Original Article

Urinary Bladder Carcinoma

Frequency of Urinary Bladder Carcinoma in Transurethral Resection Specimens

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ABSTRACT

Objective: To determine the frequency of urinary bladder carcinoma in transurethral resection specimens of patients presenting with pain less hematuria.

Study Design: Descriptive cross sectional study.

Place and Duration of Study: This study was conducted at the Department of Histopathology, Services Institute of Medical Sciences, Lahore from October 2015 to April 2016

Patients and Methods: One hundred and fifty transurethral resection specimens were included. Transurethral resection specimens were fixed in 10% Formalin and then they were grossed. Total weight of bladder tissue chips was noted. Sections were processed in Sakura Tissue-Tek 2 and 4-6u thick sections were cut from tissue blocks. After staining them with the Hematoxilin and Eosin (H&E), sections were analyzed histologically under the microscope. Frequency of urinary bladder carcinoma was recorded.

Results: There were 111 males and 39 females with mean age of 48.21±12.07 years and duration of the symptoms was 3.31±2.98 months. Sixteen (10.7%) patients had urinary bladder carcinoma and 134 had no urothelial carcinoma.

Conclusion: The increasing frequency of urinary bladder carcinoma in males is alarming, and requires extensive efforts of awareness, screening and early detection programmes.

Key Words: Frequency, Urinary bladder carcinoma, Transurethral resection, Hematuria

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INTRODUCTION

Urinary bladder cancer is a disease of significant morbidity and mortality[1] and it is a global problem. It occurs more commonly in elderly people and in males[2] and is more common in developed countries. It is at sixth number among the top ten malignancies worldwide. Risk factors include inherited genetic predispositions and exposure to carcinogens such as tobacco smoking, chlorinated hydrocarbons and schistosomiasis.[1-5] The median age of patients at the initial diagnosis is 69 years in men and 71 years in women. Presenting complaints include painless hematuria, dysuria and increased frequency of urine. Urinary bladder cancer metastatizes to lungs, liver, lymph nodes and rarely to skin.[4]

The WHO classifies Urinary bladder carcinomas as urothelial carcinomas, squamous cell carcinomas, adenocarcinomas and others including melanoma and neuroendocrine carcinoma.[5] More than 90% of urinary bladder carcinomas are transitional cell carcinomas (urothelial carcinomas), <5% are squamous cell carcinomas and <2% are adenocarcinomas. The five year survival rate of low grade and early pathological stage of tumors is better than high grade and late stage tumors.[6]

The lifetime risk for developing bladder cancer in males is 3.81% and females is 1.15%.[7] According to a study conducted by Shimakawa[8], the worldwide incidence of bladder carcinoma is 19%. According to different studies in our population, Wani et al[9] described bladder cancer frequency as 4%, while Kashif et al[6] reported bladder cancer frequency as 5% of all cancers in Pakistan, Yusuf[10] found it to be 4.6%. while Shahid et al[11] and Sheraz et al[12] found that bladder tumor frequency is 11% and 10.8% respectively. So, the variability has been found in different reports.

The rationale of the present study is to determine the frequency of carcinoma of urinary bladder in transurethral resection specimens of patients with painless hematuria and to overcome the variability of frequency that has been observed in previous studies in our population. So that proper counseling of patients presenting with hematuria can be done regarding early cystoscopic biopsy and hence diagnosis at early pathological stages of tumor so that the tumor is resected before metastasis, as this practice is not commonly seen and surgery is delayed because of false social believes about surgery and the treatment.

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MATERIALS AND METHODS

This descriptive cross sectional study was carried out at Department of Histopathology, Services Institute of Medical Sciences Lahore from 5th October 2015 to 3rd April 2016. One hundred and fifty transurethral resection specimens taken through cystoscopic surgery were included. Patients between 25 to 70 years of both sexes and transurethral resection bladder specimens of patients with painless hematuria were included. Those patients with inadequate biopsies (having insufficient tissue), unfit for cystoscopy, undergoing bladder resection performed as a part of other surgical procedures (e.g. any metastatic carcinoma of genital tract etc) were excluded. Patient's demographic and intraoperative findings were noted from patient's operative notes. Transurethral resection specimens were fixed in 10% Formalin and then they were grossed. Total weight of bladder tissue chips was noted. Sections were processed in Sakura Tissue-Tek 2 and 4-6u thick sections were cut from tissue blocks. After staining them with the Hematoxilin and Eosin (H&E), sections were analyzed histologically under the microscope in the histopathology department. The data was analyzed using SPSS-20.

RESULTS

There were 111 (74%) males and 39 (26%) females with mean age 48.21±12.07 years. One hundred and twenty six (84%) had duration between 1-6 months and 24 patients (15%) had duration between 7-12 months. The mean duration of the symptoms was 3.31±2.98 months. Sixteen patients (10.7%) had carcinoma of urinary bladder while 134 (89.3%) did not have carcinoma of urinary bladder (Table 1).

Table No.1: Demographic information of the patients (n=150)

Variable	No.	%
Gender		
Male	111	74.0
Female	39	26.0
Age (years)		
24 – 50	88	58.7
51 – 70	62	41.3
Duration of symptoms (months)		
1 – 6	126	84.0
7 – 12	24	15.0
Carcinoma of urinary bladder		
Present	16	10.7
Absent	134	89.3

When the carcinoma of urinary bladder was stratified according to gender and duration of symptoms, 14 males had urinary bladder carcinoma while 2 females had urinary bladder carcinoma while in duration of symptoms, 14 patients had symptoms between 1-6 months duration and 2 patients had 7-12 months duration of symptoms statistically the difference were not significant (P>0.05) [Table 2].

Table No.2: Stratification of carcinoma of urinary bladder according to gender and duration of symptoms (n=150)

Variable	Present	Absent	P value
Gender			
Male	14	97	0.193
Female	2	37	
Duration of symptoms (months)			
1 – 6	14	112	0.686
7 – 12	2	22	

DISCUSSION

Globally, urothelial carcinoma is one the most common malignant life threatening disorder and approximately above 90% from all the carcinomas.[13] In United States, urinary bladder carcinoma is reported the fourth most commonly found carcinoma among male population and the 17th most commonly found cancers in female population along the world in 2014.[14] The mortality rate is quite high with this disease and accounted 6.1 to 7.2% out of 0.1 million patients in men and 1.3% in females in European countries.[15]

Many of risk factors involved in developing urinary bladder carcinoma but smoking is one of the major risk factor for bladder carcinoma. The incidence rate of carcinomas is quite high in smokers with high rate of mortality and morbidity as compared to non-smoker patients.[16] Occupational factors such as workers in dye, rubber, leather and aluminium industries were on high risk of developing bladder cancer and approximately 20% of carcinoma patients had occupational risk factors.[17,18] It has been observed that male patients population had high rate of bladder carcinoma as compared to females.[19]

In present study, majority of patients were males 74% as compared to females 26%. These results showed similarity to the study conducted by Horstmann et al[20] in which they reported males patients was high in number as compared to females with male to female ratio 2:1. Another study by Hoke et al[21] reported male patients had high incidence rate of bladder carcinoma as compared to females with ratio 1.33 to 1. A study by Quirk et al[22] and Koyuncuer et al[23] demonstrated the ratio of male-to-female patients to be 3.2:1, 3.76:1 respectively.

In our study we found that 58.7% patients had ages less than 50 years and 41.3% patients had ages above 50 years. Previous studies reported patients with elderly ages had high rate of urinary bladder carcinoma as compared to younger and middle age population.[24,25] A study conducted by Horstmann et al[20] reported that majority of patients with urinary bladder cancer were of elderly ages with mean age 62 years in males ad 67

years in females. Many of previous studious reported the mean age of patients were 60.2 to 74.2 years.[21-23,26] Urinary bladder carcinoma is one of the most common life threatening malignant disorder. Early and accurate diagnosis helps to reduce the morbidity and mortality rate.

CONCLUSION

Ongoing international collaborations amongst pathologists have led to emerging standards in the reporting and microscopic diagnosis of bladder cancer specimens. The mortality rate is low today, owing to the fact that scientists are conducting extensive research and exhaustive investigations in this field. In the present study, the overwhelming majority of urothelial carcinoma is composed of both genders with a peak incidence in the seventh decade.

Author's Contribution:

Concept & Design of Study:	Saima Gulzar
Drafting:	Sidra Farooq
Data Analysis:	Muhammad Naim Ashraf
Revisiting Critically:	Saima Gulzar, Sidra Farooq
Final Approval of version:	Saima Gulzar

Conflict of Interest: The study has no conflict of interest to declare by any author.

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