EPIDEMIOLOGICAL, CLINICAL, AND THERAPEUTIC ASPECTS OF BLADDER TUMORS IN THE UROLOGY DEPARTMENT OF FRIENDSHIP HOSPITAL: A STUDY OF 58 CASES.

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Abstract

Currently, bladder tumor is the second most common cancer of the urogenital tract after prostate cancer.
Objective : *Our work aimed to study the epidemiological, clinical, and therapeutic aspects of bladder tumors in the urology department of Amitié Hospital in Nouakchott, Mauritania.*
Material and methods *: This is a descriptive observational study with an analytical focus, conducted at a single center, based on bladder cancer cases recorded in the hospitalization registers of Amitié Hospital in Nouakchott. The study period was 5 years (2015 to 2020).*
Results : *During our study period, 2700 patients were hospitalized in the Urology and Andrology Department at Amitié Hospital in Nouakchott, including 117 cases of bladder cancer, representing a hospital prevalence of 4.3%. However, only 58 patients had exploitable records. The incidence of bladder cancer in the urology department was 23 cases per year. The average age of patients was 64 years (ranging from 36 to 80 years). The age group of 40 to 60 years was the most represented, observed in 40% of patients. The sex ratio was 1.41. The most common risk factor was smoking at 38%, followed by residence in a schistosomiasis-endemic area at 34%. The most frequent reason for consultation was lower urinary tract symptoms in 30% of patients, followed by isolated macroscopic hematuria in 29% of patients. The most common consultation delay was 3 to 6 months. Physical examination was normal in 84% of patients, and a hypogastric mass was found in 9% of patients. The hemoglobin level was above 12 g/dl in 48% of the patients, 36% of the patients had anemia with a hemoglobin level between 7 g/dl and 12 g/dl, and 16% had a hemoglobin level below 7 g/dl. Creatinine levels were normal in 90% of patients. Ultrasound was performed on 57 patients and showed the presence of a budding tumor in 84% of cases. A CT urogram was performed on 46 patients and revealed the presence of a budding mass in 87% of cases. Cystoscopy was performed in all patients in our series and showed a papillary appearance of the tumor in 40% of cases and a solid appearance in 60% of cases. The tumor was located posteriorly in 47%, anteriorly in 38%, and in the trigone in 34%. The tumor was solitary in 28% of cases and multiple in 60% of cases. The size of the tumor was 3-6 cm in 53% of cases and less than 3 cm in 43% of cases. Endoscopic resection was performed on 40 patients. The most common histological type was urothelial carcinoma in 86.2% of cases, of which 21% were non-invasive and 64% were invasive. Epirdemoid carcinoma was observed in 13.8% of patients. Endoscopic resection plus BCG was performed on 14 patients. Iterative resection was performed on 10 patients. Curative surgical treatment was performed on 22 patients: total cystoprostatectomy in 59% and anterior pelvicectomy in 41%. Among the 13 patients who underwent total cystoprostatectomy, urinary diversion was of the Bricker type in 11 patients and ureterostomy in 2 patients. Among the 9 patients who underwent anterior pelvicectomy, 6 had Bricker-type urinary diversion and 3 had ureterostomy. Radio-chemotherapy was administered to 8 patients. Palliative treatment was given to 8 patients. In*

our series, 41 patients, or 71%, had a favorable outcome, while 10 patients, or 17%, died after 6 months of follow-up, and 7 patients were lost to follow-up after treatment.

Conclusion : *Bladder tumors pose a public health problem. Our study reveals that these tumors are among the most common tumor pathologies in urology, but patient follow-up is complicated, which explains why only 58 out of 117 patient records could be analyzed. These tumors affect relatively young individuals and are more common in men than in women. The main identified risk factors are smoking and schistosomiasis.*

Keywords : *Cancer, tumor, bladder, urothelial carcinoma, epidermoid carcinoma, Mauritania*

Introduction

Bladder malignancies represent a significant public health issue due to their magnitude. In Africa, bladder cancers have the highest incidence rates in Egypt, where they are the leading cancer and account for 11% of all cancers. The average age of onset for bladder tumors in Africa is 45 years [1]. In Mali, in 2008, bladder cancer was the fourth most common cancer in men and the fifth in women, with an estimated incidence of 3.3/100,000 in men and 2.6/100,000 in women, and a male-to-female ratio of 1.2. It also accounts for 0.7% of cancer-related deaths in men and 0.4% in women [2]. In France, bladder cancers are the fifth leading cause of cancer, with approximately 10,000 new invasive cases annually and a significant mortality rate, accounting for 4,000 deaths per year. They are the second most common urological cancer after prostate cancer. There is a strong male predominance with a male-to-female ratio of 4; the average age at diagnosis is 65 years [3]. Multiple risk factors have been implicated, with the most significant being urinary bilharzia, smoking, and occupational exposure [4]. In sub-Saharan Africa, epidemiological, clinical, and pathological data are scarce.

This study aimed to describe the epidemiological, clinical, and pathological aspects of bladder tumors in the Urology Department of Friendship Hospital in Nouakchott.

Materials and Methods

This is a descriptive observational study with an analytical and single-center focus on bladder cancers recorded from the hospitalization registers of Friendship Hospital in Nouakchott. The study period was 5 years (2015 to 2020). The parameters studied included :

Patient age at the time of diagnosis, Personal and family medical history, Clinical presentation, Biological, radiological, and endoscopic investigations, Histopathological results, Therapeutic data, Patient outcomes.

Results

-Epidemiology

Frequency

During the study period, 2,700 patients were hospitalized in the Urology and Andrology Department of Friendship Hospital in Nouakchott. Among these, 117 cases were identified as bladder cancer, which translates to a hospital prevalence rate of 4.3%. However, only 58 patient records were usable for detailed analysis.

The incidence of bladder cancer in the urology department was 23 cases per year.

Age

The average age of patients at the time of diagnosis was 64 years, with a range from 36 to 80 years. The peak incidence was observed between the ages of 40 and 60 years (40%).

Risk Factors

The most common risk factor was tobacco use, affecting 38% of patients, followed by residence in an area endemic to bilharzia, which was present in 34% of cases.

-Clinical Presentation

The most common consultation delay was 3 to 6 months, reported in 45% of patients. The most frequently encountered symptom was lower urinary tract disturbances, observed in 30% of cases, followed by isolated macroscopic hematuria, present in 29% of cases.

-Biology

Hemoglobin levels were above 12 g/dL in 48% of patients, 36% had anemia with hemoglobin levels between 7 g/dL and 12 g/dL, and 16% had hemoglobin levels below 7 g/dL. Creatinine levels were normal in 90% of patients.

-Imaging

Ultrasound was performed on 57 patients and showed the presence of a bulging tumor in 84% of cases. Uro-CT was conducted on 46 patients and identified a bulging mass in 87% of cases.

-Endoscopy

Cystoscopy was performed on all 58 patients in our series and revealed a papillary appearance of the tumor in 40% of cases and a solid appearance in 60% of cases. Tumor location was posterior in 47%, anterior in 38%, and trigonal in 34%. The number of tumors was solitary in 28% of cases and multiple in 60%. Tumor size was 3 to 6 cm in 53% of cases and less than 3 cm in 43%. Endoscopic resection was performed in 69% of patients.

-Pathology

The most common histological type was urothelial carcinoma, observed in 86.2% of cases, with 21% being non-invasive and 64% invasive. Squamous cell carcinoma was found in 13.8% of patients.

-Staging

Staging was performed for 36 patients, or 62% of cases, and was abnormal in only 2 cases.

-Treatment

Endoscopic resection plus BCG treatment was administered to 14 patients. Iterative resection was performed in 10 patients. Curative surgical treatment was carried out in 22 patients: total cystoprostatectomy in 59% and anterior pelvic exenteration in 41%. Among the 13 patients who underwent total cystoprostatectomy (CPT), urinary diversion was of the Bricker type for 11 patients and ureterostomy for 2 patients. Among the 9 patients who underwent anterior pelvic exenteration, 6 received a Bricker-type urinary diversion and 3 received an ureterostomy. Radiochemotherapy was administered to 8 patients. Palliative treatment was provided to 8 patients.

-Outcome

In our series, 41 patients, or 71%, had a favorable outcome. Ten patients, or 17%, died after 6 months of follow-up, and 7 patients were lost to follow-up after treatment.

Discussion

In the study by El Moujedid conducted in the Urology Department of Cheikh Zayed Hospital in Nouakchott (CHCZ) in 2021, the incidence was 6.75 cases per year [1]. In Ahmed Lemsid's study conducted in the Urology Department of Aristide Le Dantec Hospital in Dakar in 2021, the incidence was 12.5 cases per year [11]. This incidence rate is lower than that of our study, which revealed an incidence of 23 cases per year. However, our sample underscores a significant public health issue. In the studies by El Moujedid, Kamissoko, and Ouédraogo, the male-to-female ratio was 0.75, 1.17, and 2, respectively, which is comparable to our study where the ratio was 1.41 [1, 9, 3]. Many factors contribute to the development of bladder cancer, including smoking and urinary bilharzia [3]. In El Moujedid's study [1], urinary bilharzia was the main risk factor identified, present in 33.3% of cases, followed by smoking in 18.5%. In contrast, our study found smoking to be the most prominent risk factor in 38% of cases, followed by residence in an endemic area for bilharzia in 34% of cases, which aligns with the results obtained by Boureima Ouédraogo [3]. The average age of bladder cancer onset was 55.6 years in the study by Boureima et al. and 55.86 years in Ahmed Lemsid's study [3][11]. These results are close to those in our study, where the average age of onset was 64 years. In El Moujedid's study [1], the majority of patients, 40.7%, consulted within 1 to 3 months after the onset of the first symptoms, which is similar to our study where the most common consultation delay was 3 to 6 months in 45% of patients. In El Moujedid's study [1], the main reason for consultation was hematuria, found in 52.8% of patients, whereas in our study, the main reason was lower urinary tract symptoms in 30% of cases, followed by hematuria in 29% of cases. In Kamissoko's study [9], anemia was found in 79.7% of patients, whereas in our study, only 52% of patients had anemia. In our series, ultrasound showed a bulging tumor in 84% of patients, wall thickening in 46%, and ureterohydronephrosis in 25%. According to Kamissoko [9], ureterohydronephrosis was more frequent, with a rate of 51.6%, while Guirou [8] reported a rate of 38.23%. In Kamissoko's series [9], cystoscopy performed on 22 patients diagnosed bladder tumors in 20 patients, or 90.9% of cases. According to Ouédraogo [3], 65 patients underwent cystoscopy, which revealed bulging cancers in 32.30% of cases, with tumors located on the lateral walls of the bladder in 47.69% of cases. In our study, cystoscopy was performed on all patients. The results showed a solid appearance in 60% of cases, with the most frequent locations being the posterior wall in 47% of cases and the anterior wall in 38% of cases. Regarding histology, we found urothelial carcinoma in 86.2% of cases and squamous cell carcinoma in 13.8% of cases. These results are consistent with those from other studies: in Botcho G's series [2], urothelial carcinoma was diagnosed in 11 out of 16 patients who underwent histopathological examination, and in Ouédraogo's series [3], the rate was 63.89%. In contrast, Kamissoko [9], Eromé [7] from Mali, and Diao [5] from Senegal reported a predominance of squamous cell

carcinoma. Computed tomography remains the gold standard for staging and follow-up of bladder cancers [10]. In our series, staging was performed for 32 patients and revealed abnormalities in only 2 of them. In Kamissoko's series [9], staging was carried out for 55.4% of patients. Staging can be expensive, which limits its use. Nevertheless, despite these constraints, our series includes a significant number of patients who benefited from this examination. In our cohort, endoscopic resection combined with BCG therapy was performed in 14 patients, while iterative resection was carried out in 10 patients. Radiotherapy combined with chemotherapy was administered to 8 patients, and curative surgical treatment was performed in 22 patients, with 59% undergoing total cystoprostatectomy and 41% undergoing anterior pelvic exenteration. Palliative treatment was provided to 8 patients. In Kamissoko's series [9], 3 patients received polychemotherapy, none of whom had monotherapy. In Guirou's series [8], 2 out of 86 patients received polychemotherapy, while 27 patients, or 31.39%, received monotherapy. This practice was noted as a significant part of the cohort. In Kamissoko's series [9], only 19 out of 74 patients were proposed for surgical intervention. In Botcho G's series [2], endoscopic resection was performed in 9 patients, partial cystectomy in 7 patients, total cystectomy with enterocystoplasty in 1 patient, and palliative treatment was administered to 10 patients. In our series, 41 patients, or 71%, had a favorable outcome, 10 patients, or 17%, died after 6 months of follow-up, and 7 patients were lost to follow-up after treatment. In Kamissoko's study, 50.9% of the non-operated patients died, and 2 were lost to follow-up. The author notes that this high mortality rate confirms the low percentage of surgical interventions, as many of his patients presented at a very advanced stage of the disease [9]. Bladder cancer is a condition that highlights the challenges faced by urologists [8].

Conclusion

Bladder cancers exhibit variable aggression and can present in two forms: superficial or non-invasive (non-muscle-invasive bladder cancer, NMIBC) and invasive (muscle-invasive bladder cancer, MIBC). The absence of a standardized and codified management protocol delays diagnosis and affects prognosis. In developed countries, bladder tumors are well-managed; however, they remain a significant concern for urologists in our region. Management of bladder cancer may involve surgery, radiotherapy, and chemotherapy.

The goal of this study was to examine the epidemiological, clinical, and therapeutic aspects of bladder cancer at Friendship Hospital in Nouakchott, Mauritania. Our study reveals that bladder tumors are among the most common urological malignancies. However, patient follow-up is challenging, which is why only 58 out of 117 patient records could be analyzed. These tumors affect relatively young individuals and are more common in men than in women. The primary risk factors identified were smoking and schistosomiasis.

Conflicts of Interest

The authors declare no conflicts of interest.

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