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Histopathological Profile of Bladder Tumors at Tertiary Care Centre in Kashmir - A Comprehensive Six Year Study

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ARTICLE INFO

Received 19 Feb. 2014
Received in revised form 26 Feb. 2014
Accepted 22 Mar. 2014

Keywords:

Bladder,
Papillomas,
TCC.

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ABSTRACT

Urinary bladder (or bladder) cancer is one of the most common cancers worldwide, with the highest incidence in industrialized countries. A total of 355 cases of urinary bladder cancer were studied at the Department of Pathology, Sher-i-Kashmir Institute of Medical Sciences, Kashmir, India over a period of 6 years (May 2006 to May 2012). Tumors were evaluated as per Age, Sex, smoking history, Histological type and grade of tumor. Males were more commonly affected than females. The commonest type of tumor observed was Transitional cell carcinoma (TCC) (98.5%), and peak age of incidence was 51- 60 years. In TCC 51.4% were low grade, 27.1% were papillomas and 21.4% were high grade. Smoking was found to be an important risk factor.

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Introduction

Bladder cancer is the most common malignancy involving the urinary system and the ninth most common malignancy worldwide¹. Urinary bladder cancer (UBC) is the fourth most common cancer in men and eighth in women². As per the Indian cancer registry data in men, it is the ninth most common cancer accounting for 3.9% of all cancer cases³. An average of 260,000 new cases of urinary bladder cancer is diagnosed worldwide every year⁴.

In majority of cases it affects patients in 6th or 7th decade of life. They are broadly classified as: either epithelial or non- epithelial (mesenchymal) with 90% being epithelial².

Bladder cancer is more common in men than in women with a Male to Female ratio of 3 to 4:1; however in women it is diagnosed at a more advanced stage and has higher mortality than in men. Survival of female patients at 5 years is 78%, equal to 10 year survival for men⁵.

Smokers have 4 times greater risk of bladder cancer related to both the duration and amount of smoking. Cigarette smoking accounts for 1/3rd to 1/2 of all bladder cancers⁶.

Material and Methods

All bladder biopsies positive for malignancy submitted to the Department of Pathology, Sher-i-Kashmir Institute of Medical Sciences, Kashmir, India over a period of 6 years (May 2006 to May 2012) were reviewed retrospectively. All cases of TURBT (Trans urethral resection of Bladder tumors), partial cystectomy, Total cystectomy and Cysto-prostatectomy were included in the study. Cases with history of bladder tumor recurrence were excluded. In the patients analyzed, clinicopathologic data were extracted from the reports using an abstraction form that recorded such data as

patient age, gender, smoking habit presenting symptoms, nature of specimen, gross and histologic appearances of the tumour. The tumours were graded histologically, and staged pathologically according to World Health Organization.

(WHO) / International Society of Urological Pathology consensus classification of urothelial (transitional cell) neoplasms of the urinary bladder into low- and high-grade tumours (Epstein *et al.*, 1998).

Results

A total of 355 cases of bladder cancer were studied, 81.4 % (289 out of 355) of the patients were males and only 18.6 % (66 out of 355) were females (Table.1). Male: Female ratio was 4:1. Maximum number of cases were seen in the age group of 51-60 years (33%), followed by 28% of the patients in the age group of 61- 70 years, 23% in the age group of 41-50 years, 7% in the age group of 31- 40 years, 5 % in the age group of > 80 years and 4% were in the age group of 71- 80 years. No patient was seen below 30 years of age (Table. 2). Most common type of tumor (98.5%) was Transitional cell carcinoma (TCC) while as 0.56%, 0.28%, 0.28%, and 0.28% were Squamous cell, clear cell, papillary adenocarcinoma and sarcomatoid carcinoma respectively (Table. 3). In TCC, 27.1% were papillomas, 51.4% were low grade and 21.4% were high grade TCC (Table. 4). Immuno histochemistry was done in doubtful cases. 210 out of 355 cases (59%) were smokers out of which 200/289 (69%) were males and 10/66 (15%) were females. Hematuria was seen in 78% of the patients.

Discussion

Bladder cancer is one of the most common urological malignancies¹. TCC is the most common variant accounting for 90% of the bladder cancer in the world literature⁷. Considerable variability is noted in the prevalence of squamous cell carcinoma (SCC) of the bladder in different parts of the world. SCC accounts for only 1% of bladder cancers in England, 3-7% in the United States, but as much as 75% in Egypt. Adenocarcinoma (AC) accounts for less than 2% of bladder cancer⁸. In this study transitional cell carcinoma, squamous, clear cell, sarcomatoid, papillary adenocarcinoma were 98.5%, 0.56%, 0.28%, 0.28%, 0.28% respectively.

Superficial bladder tumors account for 70% of new cases. These tumors may be single or multiple. Single papillary tumors account for significant proportion of bladder cancers and carry excellent prognosis⁹⁻¹¹. Muscle invasive tumors are found in 25% of new cases and such tumors carry a much worse prognosis as they are subject to local invasion and distant metastasis²⁰. Flat non-invasive carcinoma in-situ accounts for 5% of new cases and unless diagnosed and treated promptly carries a poor prognosis^{13,14}. In transitional cell carcinoma most commonest was low grade TCC (51.4%) followed by papilloma and high grade TCC (27.1% and 21.4%) respectively.

Bladder cancer is 3 to 4 times more common in men than in women¹⁵. Our study revealed 289/355 to be males (81.4%).

Urinary bladder cancer affects patients in 6th or 7th decade of life.² In our study the most commonest age group involved is 51-60 years (33%).

Bladder cancer presents with painless hematuria in 80-85% of the patients. However, in reality, nearly all patients with cystoscopically detectable bladder cancer have at least microhematuria if enough urine

samples are tested. In our study, 78% of the patients presented with gross hematuria.

Cigarette smoking is a well established risk factor for bladder cancer¹⁶. It is estimated that approximately 50-60% of urothelial carcinomas are directly attributable to smoking and that smokers have 3 to 5 fold increased risk of developing bladder cancer¹⁷. Our study showed 210 out of 355 (59%) were smokers out of which 200 / 289 (69%) and 10 / 66 (15%) were females.

Thus we conclude that bladder cancer is fairly common in Kashmir. Histologically most common type is TCC affecting males in their 6th decade and smoking is an important risk factor.

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Table 1. Sex distribution

Total cases	Males	Females
355	289 (81.4%)	66 (18.6%)

Table 2. Age distribution

Years	No. of cases	% Age
< 30	0	0%
31- 40	24	7%
41- 50	83	23%
51- 60	117	33%
61- 70	100	28%
71- 80	14	4%
>80	17	5%

Table 3. Histological type

TCC	350	98.5%
Squamous cell ca	2	0.56%
Clear cell ca	1	0.28%
Papillary adenoca	1	0.28%
Sarcomatoid ca	1	0.28%

Table 4. Grading distribution

Grading	No. of Patients	Percentage of cases
Papilloma	95	27.1%
Low grade	180	51.4%
High grade	75	21.4%