

SPECTRUM OF UROLOGIC DISEASE IN THE WEST AFRICAN SUB REGION

N. H. Mbibu, *A. M. E. Nwofor and L. Khalid

Departments of Surgery, Ahmadu Bello University Teaching Hospital, Zaria and
*Nnamdi Azikwe University Teaching Hospital, Nnewi, Nigeria

The geographical entity West Africa occupies an environment with common socio-cultural values and political heritage. The health indices in the West African sub region at the close of the 20th century crossing over into a new millennium was discouraging¹ The nations of the of West African sub region share similar demographic pressures from unstable political entities with deteriorating institutions, physical and social infrastructures. The pattern of prevalent diseases in this sub region is uniform and the emergence of new and devastating diseases is affecting the level of health care delivery uniformly². Knowledge of current and changing pattern of disease, the state of the wealth of the nations, level of human development of the state are important factors in teaching and practicing surgical care². In this new millennium, the hospital infrastructure has to expand by leaps to cope with revolution in surgical technology. Urologic diseases constitute a significant proportion of surgical disease and surgical interventions in the sub region. A preview of the spectrum of urologic diseases in this environment is necessary as a recipe in the planning and development of research and acquisition of relevant technology and specialist surgical training in the sub region.

Records of all patients attending a large organised urologic clinic will be reviewed in the urology unit of the Ahmadu Bello University Teaching Hospital over a period of four years (1998 - 2002) the urology unit was founded thirty years ago as the only organised urologic unit providing the uro-surgical care to a population of about 45 million people in Northern Nigeria. This region for a long time has less than 10 urologist serving the population and most urologic work is also done by general Surgeons with interest in uro-surgery.

Information was obtained from other workers in centres providing organized urologic care in Jos university Teaching Hospital Nnamdi Azikwe, University Teaching Hospital Nnewi, University teaching Hospital Ibadan, Lagos University teaching Hospital LUTH, Korlé Bu Teaching Hospital Accra and Hôpital Gé né ral de Grand Yoff Univesité Cheikh Anta Diop, Dakar - Senegal and University of Port Harcourt, Port Harcourt. The following records were reviewed between 1998 and 2002 at Ahmadu Bello University Teaching Hospital Zaria.

- Total number of surgical operations showing surgical work load in General Surgery (GS) Urologic surgery (US) Paediatric surgery (PS) Neurosurgery (NS) and Cardiothoracic surgery (CTS).

- Total yearly turnover of urologic operations over this period
- Frequency of admissions into urologic wards
- Urologic outpatient clinic attendance
- Specialist clinic attendance : infertility, erectile dysfunction and haematuria.

Table 1: Outpatient clinic attendance

Clinical condition	No.
Tumours	
Bladder	57
Prostate	39 (< 49 years = 9)
Renal	12
Testes	6
urethra	2
penis	1
Sub total	117
Lower Urinary Tract Obstruction (Benign)	
Benign prostatic hyperplasia	140 (<49 years = 12,)
Urethral stricture	102
Posterior urethral valves	11 (5 adult)
Abscess (prostate)	4
Sub total	257
Trauma	
Urethra	46
Bladder	8
Penis	4
Kidney	3
Scrotum	3
Ureter	3
Testes	3
Sub total	70
Congenital	
Paediatric	
Undescended testis	15
Ambiguous genitalia	13
Posterior urethral valves	12
Hemial	12
Ectopiae vesicae	10
Hypospadias	7
Epispadias	7
Urachal cyst	2
Sub total	78
Adult	
Undescended testis	12
Ectopic Kidney	12
Hydronephrosis	11
Ambiguous genitalia	9
Posterior urethral valves	4
Anterior urethral valve	4
Duplicated ureter	2
Urachal fistula	1
Sub total	55
Erectile dysfunction	103
Infertility	119

Table 2: Ward admissions (1998 – 2002)

Clinical condition	No.
Benign prostatic hyperplasia	136
Congenital	
Circumcision	76
Circumcision mishap	18
Posterior urethral valve	23 (adult 5)
Hypospadias	21 (adult 1)
Undescended testes	13 (adult 5)
Hydronephrosis	7 (1 child)
Ectopial vesicae	6 (adult 1)
Anterior urethral valve	3
Epispadias	2
Urachal cyst	2
Duplicated urethra	1
Sub total	169
Tumours	
Bladder	45
Prostate	37 (1 child, < 49 = 9)
Testis	8 (1 child)
Kidney	4
Penile	2
Urethral	2
Sub total	98
Reconstruction	
Strictures	82 (49 inflammatory, 33 traumatic)
Vesico-vaginal fistula	6
Recto-vaginal fistula	6
Ureteric strictures	6
Penile curvature	2
Vesico-uterine fistula	1
Ureterocele	1
Sub total	104
Trauma	
Urethral	39
Renal	12
Penis	8
Bladder	6
Testes	3
Sub total	68
Stone disease	
Bladder	12
Ureteric	10
renal	10
Urethral	3 (all children)
Sub total	35
Penis	
Priapism	21
Foreign body entrapment	6
Warts	6
Curvature	2
Sub total	35
Scrotum	
Fournièrs (Gangrene)	16
Warts	8
Elephantiasis	4
Sebaceous cyst	4
Scrotal abscess	4

Traumatic laceration	3	
Sub total	39	
Testes		
Orchidectomy (CaP)	36	
Torsion	21	
Testicular trauma	8	
Adult undescended testes	5	
Granulomatous inflammation	2	
Abscess	1	
Sub total	71	
Endoscopy		
Ca Bladder	31	
Cystitis	20	
Cystodistension	8	
Strictures	8	
Prostatitis	5	
Diathermy	2	
Retrograde ureterography	2	
Sub total	76	
Other		
Testicular biopsy		
Infertility	31	
Bilharziasis	1	
Tuberculosis	1	
Varicocelectomy	12	
HIV related	16	
Urethral calibration	3	
Sub total	70	
Grand Total		901

Table 3: Emergency urologic admissions in Zaria

Condition	No.
Urinary retention	43
Trauma	42
Torsion testes	28
Priapism	21
Stone colicks	8
Total	142

Table 4: Surgical operations in Zaria

Specialty	1998	1999	2000	2001	2002	Total
GS	315	307	201	301	82	1209 (36)
US	279	251	146	168	57	901 (27)
PS	198	161	151	214	79	954 (28)
NS	37	178	14	4	-	251 (7)
CTS	-	-	-	-	-	- (0)

Table 4: Urologic surgery at Nnamdi Azikiwe University Teaching Hospital, Nnewi, Nigeria

Diagnosis	2001	2000	1999	1998	1997	Total (%)
Malignancies						
• Carcinoma of prostate	65	21	15	24	34	
• Carcinoma of kidney	2	1	3	1	2	
• Carcinoma of ureter	0	0	0	0	0	
• Carcinoma of bladder	5	1	0	0	0	
• Carcinoma of penis	0	0	0	0	0	
• Carcinoma of testis	0	0	0	0	0	
• Carcinoma of scrotum	0	0	0	0	0	
Subtotal	72	23	18	25	36	175 (13)
Infections						
• Pyelonephritis	5	5	3	5	5	
• Renal abscess	0	2	0	0	1	
• Prostatic abscess	0	0	1	1	3	
• Prostatitis	1	0	0	0	0	
• Epididymoorchitis	6	8	2	6	4	
• Cystitis	4	5	2	2	0	
Subtotal	16	20	8	13	13	70 (5.4)
Urethral stricture	34	18	9	8	10	69 (5.3)
Benign prostatic hyperplasia	56	64	27	51	23	221 (17.1)
Urinary stones						
• Kidney	4	0	0	2	3	
• Ureter	2	10	0	1	1	
• Bladder	2	0	0	2	1	
• Urethra	0	0	0	0	1	
Subtotal	8	10	0	5	6	29 (2.2)
Congenital problems						
• Undescended testis	14	9	3	5	6	
• Posterior urethral valve	1	0	0	0	0	
• Pelviureteric Junction obstruction	10	4	0	0	0	
• Epispadias	4	4	1	0	0	
• Hypospadias	8	5	1	2	3	
• Ectopia vesicae	1	0	1	0	1	
Subtotal	38	22	6	7	10	83 (6.4)
Others						
• Hydrocoele	13	18	6	39	5	
• Epididymal cyst	0	3	1	2	1	
• Inguinoscrotal hernia	50	35	19	30	10	
• Testicular torsion	2	2	0	3	1	
• Scrotal elephantiasis	0	0	1	1	0	
• Hydronephrosis	3	4	0	2	0	
• Varicocoele	20	15	4	4	8	
• Infertility	14	18	18	16	27	
• Bladder outlet obstruction	31	34	23	54	63	
Subtotal	120	108	65	126	109	609 (47)
Grand Total	344	286	133	163	207	1291 (100)

Table 5: Summary of some characteristics in the presentation of common pathologies in Zaria

Pathology	Characteristic	
Benign prostatic hyperplasia	23% chronic urinary retention 12% massive haematuria + shock 30% acute urinary retention 75% prostatism 11.3% below age 50 years Common mode of surgery: Open prostatectomy	
Strictures	40.3% traumatic strictures 59.7% post inflammatory 1% catheter induced	
Stone	Renal/ureter	= 59% (75% impacted at PUJ)
	Vesical	= 24%
	Ureter	= 45%
	Urethra	= 28%
Priapism	Sickle cell disease associated	= 80%
	Delayed > 48hrs	= 75%
Tumours	Early	Advanced
Bladder carcinoma	5%	95%
Prostatic carcinoma	2.5%	97.5% (24% < 49 years)
Renal cell carcinoma	4%	96%
Testis	3.5%	96.5%

DISCUSSION

The West African region lies between 18°W and 15°E of the Greenwich meridian, and between 5 and 20°N of the equator. It cuts across a variety of vegetation and weather types from thick rain forest, through the savanna grasslands to the Sahara desert, and occupies two time zones.

This previous seat of powerful rich kingdoms was fragmented and exploited by colonialist and left, with weak, unstable economies and poor dependent governments.¹⁹ The prevalent diseases for centuries in this region have been those arising from poverty, ignorance and illiteracy, with a more recent new trend, due unrelenting changes in life style and an increasingly

aging population⁴. Current health statistics in Nigeria the most populated country in this sub - region are characterized by high infant and maternal mortality with a life expectation of 49 years, and is evidence of the African Health crisis situation alerted by the World Health Organization (WHO) at the turn of last century⁶. Surgeons working in this sub - region, have to cope with global advances in surgical care, with advanced sophisticated technologies, in endo-surgery and telemedicine. These trends have altered the pattern of practice, the client/doctor relationship and there is a noticeable patient migration to areas where they can avail themselves of these facilities.

The emerging facts in this study, show that invasive reconstructive surgery is the main bulk of urologic care, with prostatomegaly, the most commonly encountered problem and appears to be increasing as the population is gradually aging, despite, the low life expectancy. A previous study in this region had shown that 42% of operations done on the elderly (above 65yrs) was a prostatectomy. Open prostatectomy is still the commonest approach in most centres. 11.3% of patients with BPH were below fifty years of age were still sexually active and reproductive. This observation means that prostate disease is still poorly understood in the native African.

Urethral strictures were a common encounter with a rapid increase in traumatic strictures which were previously a distant second to inflammatory, this is probably due to an equivalent increase in urethral injury from increasing motoring and civil violence. Circumcision noted as a frequent operation in most centres was a safe procedure; but 17% of circumcision related reconstruction was due to maiming mishaps inflicted by quacks who constitute a common nuisance meddling with Medicare in the sub region.

Carcinoma of the bladder and prostate account for 91% of all tumours 75% of bladder tumour was related to irritation from infection and infestation with bilharziasis important in most cases except for occasional, chronic lithiasis, causing squamous cell carcinoma. 80% of the patients were males as also encountered in Ibadan, Accra and Enugu^{16, 17}. The relative immunity in females has not been fully explained apart from their lower level of exposure to offending irritants and fewer chronically obstructing bladder lesions.

95% of patients presenting with cancer was advanced with wide spread metastasis. 24% of patients with

carcinoma of the prostate were below age 50 years while 11.7% of young Africans below 50 were affected by BPH and CaP. The youngest patient in this study was age thirty-five years (BPH) and thirty-seven years old man was the youngest man with CaP. Observations in Port Harcourt noted only 2% of patients affected with CaP below age 50. These observations suggest either a new trend in evolution or revelation of existing trends following increase awareness and heightened clinical suspicion.

This trend reiterates the impression that prostatic disease in the native African needs further study for its true biologic nature. Its increasing incidence now calls for urgency in establishing regional protocols⁸ and policies on Cap and make its optimum diagnostic work up affordable and accessible.

HIV/AIDS was encountered with rather new crop of genitourinary lesions such as amputating penile ulcer, florid penile urethral scrotal warts and hematuria⁹. HIV/AIDS has modified the overall approach to patient care and new surgical entities are in evolution affecting all surgical practice.

The paucity of testicular tumours is noted, but a sharp rise in the last four years of a 24 years study of testicular tumours in Zaria within which 9 cases were seen out of 29 tumours. The paucity of this disease in the African has been shown previously in Zaria, Kenya and Uganda.^{10,11,12} but there is need for continuous surveillance in a changing world.

Stone disease did not constitute frequent surgical burden to the surgeons but a rising trend is encountered in urban Africa¹³ probably due to changing life styles. Renal/ureteric stones were commoner than stones of obstruction in the bladder. Giant bladder stones however were still encountered. Areas of high incidence are noted in the hotter savannah and desert regions as

previously reported in Senegal and Maiduguri¹⁴.

Adult congenital lesions were curious encounters in patients presenting with adult late intersex state. 42% of patients with congenital lesions presented late at adulthood usually with several complications. They proved to be ignorant of available treatment of their conditions. The urologic disease as seen in table 1 form an important bulk of surgical load. surgery will remain a hospital-based discipline, no matter the changing trends including Tele-therapy and micro- surgery.

The dilapidated infrastructure in our environment leaves the practicing urologist and most other specialists very limited choice of therapies the patient receives. Surgical therapy is still mostly invasive with risky anaesthesia.

The hospital in the 21st Century must catch up with global trends. The will of the governments of the nations of the sub region is important in acquiring the useful but expensive technologies and infrastructure needed to train manpower to improve the care we give our ever increasing clients, and to stop the siphoning of funds to shop for these technologies abroad. Regional training centres could be created in collaboration with governments, to better the lot of our specialists who must care and handover appropriate care to our children; it can be summed in words of Owen Wangenstren a great teacher " it is important that young and productive workers in medicine be provided an opportunity earlier in their career for active participation before advancing years dampen enthusiasm" to learn serve and teach.

Research and surgical specialization and practice needs continuous updating and exchange of knowledge and an enabling environment to achieve excellence.

REFERENCES

1. Kwapong AA. 6TH Sir Samuel Manuwa memorial lecture. West African College of Surgeon, Lagos, 1990
2. Mazwi, EL. Training surgically competent doctors for south African rural settings, S Afr J Surg 1997; 35: 147 - 151
3. Ajayi OO. Surgical training in the 21st century Africa. Key - note address, 2nd General assembly of the Pan African Association of Surgeons (PAAS). Abuja, 1998; XIX - XXV
4. Adekunle OO. Surgical training in the 21st century. Proceedings 2nd General assembly of the Pan - African Association of Surgeons (PAAS). Abuja, 1998; 2 - 4
5. Nigerian national policy evolution of health development. The health status of people in Nigeria. Federal Ministry of Health 1996
6. Monekosso GL Meeting the challenges of the African health crisis in the decade of the nineties. 15th Alexander brown memorial lecture, University of Ibadan. Ibadan, 1991
7. Khalid L. The elderly surgical patient. A study of post - operative morbidity and mortality as seen at Ahmadu Bello University Teaching Hospital - Zaria. F.M.C.S Dissertation, National Postgraduate Medical College of Nigeria, Lagos, 1996; 42
8. Garnick MLS. Prostate cancer; Screening, diagnosis, and management. Ann Intern Med 1993; 118: 804 - 818
9. Elegba OY, Mbibu NH. Exuberant genital ulcer in a seropositive HIV patient - a case report. Nigerian Quart J Hosp Med 1996; 4: 336
10. Mabogunje OA, Attah E, Lawrie JH. Tumours of the testis. In: Solanke TF, Osunkoya BO, Williams CKO (eds). Cancer in Nigeria. Ibadan

- tropical medicine series. Ibadan University Press, Ibadan, 1982; 61 - 65
11. Templeton AC. Testicular neoplasm in Ugandan Africans. *Afr J Med Sci* 1972; 3: 157 - 161
 12. Zimmerman RR, Kungu A. Testicular neoplasms in Kenyan Africans. *Cancer* 41: 2452 - 2455
 13. Osegbe DN. Urolithiasis in urbanised Nigerians. *Nigerian J Surgery* 1994; 1: 51 - 56
 14. Duvie SO, Endeley EMI, Dahniya MH. Urolithiasis in Maiduguri. The Nigerian savannah belt experiment. *West Afr J Med* 1989; 7: 148 - 161
 15. UNICEF. Children orphaned by AIDS. The Crisis: UNAIDS. UN, New York 1999; 1 - 3
 16. Aghaji, AE, Mbonu OO. Bladder tumors in Enugu, Nigeria. *Br J Urol* 1989; 2: 64 - 67
 17. Lawani J, Nkposong EO, Aghadiuno PU et al. Urogenital malignancies in Ibadan, Nigeria. In: *Cancer in Nigeria*. Ibadan University Press, Ibadan, 1982; 67
 18. Eke N, Sapira MK. Prostate cancer in Port Harcourt Nigeria. *Nigeria J Surg Res* 2002; 4: 34 - 44
 19. Rodney W. Africa's contribution to the capitalist development of Europe. The colonial period. In: *How Europe underdeveloped Africa*. Bogie - L'Ouverture. London, 1992; 162 - 222
-