjo of the department of morbid anatomy of the College of Medicine of the University of Lagos who performed routine sections, and histologically analysed all the prostate slides. We reported incidental cancer in (10.5%) of these glands, similar to the rates reported earlier in Caucasians elsewhere.

The next ten years of my surgical and academic career at the Lagos University Teaching Hospital witnessed my continued research on the epidemiological and clinical aspects of, the treatment methods in, and the prognosis of prostate cancer as published in (Magoha 1989., Magoha, 1990., and Magoha 1990). Our studies on prostate cancer at the Lagos University Teaching Hospital during this period confirmed that clinical cancer of the prostate was common in Nigerian Africans as previously reported by others (Nkposong, and Lawani 1973., Udeh, 1981). We further reported that advanced prostate cancer was also common and that sub capsular orchidectomy (removal of half of the testis) was an effective mode of treatment for advanced disease in this locality compared to other methods of hormonal manipulation.

With sub capsular orchidectomy, there were no undesirable side effects related to oestrogen therapy such as gynaecomastia (enlargement of male breast), cardiovascular side effects which include thrombosis and pulmonary embolism. Sub capsular orchidectomy was also found to be more cost effective and convenient compared to oestrogen therapy as the operation was performed only once. Other forms of treatment like the chronic administration of lutenizing hormone releasing hormone (LHRH) agonists

like leuprolide and zoladex also decrease testosterone to castrate levels but are more expensive and may result in erectile dysfunction. There are also available synthetic non steroidal anti androgens, flutamide and bicalutamide and the steroid cyproterone acetate all of which act peripherally by blocking androgen uptake and / or nuclear binding of testosterone at the target (cancer) tissue level which are useful alternatives but still more expensive than sub capsular orchidectomy and require the luxury of very regular and sustained urological reviews and indefinite supply of drugs. The operation is not associated with psychological trauma as is the case with total orchidectomy (complete removal of the testis). Furthermore, the findings from these studies showed poor prognosis for poorly differentiated and undifferentiated prostate cancer in Nigerian Africans similar to previous reports in Caucasians by (El-Mahdi in 1983).

It is important to emphasise that to date all the above methods and others such as radiotherapy etc are not useful for the treatment of the recurrent advanced prostate cancers which have escaped hormonal treatment. Total androgen blockade which includes orchidectomy plus the peripherally acting anti androgens are also not efficacious in this regard. In fact the nightmare and challenge of all urologists world wide today is on how to treat such hormone resistant cancers, and a lot of research is currently directed to this area.

After my ten year sojourn at the Lagos University Teaching Hospital, I returned to Kenya in January 1988 and joined the academic department of surgery of the University of Nairobi as a lecturer. I performed a local literature review and search about prostate cancer and confirmed that nothing had been published in any peer reviewed journal about prostate cancer in this country for about the past twenty years. This encouraged my continued research on prostate cancer in Kenyan Africans and afforded me the opportunity to compare and contrast with my Nigerian experience on prostate cancer as illustrated by the following papers;

(a) Magoha, G. A. O.

'Epidemiological and clinical aspects of incidental carcinoma of the prostate in Africans: experience at the Lagos University Teaching Hospital, Lagos and Kenyatta National Hospital, Nairobi'. East Afr. Med. J. 1995,72: 283-287.

(b) Magoha, G. A. O.

'Management and survival in advanced prostate cancer in Nairobi'. East. Afr. Med. J. 2000, 77: 260-263.

The findings in these studies were significant and indicated that cancer of the prostate was common in both Kenyan and Nigerian Africans. The clinical and biological behaviour of the tumour was also found to be similar in both groups. These findings suggested to us that the incidence and behaviour of prostate cancer in Africans closely resembled the incidence and behaviour of the tumour in Black Americans. This observation may be true because Black Americans are actually Black Africans in diaspora. These findings were shared with Urological Colleagues at various local and international conferences and seminars including in Montreal Canada, Societe' International D' Urologie' SIU 1997., Dakar Senegal, Pan African Urological Surgeons Association PAUSA 1999., Singapore, SIU 2000 and Tunis PAUSA 2001 etc. These contributions along with those of professor Osegbe of the Lagos University Teaching Hospital Lagos have received International commendation for our setting the record straight for the incidence and behaviour of prostate cancer in Africans and is being utilised widely as baseline African data by other Urologists. My continued study of this cancer is now focused on its aetiology, screening and early detection in collaboration with researchers from the Universities of Senegal and the University of Lagos as I continue to place my Urological foot prints in Kenya 'that water may flow'.

BENIGN AND MALIGNANT PROSTATIC OBSTRUCTION

It is impossible to carry out research on cancer of the prostate in this locality and fail to encounter and therefore say something about benign enlargement of the prostate (benign prostatic hyperplasia). This is because the two are closely related. Benign prostatic hyperplasia is one of the most common pathological processes that afflict elderly men. More than 70% of men over seventy years of age have microscopic evidence of hyperplasia within the gland although only 45% of them have palpable enlargement of the gland on digital rectal examination (Berry et al 1984). Recently, Garraway et al, in 1991 in a population survey reported symptomatic form of benign prostatic hyperplasia (BPH) in 43% of men over 65 years of age. Only a small proportion of men with symptomatic benign prostatic hyperplasia ever consult a physician regarding their symptoms (Mckelvie et al 1993). The clinical manifestation of BPH falls into two categories including symptoms of obstruction related to impaired urine flow such as poor urinary stream, hesitancy, or urinary retention, and symptoms of bladder instability (irritation) related to the alteration in the bladder response to filling including frequency, nocturia and urgency (Jacobsen, 1997). These lower urinary tract symptoms have a substantial negative impact on the quality of life in these men. The presence of lower urinary tract symptoms is associated with self reported bother, interference with common daily activities, decreased psychological well being, functional status, worry and embarrassment associated with urological function. While these quality of life issues coupled with the increasing publicity of the disease is leading many more men to seek medical advice, often the symptoms are left to progress to urological emergencies such as acute urinary retention (Jacobsen et al 1995).

In my urological practice during my academic career, I have encountered benign prostatic hyperplasia as one of the more common causes of acute retention of urine in elderly men in this locality. This is because in this locality these patients always present late with complete prostatic obstruction. The reason for this is because these patients most of the time

related their poor urinary stream symptoms to some imagined future poor sexual performance.

Remember until recently, in our culture no real man was supposed to complain to any medical person about his sexual prowess. For real men all the water, both seminal fluid and urine was to flow freely without any hindrance whatsoever. Poor flow was associated with ageing which was not about to be discussed with some young grandchild doctor in a clinic or hospital. It was more honourable to discuss such matters with elderly age mates or elderly traditional medical practitioners. They therefore came to the doctor as a last resort in acute retention when they could not pass urine completely and in unbearable pain.

It was against this background that I carried out several studies on benign prostatic hyperplasia in this locality at Kenyatta National Hospital. My literary contribution on benign prostatic obstruction is recorded as (Magoha, 1996, Magoha, 1998 and Magoha, 1998). Until recently the sole treatment for severe symptoms of benign prostatic hyperplasia involved surgery with transurethral resection of the prostate (TURP) as the gold standard and surveillance involving watchful waiting the only alternative. Although TURP is associated with low mortality a rate of 0.2%, the morbidity is substantial at 18%. The results of our studies in Nairobi reported that the orally administered drugs like finasteride was efficacious in the treatment of patients with moderate symptoms of prostatic obstruction from BPH. Finasteride is a potent 5- alpha reductase inhibitor which results in the decrease of intra prostatic and plasma levels of dihydro-testosterone (DHT) resulting in significant improvement in urinary symptoms, peak urinary flow rates and prostate volume reduction. Therefore now there is a choice between surgery and medical treatment in the management of patients with moderate symptoms of benign prostatic hyperplasia.

CANCER OF THE PENIS

This is one of the cancers that had not been studied and published previously by any scholar in this country hence my avid interest in it. I intended to find out epidemiological and clinical aspects of the disease in this locality and carried out several studies (Magoha and Kaale 1995 , Magoha 1995, and Magoha and Ngumi 2000) at the Kenyatta National hospital over 30 years from January 1970 to December 1999. The findings in these studies revealed that cancer of penis was rare in this locality representing only (0.1%) of all malignancies treated at Kenyatta National Hospital during the same period. Furthermore these findings established that cancer of the penis was the least common Urological tumour representing only (5.1%) of total despite the inclusion in the studies of the non circumcising Luo, Teso and Turkana tribesmen. These findings are significant for two reasons:

First they confirm and buttress the findings of (Burkit 1966) who had earlier reported uniform rarity of cancer of penis among the uncircumcised Ugandan tribes of Acholi and Lugbara, as well as in some tribesmen in southern Tanzania highlands. Williams, 1966 also reported similar rarity in the West Nile district where routine circumcision is not practised, and Elshleman reported similar findings from Shirati Hospital in Northern Tanzania, an area largely populated by uncircumcised Luos among others.

Secondly these findings contradict the findings of (Kyalwazi 1966) in Kampala where he reported cancer of the penis to be common among the uncircumcised Baganda representing 12% of all cancers. There is therefore the need for further investigation of this phenomenon in Uganda in order to get a clearer clinical picture there although it is known that the incidence of this disease varies widely according to Geographic distribution, and with hygienic standards, religious and various other socio-cultural practices among different communities from different parts of the world.

Despite the fact that the penis is an organ which is usually handled by the owner many times on a daily basis for several reasons, most patients (96%)

in these studies presented late with symptomatology of more than one year duration. These symptoms were predominantly glandular and prepuccial ulcers which should have been obvious to drive these patients in seeking earlier medical advice. The reason for this late presentation in this locality is due to delay in seeking appropriate medical advice from surgeons as a result of socio-cultural taboos, stigma, ignorance and shame because of the so called private part phenomenon. Furthermore most patients in these studies were younger with a mean age of 47.9 years compared to other parts of the world where the peak is reported in the sixth and seventh decades. It is therefore extremely important for clinicians in this locality to suspect penile cancer even in younger patients. The majority of these patients had penectomy (total or partial) and local excision as the gold standard followed by chemotherapy and external radiotherapy which was introduced in Kenya through collaboration between the Government of Kenya, the Government of Sweden, and the Karolinska Institute of Stockholm in 1968.

Circumcision and Cancer of Penis

The majority of penile cancer patients in these studies (72.7%) were uncircumcised despite the fact that Nairobi metropolis is largely surrounded by the Kikuyu, kamba and Masai tribes all of whom routinely circumcise. The development of cancer in the uncircumcised male has been attributed to the chronic irritative effects of smegma a by-product of bacterial action on desquamated cells that are within the preputial sac. Such exposure is accentuated by phimosis which is present in 25-75% of such uncircumcised patients in most large series (Wolblast, 1932). Although definitive evidence that smegma is a carcinogen has not been established, its relationship with penile cancer has been widely reported (Reddy and Baurah, 1963). But the more significant finding is the fact that all of the twelve patients (21.8%) who were circumcised in these studies, the majority nine patients representing (16.4%) of total were circumcised either as adolescents while three (5.5%) were circumcised as young adults.

Circumcision in adolescence or early adulthood is known not to prevent the development of penile cancer as has also been reported by others (Rogus, 1987). It is a well known fact that in this locality, the circumcising tribes circumcise during the adolescence and young adulthood as an initiation and rite of passage into manhood and adulthood. It is important to emphasise that this ritual circumcision does not prevent the development of penile cancer as shown by these studies. None of the patients was circumcised in the neonatal period. Penile cancer is virtually unknown among the Jewish community where neonatal circumcision is routinely practised. Neonatal circumcision is known to prevent the development of penile cancer (Cohen, 1984).

TO CIRCUMCISE OR NOT, A PROFESSIONAL AND PERSONAL OPINION

Circumcision is the oldest and most prevalent surgical procedure in boys and is performed throughout the world for various reasons. The surgical procedure of male circumcision involves the amputation of the prepuce (foreskin) from the shaft of the penis.

The Prepuce (Penile Foreskin)

The prepuce constitutes 33-50% of the penile foreskin as well as nearly all the penile fine touch neuroreceptors (Taylor, 1996). Therefore circumcision usually results in the permanent alteration of the anatomy, histology and function of the penis (Gold and Taylor, 1999). In the past the prepuce has largely been regarded as a vestigial structure and to date a more definitive function has not been ascribed to it. But as an accessible and ready source of human fibroblasts it has become a favourite tissue reservoir for cell culture biologists and hence basic scientific research. From this wealth of disparate information, it clear that the prepuce is an androgen dependent structure with complex intra dermal enzyme systems. These confer upon it a wide range of metabolic functions including the differential metabolism of various prostaglandin's which are copiously

produced throughout the male genital tract (Roerhborn et al. 1979, and Foldavari and Oguejiofor, 1987).

The Circumcision Procedure and my Personal Experience

Most of the worlds male population (over 80%) are uncircumcised. Most of the circumcised males in the world are either Muslims, Jews or African tribesmen. In Judaic societies the circumcision ritual is performed on the eighth day after birth according to the dictates of the holy book, but in Muslims and many African tribesmen, it is performed in adolescence and early adulthood as a rite of passage - an initiation to responsible adulthood and marriage. In East Africa including Kenya, while most Bantu tribes circumcise as described above as a form of initiation to adulthood, the Nilotic tribes usually do not circumcise except for medical reasons.

Most circumcisions in developing countries are still performed under unsanitary conditions by traditional medically unqualified circumcisers except for a small percentage of procedures which are carried out by qualified medical personnel under sterile conditions (Odesmir, 1997, Crawley and Kesner, 1998).

It is against this background information that I keenly carried out prospective studies at the Lagos University Teaching Hospital, the Duro Soley and the First Foundation medical centres in Lagos Nigeria from 1981-1987, and the Kenyatta National Hospital and the Nairobi hospital from 1988-1998, (Magoha 1990, and Magoha 1998). The first section of these studies involved 249 patients circumcised in Lagos Nigeria and Nairobi Kenya. One hundred and fifty two patients (61%) were circumcised as adolescents and young adults mostly as a rite of passage for cultural initiation to manhood. Only seventy nine patients (31.7%) were circumcised as neonates between the 8th and 30th day after birth for various reasons including religious requirements, parental requests, and various medical reasons such as phimosis and paraphimosis etc. This is a significant observation because it is widely known that neonatal

circumcision prevents the development of penile cancer. Sixteen other patients (6.4%) were circumcised as children between the ages of two months and twelve years, while two adult patients were circumcised as a form of treatment for early penile cancer.

The second section of these studies has even more interesting observations and results. It involved fifty previously circumcised patients with various complications referred to the author for specialised Urological treatment. The patients were referred by general surgeons, general medical practitioners, clinical officers, nurses, and public health technicians. The majority forty patients (80%) had been traditionally circumcised either by medically unqualified mass or single circumcisers. The operations were carried out under non sterile conditions and completely without any knowledge of the anatomy of the external genitalia including the penis. Only three patients in this study were circumcised by qualified medical doctors under sterile conditions. The other seven patients were circumcised by clinical officers, nurses, and public health technicians under sterile conditions. The complications which lead to the referrals were equally disturbing. The most serious complications included partial or complete amputation of the glans and shaft of penis in five patients (10%), gangrene of penis and scrotum in four patients (8%), meatal stenosis in three patients (6%), and complete loss of penile skin in two patients (4%). It is significant to emphasise that all the above serious complications followed traditional circumcision by unqualified traditional circumcisers under non sterile conditions. Other complications included infection, severe haemorrhage, haematoma, and incomplete circumcision resulting in secondary phimosis and buried penis.

My conclusion from both studies is that circumcision is a commonly performed operation but can have serious, life shattering and prolonged complications which sometimes result in death. It should therefore be performed only in medical institutions under sterile conditions and by suitably trained surgeons or other medical doctors for specific medical

indications. Ritual circumcision whether mass or single for cultural or religious reasons remains controversial and without medical benefit and should be totally discouraged. At the moment we are involved in a randomised, controlled multicentre trial of male circumcision to reduce HIV incidence in Kisumu, Kenya involving the Universities of Nairobi, Manitoba Canada, and Washington Seattle, USA. This trial is being carried out at the Lumumba health centre in Kisumu in conjunction with Kisumu City Council. The study intends to corroborate the numerous epidemiological studies which have reported a significant association between the lack of male circumcision and the risk of HIV infection through heterosexual intercourse. Others also have reported in prospective studies that uncircumcised males are 2-8 times more likely to acquire HIV infection. We are investigating this phenomenon.

Female circumcision or more appropriately female genital mutilation as practised by some communities as a rite of passage to womanhood is mentioned here only to be totally condemned as absolutely unnecessary, without clinical benefits and prone to many complications and should therefore never be performed (Magoha G.A, and Magoha O.B 2000).

TESTICULAR CANCER

Testicular cancer is rare in the general population occurring at the rate of two per 100,000 male population annually, but remains the commonest malignancy in white males between the ages of 15-35 years (Abrat et al 1999). The incidence varies with different geographical regions and race being more common in whites and rare in blacks and almost all non Caucasian populations such as Asians, Arabs, and black Americans etc. Denmark has the highest incidence of 4.9 per 100,000 male population annually, and Nigeria in Africa has the lowest at 0.1 per 100,000 male population annually (Daniels et al 1981). Oettle in 1964 reported an incidence rate of 0.2 per 100,000 male population annually among South African blacks in Johannesburg . Testicular cancer is known to be associated with testicular mal descent (Daniels et al. 1981), but definite

aetiology for testicular cancer remains largely unknown although age, genetic factors, repeated infection and mumps orchitis have all been incriminated (Waterhouse, 1985).

While at the Lagos University Teaching Hospital, I carried out a five year (1979-1983) prospective study on testicular cancer in Nigerians in Lagos, the results of which were published in East African Medical Journal, (Magotha 1999). This particular study confirms that cancer of the testis is rare in Nigerian Africans as reported by others. Only eight patients with testicular cancer were confirmed out of three hundred and forty four testicular biopsies carried out.

Having established that cancer of the testicle was rare among Nigerian Africans, and coupled with the absence of any published data on this cancer in Kenya, we embarked on the study of testicular cancer over a fifteen year period 1983-1997. Our main objective in this study was to determine the prevalence, clinical characteristics, treatment methods and prognosis of testicular cancer in Kenyans at Kenyatta National Hospital, published in (Opot and Magotha 2000, and Magotha 1996). The results indicated that testicular cancer was rare in this locality and represented only 0.02% of all hospital admissions during the same period. The majority of these patients were in the 15-35 year age group and 10.3% were associated with mal descent of the testis as reported in the Caucasians. Germ cell cancers constituted 89.8% in this study.

Testicular cancers are known to be of germ cell origin in 90-95% of the cases, and constitute the most common malignancy in men between the ages of 15-35 years (Ulbright, 1993). These Kenyan footprints confirm what has been published by others about testicular cancer being rare in black Africans. These patients were treated with radical inguinal orchidectomy, followed by external radiotherapy and combination chemotherapy of vincristine, cyclophosphamide and adriamycin but without cisplatin. Prognosis in these patients was poor at only 39% survival after five years. It is strongly advised that the use of cisplatin

based combination chemotherapy regimen which is associated with greater than 90% cure rates, should be included as a component of testicular cancer multimodal, multidrug management at the Kenyatta National Hospital.

It is significant to note that testicular cancer currently evokes widespread interest among Urologists world wide because it has become one of the most curable solid cancers irrespective of the clinical stage. Prognosis of testicular cancer has improved dramatically even in advanced stages because of better staging techniques, reliable serum tumour markers (alpha fetoprotein – AFP, and beta human chorionic gonadotrophin – B-HCG), and surgical resection after cytoreductive therapy. This multimodal approach using improved surgical techniques, radiotherapy and cisplatin based combination chemotherapy has resulted in cure rates of more than 90% in germ cell cancers of the testis.

TORSION OF TESTES (TWISTED TESTES)

Torsion of the testes is a serious but remediable Urological emergency which is common in children and adolescents in Europe and North America where the incidence is approximately one in every 4000 males under 25 years of age. It is most common in the 12-18 year old age groups after which the incidence slowly decreases (Barada et al 1989). A few cases appear during the neonatal period. It usually is associated with sudden, severe and agonising pain on the affected testicle during such normal moments as love making, involvement in sports, climbing stairs or even walking home, or to a lecture theatre etc. This is followed by swelling which is due to the obstruction of the venous blood drainage with secondary oedema and haemorrhage (bleeding) and subsequent arterial obstruction results. The affected testicle if untreated ultimately turns blue and black due to ischaemic necrosis (death) due to lack of blood supply. Torsion of both testes is possible and if untreated invariably leads to infertility (inability to have children) which is a very serious matter especially in Africans.

In the Sub Saharan Africa in general and Kenya in particular, testicular torsion as a disease was thought to be uncommon and was therefore not taught in the medical schools with the rigorous emphasis that it deserved. Painful testis was treated as infection (orchitis) in the first instance. The very sudden and extremely severe onset of pain stimulated us to investigate thoroughly the clinical management of these patients.

While still teaching at the College of Medicine of the University of Lagos we started to surgically explore all testes with suspected diagnosis of torsion or missed torsion irrespective of the age at the Lagos University Teaching hospital and later at Kenyatta National Hospital. Many of these testes had completely twisted (strangulated) themselves like a completely twisted water pipe blocking the flow of water. The twisted testis became blue and/ or black, then swollen, finally becoming smaller and smaller and eventually, disappearing resulting in a missing testicle (atrophy). The absence of such a missing testicle if discovered suddenly by its owner in a public place such a bus stop, market or a busy street may actually be blamed on some imagined magical powers of a known enemy and could even result in mob justice by the public in some parts of Kenya and Nigeria.

For the next fifteen years I studied testicular torsion first at the Lagos University Teaching Hospital in the early and mid eighties and later at the Kenyatta National Hospital and published the results as follows:

- (a) Osegbe, O. ,Ogunkua, O., and Magoha, G. A. O.
‘Testicular torsion rate in Nigerians’.
Tropical and Geographic Medicine Journal 39 : 372-372, 1987.
- (b) Magoha, G. A. O.
‘Testicular torsion salvage rate in Nigerians in Lagos’.
East African Medical Journal, 66 : 324-327, 1989.

The results of the Nigerian study which I carried out in the early eighties revealed a high incidence of testicular torsion in young adults of 21 years and above. Similar findings had been reported earlier independently by

(Osegbe and Amaku, 1981) at the Lagos University Teaching Hospital, and (Udeh in Enugu 1984). These findings were in contrast to those in Caucasians where the peak incidence is reported to be in adolescents of twelve to eighteen years of age. The cause of this age difference is not clear, but may be responsible for the high rate of initial misdiagnosis and delayed scrotal exploration and resulting in more testicular loss due to a low index of suspicion in the adult age group. Testicular salvage rate of 100% was reported when testicular exploration was effected within six hours of the onset of symptoms and continued to decline reaching 0% for explorations performed more than 48 hours since onset of symptoms. These study findings indicate that time is the single most important factor in saving the testis and that the first doctor to see the patient must suspect testicular torsion otherwise the testis will be lost.

The Nairobi studies (Magoha, 1995., and Magoha, 1999) which I carried out between 1988 and 1995 involved 110 patients confirming that torsion of the testis was common in this locality contrary to previous reports. About half of these patients were young adults of 21 years and above similar to my Lagos study results reported above but in contrast to the findings in Caucasians. The overall salvage rate was only 21% but was 100% for those patients who presented early and had their testicles explored, untwisted and fixed within 6 hours from the onset of symptoms. All patients who presented to the surgeon more than 48 hours after the onset of symptoms lost their testes. Furthermore, they had been empirically placed on antibiotics and analgesics on the presumption that they had infection (epididymorchitis) by the first doctor to examine them due to the low index of suspicion and the reversed age pattern before eventual referral to the surgeon. Recurrent testicular torsion was reported in four percent of the patients emphasising that testicular fixation should be effected on both sides using none absorbable silk sutures.

The most pathetic but significant findings we reported in my study of 'missed torsion of the testis' published in the Health Line Journal in 1999. All the thirty patients in this study had much earlier presented either to

medical doctors, clinical officers or nurses and were treated with antibiotics and analgesics for testicular infection and not followed up before presenting to the surgeon much later. They presented on noticing absent or disappearing testis. The mean age was 21.3 years. Seven of these patients presented with both testes completely disappeared (atrophied) after several episodes of missed torsion of testis. These young boys were rendered Infertile. The other twenty three patients who had unilateral absence or disappearing of the testis had their remaining testis were fixed with non absorbable sutures in time to retain their fertility as one functioning testis is adequate.

From the above results we commenced a vigorous awareness education campaign of medical doctors, medical students, consultants and paramedical staff (clinical officers and nurses) through hospital ward and grand rounds, conferences and seminars, repeated examination questions and recommended thesis topics for postgraduate students studying for M.Med. Surgery degree etc. This was effectively to promote awareness, prompt diagnosis and quick referral by general medical practitioners and immediate testicular exploration and fixation by surgeons. These findings also reached the rest of the world judging by requests for hundreds of reprints received from urologists world wide and from scientific presentations at conferences in Montreal Canada etc. To date I have instructed my surgical registrars and residents to call me out in the middle of the night if need be to save a testis and preserve fertility.

MALE ERECTILE DYSFUNCTION

Erectile dysfunction is defined as the persistent inability to achieve and maintain an erection sufficient for satisfactory sexual performance and not the occasional difficulty that may be experienced by men every once in a while. Satisfactory sexual performance includes the adequate penetration of the vagina. Traditionally this condition has been called impotence, but the term erectile dysfunction is more precise as it refers specifically to a clinical problem of erection. Furthermore men with erectile

(Osegbe and Amaku, 1981) at the Lagos University Teaching Hospital, and (Udeh in Enugu 1984). These findings were in contrast to those in Caucasians where the peak incidence is reported to be in adolescents of twelve to eighteen years of age. The cause of this age difference is not clear, but may be responsible for the high rate of initial misdiagnosis and delayed scrotal exploration and resulting in more testicular loss due to a low index of suspicion in the adult age group. Testicular salvage rate of 100% was reported when testicular exploration was effected within six hours of the onset of symptoms and continued to decline reaching 0% for explorations performed more than 48 hours since onset of symptoms. These study findings indicate that time is the single most important factor in saving the testis and that the first doctor to see the patient must suspect testicular torsion otherwise the testis will be lost.

The Nairobi studies (Magoha, 1995., and Magoha, 1999) which I carried out between 1988 and 1995 involved 110 patients confirming that torsion of the testis was common in this locality contrary to previous reports. About half of these patients were young adults of 21 years and above similar to my Lagos study results reported above but in contrast to the findings in Caucasians. The overall salvage rate was only 21% but was 100% for those patients who presented early and had their testicles explored, untwisted and fixed within 6 hours from the onset of symptoms. All patients who presented to the surgeon more than 48 hours after the onset of symptoms lost their testes. Furthermore, they had been empirically placed on antibiotics and analgesics on the presumption that they had infection (epididymorchitis) by the first doctor to examine them due to the low index of suspicion and the reversed age pattern before eventual referral to the surgeon. Recurrent testicular torsion was reported in four percent of the patients emphasising that testicular fixation should be effected on both sides using none absorbable silk sutures.

The most pathetic but significant findings we reported in my study of 'missed torsion of the testis' published in the Health Line Journal in 1999. All the thirty patients in this study had much earlier presented either to

dysfunction usually retain other sexual functions such as sexual desire and the ability to achieve orgasm and ejaculation (Krane et al, 1989). It is estimated that it affects up to 30 million men in the United States and an estimated 152 million men world wide (Ayta et al 1999). It is age associated with estimated prevalence rates of 39% among men forty years old and 70% among those over seventy years of age (Feldman et al. 1994). Erectile dysfunction may be mild, moderate or complete. At seventy years for example complete erectile dysfunction is present in 15% of the men, while moderate erectile dysfunction is present in 34%, and mild in 21% of the men making it one of the most common diseases of men. The actual number of patients may even be greater than estimated as many men suffer in silence. In this locality, although no epidemiological study similar to the Massachusetts male ageing study has been carried out, erectile dysfunction is presumed to be common. However, until recently, most patients did not consult the medically qualified doctors and other health workers. They preferred to consult the traditional medical practitioners and healers because of the stigma and socio-cultural barriers, myths and taboos associated with erectile dysfunction.

The penis in very simple terms is composed of corpus spongiosum (where the urethra passes) and the erectile tissue, the two corpora cavernosa all of which are surrounded by a tough fibrous Buck's fascia. The erectile tissue is a sponge like mesh of interconnected cavernosal spaces and venous sinusoids. During erection blood rushes into the penis and fills the sponge like tissue resulting in an elongated and rigid penis that can penetrate the vagina.

The progress in the basic research of the anatomy, physiology and pharmacology of penile erection has changed our understanding of the controversies related to the aetiology of the erectile dysfunction (Lue, 1986). Until the early eighties, classical teaching held that more than 90% of erectile dysfunction was psychogenic in nature. Recent clinical studies have indicated that at least 50% of the patients with erectile dysfunction have organic causes such as arterial insufficiency, venous incompetence

and sinusoidal disorders, neurological pathology, (Junemann et al. 1989). In simpler terms, most cases of organic erectile dysfunction are associated with underlying health problems such as diabetes mellitus, high blood pressure and vascular diseases such as hardening of the arteries. Erectile dysfunction may also be associated with psychiatric conditions such as depression, as well as some prescription medications such as antihypertensives, antidepressants, non steroidal anti inflammatory agents, H2 antagonists and even substance abuse, etc. (Krane et al 1983). Eliminating or modifying the doses of these drugs may therefore relieve erectile dysfunction.

Erectile dysfunction can also be caused by physical abnormalities of the penis such as Peyrone's disease and hormonal abnormalities such as increased levels of prolactin or decreased levels of testosterone and hyper or hypothyroidism. Other habits associated with erectile dysfunction include cigarette smoking and excessive consumption of alcohol. There are also surgical and traumatic causes which include renal transplant, and radical pelvic surgery all of which are known to cause changes in the circulation to the penis resulting in erectile dysfunction (Jevitch et al. 1982, Magoha, 1995). Erectile dysfunction may also result from one or a mixture of these conditions.

My interest in erectile dysfunction dates back to 1990 when I was carrying out a study on the relationship between varicocele (overfilling with blood of the blood vessels- veins in the scrotum) and infertility in male Kenyans (Magoha, 1994). I noticed that quite a number of patients had something extra to say at the end of the examination, and it is the manner in which they said it that aroused my suspicion. When we had completed history taking and physical examination, and the patient was at the door on his way out of the clinic, he turned round and shyly said 'anyway doctor, I also have another very small problem. The 'very small problem' would eventually turn out to be persistent inability to achieve and maintain erection sufficient for satisfactory sexual performance. The lack of confidence exhibited by these patients is due to the stigma, myths and the

feeling of guilt and embarrassment associated with erectile dysfunction in this locality and the fact that there exists a large communication gap between these patients and their doctors about sexual function. It is important to emphasise at this stage that sexual health remains a very sensitive topic for many men world wide and therefore may decrease the likelihood that men who suffer from the condition will seek medical help from qualified doctors.

Therefore it is incumbent upon us as health care professionals to facilitate communication about this important medical condition and help the many men who may be suffering silently. Unfortunately, during this early part of my interest in erectile dysfunction, its treatment world wide was generally unsatisfactory and disappointing. The available methods of treatment consisted mainly of four categories including psychotherapy, psycho sexual counselling and education (Rosen and Leiblum, 1994); mechanical devices such as the implantation of inflatable penile prostheses (Garber 1996, Evans, 1998) and vacuum extraction devices (Osullivan et al, 1994); pharmacological agents such as the intracavernosal (intrapenile) injection of vasoactive substances such as alprostadil, a prostaglandin E1 (Linnet and Ogrinc 1996), transurethral delivery of alprostadil (Padmanathan et al, 1997); and surgical such as venous or arterial surgery (Wesper et al, 1989). The most efficient of these methods was the injection of the penis with alprostadil but this method of treatment remains a very unpopular with African men in this locality. The main reasons for this was 'fear of needles and self injection', pain and the lack of privacy from the partner who invariably had to know that the sexual process had to be preceded by a penile injection. In African tradition this demoralises the men as it tends to imply that they are 'not men enough'.

The oral administration of drugs in the form of tablets is known to be the easiest and most acceptable form of treatment for male erectile dysfunction. Specifically, the ideal oral pharmacological agent to be used for the treatment of erectile dysfunction should address the underlying causes, be easy to use, provide consistent results, be rapidly and completely

metabolised, have low toxicity levels and with minimal side effects. Unfortunately, until recently only yohimbine hydrochloride was the most widely used oral medication for erectile dysfunction but the outcome has been equally disappointing even when used in high doses (Kunelius et al, 1997). Currently, there is a world wide increase in the prevalence of male erectile dysfunction which is associated with the rapidly ageing populations. The newly available and highly publicised oral methods of treatment such as sildenafil (viagra) and tadalafil, which are both phosphodiesterase type 5 inhibitors are now raising challenging policy issues in many countries including Kenya. As a member of the Erectile Dysfunction Advisory Council (EDAC) for Africa, Middle East, India, Pakistan and Turkey, the International Society of Impotence Research (ISIR), and the African Society of Impotence Research (ASIR), I have been involved in many of these policy issues particularly related to the orally administered sildenafil. We held many symposia, seminars and executive meetings on erectile dysfunction in London United Kingdom, Cape Town South Africa, Cairo Egypt, Dubai United Arab Emirates, Kampala Uganda, and Nairobi Kenya organised by the Erectile Dysfunction Advisory Council (EDAC), the International Society of Impotence Research (ISIR), and the African Society of Impotence Research (ASIR). These international involvement with Pfizer culminated in my launching of sildenafil as a form of treatment in Nairobi Kenya in early December 1998, and in Kampala Uganda in mid December 1998.

We also organised local seminars, workshops, symposia and continuous medical education for surgeons, medical doctors, and other health workers in Kisumu, Mombasa, and Eldoret to educate them about erectile dysfunction. We emphasised that it was time to dispel the belief that erectile dysfunction was a solely psychological condition or simply part of growing older. We also educated them about the underlying medical conditions, and the modifiable risk factors that frequently contributed to erectile dysfunction. The elimination of these modifiable risk factors involved the elimination or reduction of alcohol and cigarette consumption,

elimination of substance abuse, and to modify the dosage or switch medications contributing to erectile dysfunction. We also emphasised that for the best results, the health workers should always treat the whole patient and not just the erectile dysfunction. There could also be sensitive cultural and religious issues which may inhibit the patient from effectively communicating with them. They should therefore dedicate enough time for each patient according to individual needs.

It is against this background that I carried out a prospective open label extension study within Nairobi metropolis. The study was carried out at the urology clinics at Kenyatta National Hospital, The Nairobi hospital, and the Hurlingham urology clinic. The main objective of the study was to determine the effectiveness of oral sildenafil in the treatment of male erectile dysfunction in Nairobi, (Magoha, 1998., Magoha, 2000). The study involved 219 adult male patients with erectile dysfunction all of whom were clinically evaluated and treated by one investigator. The age range was 33-80 years with a peak incidence in the 60-69 year age group. About (54.3%) of these patients had organic causes of erectile dysfunction, (38.8%) of the patients had psychogenic causes, and (6.85%) of the patients had mixed causes (both organic and psychogenic). This study confirmed erectile dysfunction is common in this locality and that oral sildenafil (viagra) was an effective, well tolerated, simple, and convenient form treatment for male erectile dysfunction although the drug was only recently introduced in this locality. However, the high cost of this method of treatment at ten dollars per 50mg tablet remains its greatest limitation. The injection of the penis and other methods of treatment should therefore only be applied to those patients who fail to benefit from this form of treatment.

There is urgent need to medicalise and destigmatise erectile dysfunction from the many cultural taboos and myths associated with it in this locality. Erectile dysfunction should be regarded just as any other disease and patients in this locality should seek medical help with the usual dignity

and honour without shame. In this regard medical doctors and all other health care personnel are advised to be very patient, understanding and accommodating to their patients and to start by recognising the potential value of altering the modifiable risk factors as a first therapeutic step .

THE POSTGRADUATE TRAINING OF SURGEONS

It would be unfair to this most distinguished and scholarly audience to end this inaugural lecture without saying something about the important role which the academic department of surgery of the University of Nairobi and its members of staff including myself have played in the training of surgeons for this country, Africa and the world at large.

The first article on the postgraduate training of surgeons in East Africa was written by professor Roy Douglas and published in the East African Medical Journal in 1969 almost thirty five years ago (Roy, 1969). Since then there has been many changes, challenges and developments with regard to postgraduate surgical training. Postgraduate training of surgeons in Kenya has become the primary concern of the academic department of surgery of the University of Nairobi and the ministry of health of the government of Kenya. The challenges for the surgeon trained in this locality is that they must have adequate knowledge of the various diagnostic procedures and should be able to carry them out themselves. They must be able to manage all forms of trauma by themselves or in exceptional circumstances in association with an orthopaedic surgeon. They must also have basic knowledge of regional and general anaesthesia, and are expected to have functionally sufficient knowledge of thoracic surgery, neurosurgery, paediatric, and plastic surgery, urology and ear nose and throat surgery. The academic department of surgery also trains anaesthetists and ear, nose and throat (ENT) surgeons while the department of ophthalmology trains ophthalmologists.

Since the inception of the Master of Medicine postgraduate training programme at the University of Nairobi in 1967, more than 350 surgeons have been trained in the fields of general surgery (64%), anaesthesia (16%),

ophthalmology (12%), and ENT surgery (8%). Eighty one percent of these surgeons were Kenyans. The other nineteen percent were foreigners (Magoha, and Ngumi, 1999). The majority of the foreigners (79%) were from African countries like Uganda, Sudan, Tanzania, Cameroon, Ethiopia, Nigeria, Liberia, Egypt and South Africa. The rest came from India Pakistan and Europe.

I joined the training process in January of 1988, and I am very honoured and humbled to report that to date, I have supervised to completion some thirty five Master of Medicine in surgery theses for surgeons who have graduated over the past fifteen years, and I am currently supervising three others.

Mr Vice Chancellor, the immediate environmental impact of my research works on genital cancer and dysfunction has resulted not only the free flow of water, but the free flow of knowledge from one doctor to another within this country and beyond. These are my Urological footprints in Kenya which I hope have made modest but significant contribution to the surgical history of this country and locality 'that water may flow'.

Thank you.

REFERENCES

1. Magoha, G. A. O.
Ten Years Experience With Chronic Prostatitis in Africans.
East. Afr. Med. J. 1996., 73 : 176-178.
2. Ayumba, B. R. And Magoha, G. A. O.
Management of Fournier's Gangrene at Kenyatta National Hospital.
East. Afr. Med. J. 1998, 75 : 370-373.
3. Ayumba, B. R. and Magoha, G. A. O.
Epidemiological Aspects of Fournier's Gangrene at Kenyatta National Hospital.
East. Afr. Med. J. 1998., 75: 582-585.
4. Rowe, I. F. , and Magoha, G. A. O.
Measurement of Serum C-Reactive Protein Concentration After Renal Transplantation.
Dial. Nephrol. Transplant. J.1987, 2 : 39-41.
5. Magoha, G. A. O. , and Ngumi, Z. W. W.
Renal Transplantation During the Twentieth Century: A Review.
East. Afr. Med. J. 2001., 78 : 317-321.
6. Magoha, G. A. O., Mwanda, W. O., and Afulo, O. K.
Autologous Blood Transfusion In Surgical Practice At Kenyatta National Hospital.
East. Afr. Med. J. 2001., 78 : 564-567.
7. Boring, C.C., Squires, T. S., Tong, T. Montgomery, S.
Cancer Statistics 1994 Ca-A Cancer
J. Clin Invest., 1994., 44:7.
8. Schroder, F. H.
Prostate Cancer: To Screen or Not Screen.
Brit. Med. J. 1993, 306: 407.

9. Abrat., R. P., Reddi , V. B., and Sarembok, L. A.
Testicular Cancer and Cryptochirdism.
Brit. J. Urol .1992., 70:656.
10. Waterhouse, J. H.
Epidemiology of Testicular Tumours.
J. Roy. Soc. Med. 1965., 78:3.
11. Harish, K. And Ravi.
The Role of Tobacco in Penile Cancer
Brit. J. Urol. 1995., 75:375.
12. Muir, C. S. and Nectoux, J.
Epidemiology of the Cancer of Penis and Testis.
Nat. Cancer Inst. Monogr. 1979., 53:157.
13. Goldstein, A. G., and Wilson, E. S.
Carçinoma of the Seminal Vesicles .
Brit. J. Urol. 1973., 45:211.
14. Ray, B. and Whitmore, W. F. Jr.
Experience with Carcinoma of the Scrotum.
J. Urol. 1977.,117:19.
15. Dodge, O. G.
Cancer of the Prostate in Ugandan Africans.
Cancer, 1963., 1264-1268.
16. Vint, F. W.
Malignant Disease in the Natives of Kenya.
Lancet, 1935., 628-630.
17. Yeboah, E. D, and Quartey, J. K. M.
Low Dosage Stilboestrol in The Management of Cancer of the Prostate.
Ghana Med. J. 1977., 16: 13.

18. Nkposong, E. O., and Lawani, J.
Primary Carcinoma of the Prostate in Ibadan.
West Afr. Med. J. 1973., 22: 108.
19. Amaku, E. O., Da Rocha Afodu, J. T., And Elebute, E. A.
Prostatic Obstruction in Nigerians.
West. Afr. Med. J.1971., 20: 189.
20. Udeh, F. N.
Prostatic Carcinoma in Nigerians - A Ten Year Retrospective Study.
Int. Urol. Nephrol. J. 1981., 13: 159.
21. Osegbe, D. N., and Magoha, G. A. O.
The Effect of Rectal Examination on the Serum Phosphatase Levels in Benign and Malignant Prostatic Disease.
Postgrad. Med. J.1982., 58: 763-756.
22. Magoha, G. A. O. , Odunjo, E. O., And Amaku, E. O.
Incidental Carcinoma in Surgically Resected Prostates in Nigerians.
Nigerian. Quart. J. Hosp. Med. 1985., 2: 9-12.
23. Magoha, G. A. O.
Sub Capsular Orchidectomy in the Management of Prostatic Carcinoma in Nigerians.
East. Afr. Med. J. 1989., 66: 400-403.
24. Magoha, G. A. O.
Prognosis in Poorly Differentiated Cancer of the Prostate.
Nrb. J. Med. 1990., 16: 17-19.
25. Magoha, G. A. O.
Transperineal Needle Biopsy of the Prostate in Nigerians - A Prospective Study.
Medicom. J. 1990., 10: 13-14.

26. El- Mahdi, A. H., Cliphant, C. D., and Schellhammer, P. F.
Prognostic Value of Poorly Differentiated Prostatic Adenocarcinoma.
Urol. 1983., 21: 566.
27. Magoha, G. A. O.
Epidemiological and Clinical Aspects of Incidental Carcinoma of the Prostate in Africans: Experience at the Lagos University Teaching Hospital Lagos, and Kenyatta National Hospital Nairobi.
East. Afr. Med. J. 1995 : 283-287.
28. Magoha, G. A. O.
Management and Survival in Advanced Prostate Cancer in Nairobi.
East. Afr. Med. J. 2000., 77:260-263.
29. Magoha, G. A. O.
Screening and Early Detection of Prostate Cancer.
East. Afr. Med. J. 1996., 73 :453-456.
30. Magoha, G. A. O.
Cancer of the Male Genital Tract.
East. Afr. Med. J.1995., 72 : 545-546.
31. Berry, S. J., Coffey, D. S., Walsh, P. C., and Ewing , L.L.
The Development of Benign Prostatic Hyperplasia With Age.
J. Urol. 1984., 132 : 474-479.
32. Garraway, W. M., Collins, G. N. and Lee, R. J.
High Prevalence of Benign Prostate Hypertrophy in the Community.
Lancet. 1991., 338 : 469-471.
33. Mckelvie, G. B., Collins, G. N., Heir, M., and Rogers A. C. N.
A Study of Benign Prostatic Hyperplasia, A Challenge to British Urology.
Brit. J. Urol., 1993., 71 : 38-42.

34. Jacobsen, S. J., Jacobson, D. J. and Girman, C. J. et al.
The Natural History of Prostatism: Risk Factors for Acute Urinary Retention.
J. Urol., 1997., 158 : 481-487.
35. Jacobsen, S. J. , Girman., C. J. and Guess, H. A. et al.
Do Prostate Size and Urinary Flow Rates Predict Health Seeking Behaviour for Urinary Symptoms in Men?
Urology, 1995., 45 : 64.
36. Magoha, G. A. O.
Medical Management of Benign Prostatic Hyperplasia: A Review.
East. Afr. Med, J. 1996., 73 : 453-456.
37. Magoha, G. A. O.
Benign and Malignant Prostatic Obstruction.
East. Afr. Med. J. 1998., 75 : 257-257.
38. Magoha, G. A. O.
Finasteride in the Treatment of Patients With Moderate Symptoms of Benign Prostatic Hyperplasia.
East. Afr. Med. J. 1998., 75 : 260-262.
39. Magoha, G. A. O., and Kaale. R. F.
Epidemiological and Clinical Aspects of Carcinoma of Penis at Kenyatta National Hospital.
East Afr. Med. J. 1995., 72:359-361.
40. Magoha, G. A. O.
Management of Carcinoma of the Penis.
East. Afr. Med. J.1995., 72:547-550.
41. Magoha, G. A. O. and Ngumi Z. W. W.
Cancer of the Penis at Kenyatta National Hospital.
East. Afr. Med. J. 2000., 77: 526-530.

42. Burkit, D. P., Hutt, M. S. R. and Slavin G.
Clinicopathological Studies of Cancer Distribution in Africa.
Brit. J. Cancer. 1968., 22:1-3.
43. Williams, E. H.
A Local Cancer Registry an a Mission Hospital in Uganda.
East. Afr. Med. J. 1966., 43: 200-207.
44. Kyalwazi, S. K.
Carcinoma of the Penis: A Review of 153 Patients Admitted to Mulago Hospital Kampala Uganda.
East. Afr. Med. J. 1966., 43: 415-425.
45. Wolblast, A. L.
Circumcision and Penile Carcinoma.
Lancet, 1932., 1:150-153.
46. Reddy, D. And Baurah, I.
Carcinogenic Action of Smegma.
Acta. Pathol, 1963., 75: 414-420.
47. Rogus, B. J.
Squamous Cell Carcinoma of Penis in a Young Circumcised Man.
J. Urol., 1987., 138: 861-862.
48. Cohen, M., and Mccurdy, S.
Circumcision and the Risk of Cancer of the Penis: A Life Table Analysis.
Amer. J. Dis. Child., 1980., 134: 484-486.
49. Taylor, J.
The Prepuce: Specialised Mucosa of Penis and its Lose to Circumcision.
Brit. J. Urol. 1996., 77:291-295.
50. Cold, C. J., And Taylor, J. R.
The Prepuce
Brit. J. Urol. Int. 1999., 83: (Suppl): 34-44.

51. Roerhborn, C. J. , Lange, J. L. And George, F. W.
Changes in Amounts and Intercellular Distribution of Androgen Receptors in Human Foreskin as a Function of Age.
J. Clin. Invest. 1987., 97: 44-47.
52. Foldvari, M. And Oguejiofor, C. J.
Metabolism Studies on Prostaglandin E1 in Human Foreskin.
J. Drug. Metab. Pharmacokinet. 1979., 22: 111-120.
53. Odesmir, E.
Surgically Increased Complication Risks with Mass Circumcisions.
Brit. J. Urol. 1997., 80: 136-139.
54. Crawley, J. P. , And Kesner, K. M.
Ritual Circumcision (Umkwetha) Among the Xhosa of Ciskei.
Brit. J. Urol. 1990., 66: 318-321.
55. Magoha, G. A. O.
Local Infiltration and Spermatic Chord Block for Inguinal, Scrotal, and Testicular Surgery.
East. Afr. Med. J.,1998.,75:579-581.
56. Magoha, G. A. O.
Circumcision in Various Nigerian and Kenyan Hospitals.
East. Afr. Med. J. 1999., 76: 583-586.
57. Magoha, G. A. O., And Magoha, O. B.
The Current Global Status of Female Genital Mutilation- A Review.
East. Afr. Med. J. 2000., 77 : 64-68.
58. Daniels, J. L., Stutzman, R. E., And Mcleod, D. G.
A Comparison of Testicular Tumours in Blacks and Whites.
J. Urol. 1981.,125 : 341.
59. Oettle, A. G.
Tumours of the Testis in South Africa.
The. Leech Xxxiv, 1964., 142.

60. Waterhouse, J. A. H.
Epidemiology of Testicular Tumours.
J. Roy. Soc. Med. 1985., 78: 3.
61. Gilbert, J. B.
Tumours of the Testis Following Mumps Orchitis: Case Report; and Review of 24 Cases.
J. Urol. 1944., 51 : 296.
62. Magoha, G. A. O.
Bilateral Primary Malignant Lymphoma of the Testis: Case Report.
East. Afr. Med. J. 1996., 73 : 151-152.
63. Magoha, G. A. O.
Testicular Cancer in Nigerians.
East. Afr. Med. J. 1995., 72 :554-556.
64. Opot, E. N., And Magoha, G. A. O.
Testicular Cancer at Kenyatta National Hospital Nairobi..
East Afr. Med. J. 2000., 77 : 80-85.
65. Barada, J. H., Weingarten, J. L. and Cromie, W. J.
Testicular Salvage and Age Related Delay in Presentation of Testicular Torsion.
J. Urol. 1989., 142 : 746.
66. Osegbe, D. N., Ogunkua, O., and Magoha, G. A. O.
Testicular Torsion Rate in Nigerians.
Trop. And Geog. Med. J. 1987., 39 :372.
67. Magoha, G. A. O.
Testicular Torsion Salvage Rate in Nigerians in Lagos.
East. Afr. Med. J. 1989., 66: 324-327.
68. Magoha, G. A. O.
Torsion of the Testis in Africans in Nairobi.
East. Afr. Med. J. 1995., 72 : 758-760.

69. Magoha, G. A. O.
Missed Torsion of the Testis.
Health. Lin. J. 1999., 3: 52-54.
70. Osegbe, D. N., And Amaku, E. O.
Torsion of Testis in Nigerians.
Afr. J. Med. Sci. 1981., 10 : 97.
71. Udeh, F. N.
Testicular Torsion in Nigeria - Its Problems and Care for Prophylactic Surgery.
Proc. Xiith. Sci. Conf. Nig. Surg. Res. Soc. 1984.
72. Krane, R. J. , Goldstein, I., and Saenz De Tejada, I.
Importence.
New. Engl. J. Med. 1989., 321 : 1648.
73. Feldman, H. A., Goldstein, I., Harzichristou, D. G., Krane, R. J. et al.
Impotence and its Medical and Psycho Social: Results of the Massachusetts Male Ageing Study.
J. Urol. 1994., 151 : 54-61.
74. Lue, T. F., and Tanagho, E. A. et al.
Physiology of Erektion and Pharmacological Management of Impotence.
J. Urol. 1986., 137 : 829-836.
75. Jevitch, M. J., Edson, N. , And Jarman, W. D. Et Al.
Vascular Factors in Erectile Failure in Diabetics.
Urology, 1982., 19 : 163-168.
76. Magoha, G. A. O.
Priapism: A Historical and Update Review.
East. Afr. Med. J. 1995., 72 : 399-401.
77. Goldstein, I. and Krane, R. J.
Drug Induced Sexual Dysfunction.
World. J. Urol. 1983., 1 : 239.

78. Magoha, G. A. O.
The Role of Varicocelectomy in the Management of Infertile Males With Varicoceles.
East. Afr. Med. J. 1994., 67 : 800-802.
79. Rosen, R. C. , Leiblum, S. R. And Spector, I.
Psychologically Based Treatment for Male Erectile Disorder. A Cognitive Interpersonal Model.
J. Sex. Mar. Ther. 1994., 20 : 67-85.
80. O'sullivan, D. C., Munson, K. W., and Chilton, C. P.
Impotence: First Line Treatment With Vacuum Device.
J. Urol. 1994., 151 : 347-349.
81. Linet, O. I., And Ogrinc, F. G.
Efficacy of Intracavernosal Alprostadil in Men With Erectile Dysfunction.
New. Engl. J. Med. 1996., 334 : 873-877.
82. Padma-Nathan, H., Hellstrom, W. J. G., And Kaiser, F. E. Et Al.
Treatment of Men With Erectile Dysfunction With Transurethral Alprostadil.
New. Engl. J. Med. 1997., 336 : 1-7.
83. Evans, C.
The Use of Penile Prosthesis in the Treatment of Impotence.
Brit. J. Urol.. 1998., 81 : 591-598.
84. Ayta, I. A. ,Mckinley, J. B., And Krane, R. J.
The Likely World Wide Increase in Erectile Dysfunction Between 1995 and 2025 and Some Possible Policy Consequences.
Bju. Int. 1999., 84 : 50-56.
85. Garber, B. B.
Inflatable Penile Prosthesis Results of 150 Cases.
Brit. J. Urol. 1996., 78 : 933-935.

86. Wespes, F., Corbusier, A., and Delcour, C. Et Al.
Deep Vein Arterialization in Vascular Impotence.
Brit. J. Urol. 1989., 64 : 535-540.
87. Kunelius, P., Hakinnen, J. Lukkarinen, O.
Is High Dose Yohimbine Hydrochloride Effective in the Treatment of a Mixed Type Impotence? A Prospective Randomised Controlled Double Blind Crossover Study.
Urology, 1997., 49 : 441-444.
88. Magoha, G. A. O.
Effect of Ageing on Androgen Levels in Elderly Males.
East. Afr. Med. J. 1997., 74 :642-644
89. Magoha, G. A. O.
Management of Male Erectile Dysfunction: A Review.
East. Afr. Med. J. 1998., 75 : 623-626.
90. Magoha, G. A. O.
Sildenafil (Viagra) in the Treatment of Male Erectile Dysfunction In Nairobi.
East. Afr. Med. J. 2000., 77 : 76-79.
91. Roy, A, D.
Surgical Training in East Africa.
East. Afr. Med. J. 1969., 46 : 1-8.
92. Magoha, G. A. O. and Ngumi , Z. W. W.
The Training of Surgeons In Kenya at the University of Nairobi Teaching Hospital.
East. Afr. Med. J. 1999., 76 : 462-464.

