

# A 15-year review of clinical and pathological aspects of urologic cancers in two referral hospitals in Yaounde (Cameroon)

## Abstract

**Background:** Urologic cancers are the first cause of cancer-related death among men in Cameroon. Women are also affected and little is known about their clinical and histological features.

**Aim:** This study aimed at determining those characteristics.

**Methods:** Medical records of patients managed for urologic cancers in two referral hospitals in Yaounde between January 2001 and December 2015 were reviewed. The following parameters were retrieved: age, sex, primary site of the tumor, surgeon's specialty and histological type. Incomplete records were excluded.

**Results:** After excluding 4 of them for incompleteness, 58 of the 62 medical records were studied (93.6%). Mean age was  $49.3 \pm 23.7$  years (Range: 7 months - 85 years). About 60.3 % of cases were diagnosed in patients above 50. Sex ratio was 6.25. Distribution of cases by primarily affected organs was: prostate (30 cases; 51.7%), kidney (12 cases; 20.7%), bladder (7 cases; 12.1%), testicle (5 cases; 8.6%), adrenal (3 cases; 5.2%) ureter (1 case; 1.7%). Surgical procedures were carried out by urologists (52 cases; 89.6%), pediatric surgeons (3 cases; 5.2%) and general surgeons (3 cases; 5.2%). All but one, prostate cancers were adenocarcinoma mainly poorly differentiated. Half of kidney cancers were nephroblastoma diagnosed in children. Transitional carcinoma accounted for 57% of bladder cancers.

**Conclusion:** Urologic cancers were mainly diagnosed in adult men and their histological features have no peculiarity.

**Keywords:** cancer, prostate, bladder, kidney, testis, ureter, pathology, urology

## Introduction

Urologic Cancers (UCs) are very common in Cameroon (Sub-Saharan Africa) where men are much more affected than women.<sup>1,2</sup> UCs are the first cause of cancer related mortality among men in Cameroon and their morbidity is a serious burden to the health system because of very late diagnosis.<sup>3</sup> The later feature is common to all cancers in the sub-Saharan Africa.<sup>4,5</sup> The goal of this study was to describe the clinical and pathological feature of UCs in urban Cameroon.

## Material and methods

The study was descriptive and retrospective. We included files of all cases of UCs (kidney, Ureter, Bladder, uretra, prostate, testicles and scrotum) managed in two tertiary hospitals in Yaounde (the political capital of Cameroon): the Yaounde General Hospital (YGH) and the Yaounde Gynaeco-Obstetric and Pediatric Hospital (YGOPH). Those hospitals were selected for their good archiving systems; moreover the first has a dedicated adult urology department and the later is specialized pediatric surgery. Incomplete files were excluded. The period under scrutiny ranged from January 2001 to December 2015. Administrative and ethical clearances were obtained from both YGH and YGOPH prior to data collection. The following parameters were retrieved from each files: age, sex, primary site of the tumor, surgeon's specialty and histological type. Data were managed with Epi info® version 7 software.

## Results

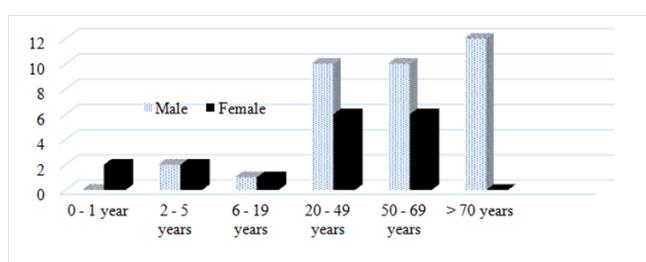
### Global features of UCs

Out of the 62 cases only 58 (93.6%) had complete files. The distribution of the 58 cases of UCs by primarily affected organ and by sex is shown in Table 1. Sex ratio was 6.25. Surgical procedures were carried out by urologists (52 cases out of 58; 89.6%), pediatric surgeons (3 cases out of 58; 5.2%) and general surgeons (3 cases out of 58; 5.2%). Table 2 describes the histological types of UCs for each organ. Mean age of patients with UCs in our series was  $49.3 \pm 23.7$  years. Ages ranged from 7 months to 85 years. About 60.3% of cases were diagnosed in patients above 50 years. Mean ages for male and females patients were  $54.4 \pm 12.2$  and  $46.5 \pm 12.5$  years respectively (Figure 1).

**Table 1** Distribution of urologic cancers by sex and by primary sites (organs)

Primary sites (organs)	Male	Female	Total
Prostate	30	NA	30
Kidney	9	3	12
Bladder	4	3	7
Testicle	5	NA	5
Adrenal	1	2	3
Ureter	1	0	1
<b>Total</b>	<b>50</b>	<b>8</b>	<b>58</b>

NA : Not Applicable



**Figure 1** Distribution of urologic cancers by age and sex.

**Table 2** Histological types of urologic cancers

Primary sites (organs)	Histological types	n
Prostate	Invasive adenocarcinoma	29
	Prostate intra-epithelial neoplasia grade 3	1
	Nephroblastoma	6
Kidney	Collecting tubes carcinoma	2
	Hodgkinian lymphoma	1
	Chromophobic cells carcinoma	1
	Clear cells carcinoma	1
	Papillary adenocarcinoma	1
	Transitionnal carcinoma	4
Bladder	Squamous cell carcinoma	2
	Malignant mesothelioma	1
	Germ cell intratubular neoplasia	1
Testicle	Non Hodgkin Malignant lymphoma	2
	Seminoma	2
	Pheochromocytoma	1
Adrenal	Adrenal cortical carcinoma	1
	Neuroblastoma	1
Uretra	Carcinoma in situ	1
<b>Total</b>		<b>58</b>

### Specific features of UCs

#### Prostate cancer (PC)

Mean age of patients with prostate cancer (PC) was  $66.3 \pm 10.2$  years. Clinically, all patients had a hard prostate and 20% of them had a palpable prostatic nodule. Histological lesions of were adenocarcinomas in 29 (96.7%) cases and high grade prostate intra-epithelial neoplasia (equivalent to in situ adenocarcinoma) in 1 (3.3%) case. Of those 29 adenocarcinomas 15 (51.7%) were poorly differentiated (Combined Gleason Score 8, 9 or 10), 12 (41.4%) were well differentiated (combined Gleason Score ranging from 2 to 5) and 3 (6.9%) had a mild differentiation (combined Gleason Score of 6 or 7). The capsule of the prostate was invaded in only 2 cases (6.7%) at the time of diagnosis.

### Cancer of the kidney

Mean age at diagnosis was  $49.8 \pm 13.9$  years and the sex ratio was 3/1. Half of cases were diagnosed in children (aged between 5 and 8 years) and were all nephroblastoma.

### Cancer of the bladder

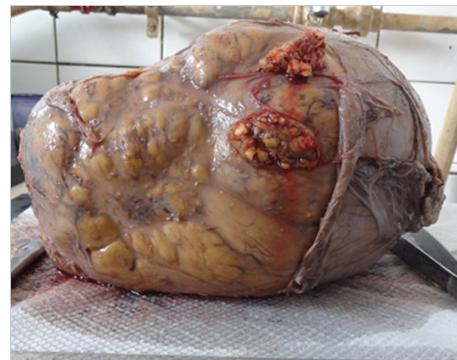
Among the cancer of the bladder, Transitional cell carcinoma was the most frequent form seen. This was followed by squamous cell carcinoma, the histology type well known in the litterature .

### Cancer of the testicle

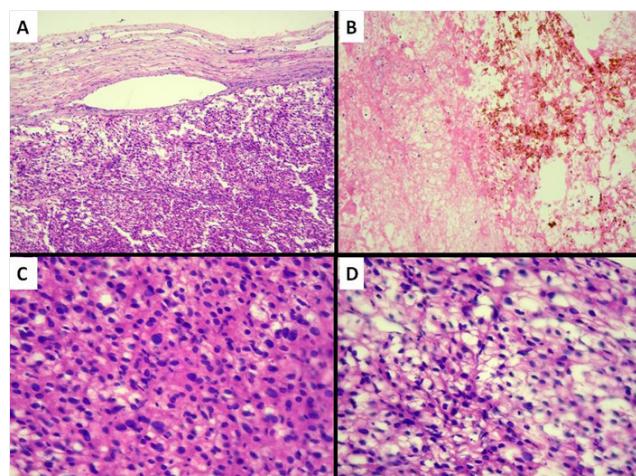
Seminoma and germ cell cancers were found in the testicle.

### Cancer of adrenals

Those cancer were less frequent and a adrenocortical carcinoma, a neuroblastoma and a pheochromocytoma were the 3 cases found. The case of adrenocortical carcinoma is shown in Figure 2 with microscopic features in Figure 3.



**Figure 2** Hetero-nodular adrenocortical carcinoma partially covered with a greyish capsule.



**Figure 3** Histology of the case of adrenocortical carcinoma.

- Tumour with a fibrous capsule on the top (Hematoxillin-Eosin, 100x).
- Necrosis with hemosiderin deposits on the right (Hematoxillin-Eosin, 200x).
- Main high power aspect, with pleomorphic cells, eosinophilic cytoplasm and polymorphous nuclei (Hematoxillin-Eosin, 400x).
- Area of clear cells (Hematoxillin-Eosin, 400x).

## Uretra

The single lesion of the uretra found was in situ carcinoma with no morphologic sign of invasion in the biopsy.

## Discussion

### Global features of UCs

Like in other regions of Cameroon and in other African countries and in Europe, UCs in our series, except for nephroblastoma, was predominantly diagnosed in patients above 50 years.<sup>1,2,6-8</sup> Surgical procedures were mainly carried out by urologists surgeons in compliance with the referral and academic status of both hospitals in which the study was conducted.

### Cancer of the prostate

The proportion of prostatic cancer among male UCs in our series (60%) was similar to that reported in in Cameroon and in Togo.<sup>1,2,8</sup> Scarce data from rural areas in the country are also in favor of a non negligible frequency of prostatic neoplasia in Cameroon.<sup>9</sup> Cancer of the prostate is the most frequent (28.8%) among men in Cameroun.<sup>10</sup> Until recently the national health strategy was not allowing much resources to cancer control programmes in particular and non-communicable diseases in general.<sup>11</sup> In fact most of prostate adenocarcinoma are frequently asymptomatic until they produce metastasis. The sensitization and prevention approach is important for early detection and appropriate treatment<sup>12,13</sup> as this cancer is even more aggressive among black africans.<sup>14,15</sup>

### Cancer of the kidney

The mean age at diagnosis of cancer of the kidney in our series was similar to those reported in Sub-Saharan Africa.<sup>2,8,16,17</sup> Cancer of the kidney accounted for 20.7% of UCs in our series which is much higher than figures commonly reported in Sub Saharan Africa;<sup>8,16,17</sup> this can be due to the our smaller sample size. Several authors have reported a slight female predominance but we observed the contrary with a M/F ratio of 3/1.<sup>8,16,17</sup> Like authors who studied cancer of the kidney in all age groups we found that nephroblastoma was the predominant histological type, occurring mainly in children.<sup>2,8</sup> Studies including only adults found renal cell carcinoma to be the most frequent histological type.<sup>16,17</sup>

### Cancer of the bladder

Cancer of the bladder accounted for 12.1% of UCs ranking third in our series. These statistics are similar to those reported in subsaharan Africa.<sup>2,6,8</sup> Bladder cancers were mostly found in the fifth and sixth decades of life; this is a common feature in Africa.<sup>2,6,8,18-20</sup> The Male/Female ratio (4/3) was much lower than those commonly reported (ranging from 2/1.1 to 5.2/1).<sup>6,18-20</sup> Our smaller sample size can explain that difference. Like several other subsaharan African series we found a predominance of transitional carcinoma followed by squamous cell carcinoma.<sup>18-20</sup> Risk factors for both histological types are found in Cameroon: urinary shistosomosis and professional exposure to carcinogenic chemicals.<sup>3,18</sup>

### Cancer of the testicles

Cancer of the testes has been reported to be rare in Cameroon.<sup>21</sup> This explains their relatively low proportion in our series. Like other authors we found lymphoma germ cell tumor and seminoma.<sup>1,21,22</sup>

## Cancer of the adrenals

We found those very rare tumours to be predominant in female as previously reported in Cameroon.<sup>23,24</sup>

## Cancer of the uretra

We found one case of in situ carcinoma of the uretra. This type is known to be rare in the littérature.

## Conclusion

Prostate, kidney and bladder cancers are the most frequent in the referral hospitals in Yaounde. This data is helpful for planning the activities of cancer units of these hospitals for prevention and appropriate management.

## Acknowledgements

None.

## Conflict of interest

The authors declare that they have no competing interests.

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