

# Advanced Bladder Cancer in Senegal: Epidemiological and Clinical Aspects

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## Abstract

**Advanced bladder cancer remains particularly frequent in our practice. Aim:** To evaluate the proportion of advanced bladder cancer at diagnosis and to describe the characteristics at diagnosis. **Materials and methods:** We conducted a descriptive and retrospective study assessing 97 cases of advanced bladder cancer over a period of 10 years (January 2002 to January 2012) at the department of Urology of Hôpital Principal de Dakar and Hôpital Général de Grand Yoff. We included the records of all patients with a pathologic confirmation of locally advanced bladder cancer (T3, T4) and/or a visceral or lymph node metastasis. **Results:** Mean age was 47 years (Range: 25 - 80 years). The cohort comprised 69 men and 28 women with a sex ratio of 2.46. The reasons for referral were a hematuria (60.82%), pelvic mass (19.2%), irritative urinary symptoms (8.2%). Reported medical histories were: urinary schistosomiasis (13 patients), tobacco (10 patients), recurrent cystitis (8 patients). Indications of local extension were: inguinal lymph nodes (6 patients), tumoral hepatomegaly (5 patients), bone pain (15 patients). A cystoscopy was performed in 64.95% of patients in a mean time of 2.5 months. A Trans Urethral Resection of Bladder Tumour (TURBT) was performed in 77 patients with a mean time from referral of 4 months. Pathologic examination showed squamous cell carcinoma (42%), urothelial carcinoma (28%) and adenocarcinoma (9%). Thoraco-abdomino pelvic CT scan showed a loco regional extension in 18 patients, extension to the peri vesical fat in 3 patients and metastasis in 25 patients. **Conclusion:** Delayed diagnosis of bladder cancer is still common in Africa with a high mortality rate. A better management requires an improvement of the equipment in the hospital with an emphasis on the access to endoscopy allowing for an early diagnosis.

## Keywords

Advanced Bladder Cancer, Schistosomiasis, Endoscopy

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## 1. Introduction

Until 1984, bladder cancer was the most frequent cancer in Senegal [1], but in the recent years owing to the screening for prostate cancer and the reduction of the incidence of urogenital schistosomiasis, bladder cancer was the second most frequent cancer after prostate cancer. However, the diagnosis is still delayed in many African countries due to the consideration of hematuria and the difficult access to diagnostic tools [1].

The aim of the study was to determine the proportion of advanced bladder cancer at diagnosis and to perform a descriptive analysis of the epidemiology and clinical aspects.

## 2. Patients and Methods

We conducted a descriptive and retrospective study of all cases of advanced bladder cancer at the department of Urology of Hospital Principal de Dakar and Hopital General de Grand Yoff from January 2002 to January 2012. All patients with pathologic report indicating a locally advanced bladder cancer (T3, T4) or the presence of any visceral or lymph node metastasis irrespective of the local extent of the disease were included. We excluded all cases of localised disease (T1, T2) without a metastasis and the cases with no record of pathologic confirmation. The variables studied were:

- Sociodemographic data: (age, sex);
- Clinical data: (medical history, risk factors, reason for referral, clinical findings);
- Paraclinical data: (biology, endoscopy, imaging);
- Pathologic findings: (histological type, cancer stage);
- Extension of the disease based on clinical complains, X-Ray, abdominal Ultrasound, Cystoscopy, Thoraco abdominal CT-Scan and MRI.

Data were collected and analysed using epi-info version 3-5-1 software.

## 3. Results

During the study period, we identified 133 records of bladder cancer cases of which 97 (72%) met the inclusion criteria. The series comprised 69 men and 28 women giving a sex ratio of 2.46.

Mean age was 47 years (range: 25 - 80 years). Age groups are represented in **Figure 1**.

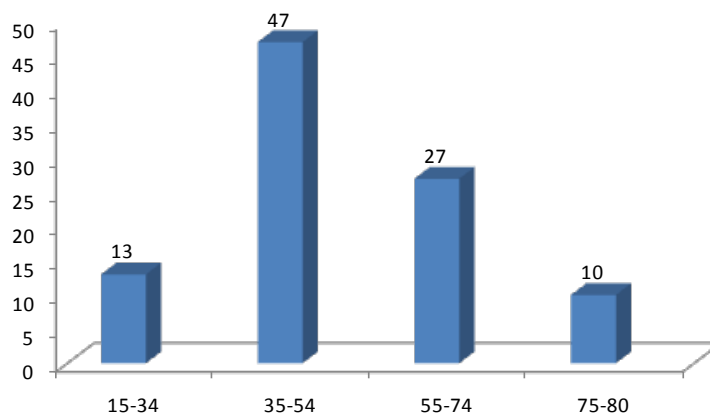
Mean time to consultation was 6 months (Range: 20 days; 3 years).

Reasons for referral were: hematuria (60.82%), irritative urinary symptoms (6.19%), pelvic mass (19.2%) as described by **Figure 2**.

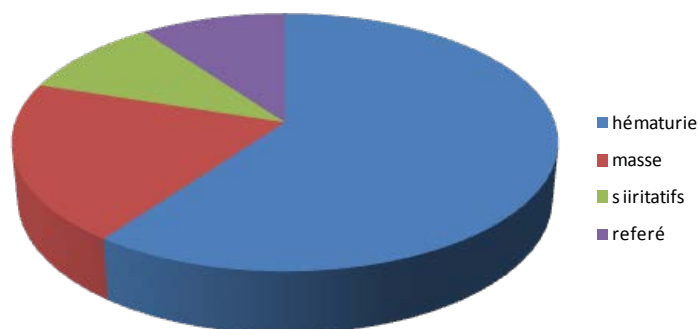
Reported medical history were urinary schistosomiasis (13 patients), smoking (12 patients)) and repeated cystitis (10 patients).

Physical examination found a urinary retention with a bladder globe in 26 patients, a pelvic mass in 18 patients (19.2%), clinical anemia in 25 patients and a poor general condition in 26 patients.

Cystoscopy was performed in 64.95% of our patients within a period of 2.5 months. The macroscopic aspects at cystoscopy are presented by **Table 1** and the location of lesions are summarised by **Table 2**.



**Figure 1.** Distribution of patients by age groups.



**Figure 2.** Distribution of patients by reason for consultation.

**Table 1.** Distribution of patients according to the aspect of the tumor to cystoscopy.

Aspect des tumeurs	Effectifs	Pourcentage
Bourgeonnante	29	46.03%
Hémorragique	9	14.29%
TV + Granulations réfringentes	4	6.35%
Chevelue	2	3.17%
Nécrotique	5	7.94%
Plane	1	1.59%
Ployploïde	5	7.94%
Envahissement locorégional	8	12.70%
<b>Total</b>	<b>63</b>	<b>100.00%</b>

**Table 2.** Distribution of patients according to the tumor site cystoscopy.

Siege des tumeurs	Effectifs	Pourcentage
Trigone	9	14.29%
Dôme	3	4.76%
Col	6	9.52%
Paroi latérale	11	17.46%
Paroi antérieure	4	6.35%
Paroi postérieure	5	7.94%
Multiple	14	22.22%
Siège non précisé	11	17.46%
<b>Total</b>	<b>63</b>	<b>100.00%</b>

A TURBT was performed in 77 patients within a period of 4 months. Pathology examination of the specimen showed squamous cell carcinoma (42%), urothelial carcinoma (28%) and adenocarcinoma (9%).

TURBT was not performed for 20 patients for different reasons: poor general condition (13 patients), hemodynamic instability (2 patients), patient refusal (2 patients) and important loco regional extension (3 patients).

The evaluation of the disease extension showed at imaging: inguinal lymphadenopathy (6 patients), tumoral hepatomagaly (5 patients), pulmonary metastasis (5 patients), bone metastasis (7 patients) and ascitis (2 patients). Thoraco abdominal CT scan showed a loco regional extension (18 patients), an extension to the perivesical fat (3 patients) and metastasis (25 patients).

#### 4. Discussion

Mean age of our patients was 47 years (Range: 25 - 80 years) and the most represented age group was 35 - 54

years. However 40% of our patients were under 50 years. Our findings are consistent with the results published by Niang L *et al.* [2], Diao B *et al.* [1] in Senegal and other African series [3]-[5] indicating a mean age in the 50'. The young age of our patients contrasts with the findings of western series indicating a late onset of bladder cancer over 60 years [6]-[8].

Bladder cancer is more frequent in men. We report a sex ratio of 2.46 which is consistent with the findings of Diao B *et al.* [1] and Niang L *et al.* [2] in Senegal with a respective sex ratio of 1.23 and 3, as well as European series with Guillotreau J *et al.* [6] and Polleto B [8] finding respectively a sex ratio of 3 and 2.

The major risk factor appearing in our study is urogenital schistosomiasis. The prevalence of schistosomiasis could even be higher if more investigations were carried out in the 21 other patients with a report of a history of hematuria.

These findings are consistent with the data of Tangara S. [9] in Mali showing a history of schistosomiasis in 80% of patients and the results of Guirou A. [3] indicating a proportion 48.84%. Urinary schistosomiasis is endemic in 53 African countries including Senegal [10] and 70 millions of people are estimated to suffer from the disease. Schistosomiasis and chronic cystitis are associated with squamous cell carcinoma of the urinary bladder [1] [4] [9] [11].

Hematuria is the major symptom. It was present in 61.1% of our patients. However, despite its high frequency, this symptom is often not alarming for the African population and does not lead to an early consultation. This situation partly explains the advanced stage of the majority of cases at diagnosis.

The mean time to referral was approximately 6 months (Range: 1 month - 5 years). Tanagara S. [9] and Guirou A. [3] in Mali reported a time to referral respectively ranging from 2 months to 5 years and 1 month to 12 years. Amegbor K. [12] in Togo found a mean time to referral of 8.6 months (Range: 2 - 60 months).

The findings at physical examination in our study such as bladder globe and pelvic mass already indicate an advanced stage of the cancer and more generally the symptoms encountered in Africa usually indicate an advanced disease. This is reflected by the fact that our cohort represents 72% of the bladder cancer cases followed up in our study period. Amegbor K. [12] reported that 66.7% of the cases presented a pelvic mass in Togo. Pelvic mass was also found in the series of Guirou A. [3] and Tanagara *et al.* [9] at a respective proportion of 43.71% and 56%.

The multiple metastasis found in our study along with the long and slow evolution of the disease are consistent with the late referral. Such a feature is common in most African series. That is the case of the findings reported by Malle M.N. [13] showing an extension to the external genitalia in 20% of cases, a lymph node involvement in 4.64% of patients and lower limbs oedema in 2.23% of cases. Guirou [3] found a liver mass indicating a metastasis in 1.16% of cases.

The management of our patients is limited by the lack of diagnostic equipments.

Cystoscopy was performed in 63 of our patients (64.94%) which underscore the limited access to this examination for the population whether in terms of cost or in terms of the availability in the hospitals. The time from the referral to the cystoscopy was therefore too long in our series (mean: 2.5 months) and did not contribute to the diagnosis in most of the African series [3] [4].

TURBT is the key procedure for the diagnosis but it also poses the problem of limited access. The long time to the performance of the TURBT (mean: 4 months) explains the high number of patients who did not undergo this procedure. Of the 20 patients without TURBT, we noted 2 cases of refusal but the majority of the patients had a poor general condition, consequence of the advanced stage of the disease. In the other African series, TURBT was not reported.

Because of its accessibility, ultrasound is still largely performed at first intent in African series [3] [4] [9]. More than half of the patients in our series underwent CT scan but because of its high cost, it is not routinely ordered in many African countries [3] [4] [9]. In the series of Malle N.M. [13] and Tangara S. [9] only 2 and 1 patients respectively underwent a CT scan.

Squamous cell carcinoma was the commonest pathologic finding which is consistent with other reports from Senegal [1] [2]. In Burkina Faso, Diednere E *et al.* [4] reported 60.30% of squamous cell carcinoma while in Mali this proportion was 69.23% and 80% in the reports of Malle N.M. [13] and Guirou A. [3] respectively. Desgrappes A *et al.* [11] and Rischman P *et al.* [14] explain the high prevalence of squamous cell carcinoma in Africa by two factors: black race and the presence of urogenital schistosomiasis which is the case Senegal where schistosomiasis is endemic. The role of schistosomiasis in the occurrence of squamous cell carcinoma of the bladder was raised by Fergusson A.R. [15] since 1911 because of the observation of a high incidence of bladder

cancers in Egyptians presenting a urogenital schistosomiasis.

## 5. Conclusion

Bladder cancer occurs mostly in young patients with an advanced stage in Sénégal. The management is limited by the accessibility to endoscopic equipments for the diagnosis. Schistosomiasis remains an important risk factor despite the campaign against this enemy initiated about 15 years ago.

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