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Original Article

Spectrum and Presentation of Urinary Bladder Growth: a Single-Center Retrospective Study

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ABSTRACT

Introduction: Urinary bladder cancers are heterogeneous diseases consisting of a divergent group of tumors. Diseases of the urinary bladder, both neoplastic and nonneoplastic contribute to notable mortality and morbidity. Histopathology remains the gold standard of diagnosis. Bladder transurethral resection of the tumor is a therapeutic procedure that ensures the material necessary for histopathological diagnosis because it allows assessment of the degree of differentiation, depth of tumor invasion, parameters useful in the elaboration of diagnosis and prognosis assessment

Material and Methods: All the urinary bladder biopsies submitted in the pathology laboratory during 2 years time period were included in the study.

Results: Among the 51 total cases in the study, the male to female ratio was 4.67:1 with the age group of 22-96 years. Among the study population, 30 (52.7%) presented with hematuria, 10 (19.2%) with burning micturition, frequent urination, and lower abdominal pain. In the study, 44 (86%) showed neoplastic lesions while 7(14%) remaining were non-neoplastic lesions. Infiltrative urothelial carcinoma with low and high grades was diagnosed in 23% (12/51)

Conclusions: This study has revealed that neoplastic lesions are more common than non-neoplastic lesions. A great majority of neoplastic lesions are of urothelial origin. Majority of which are invasive urothelial neoplasm. All urothelial neoplasms are more common in males. Cystoscopic studies and biopsies help in the early detection of bladder neoplasms and they form the mainstay of the diagnosis and follow-up.

Keywords: Cystoscopy; Hematuria; Urothelial Neoplasm

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INTRODUCTION

Both neoplastic and non-neoplastic lesions of the urinary bladder are quite common. The non-neoplastic lesions comprise a number of symptoms and signs which are more disabling than fatal.[1] The prevalence of bladder tumors in developed countries is approximately six times higher when compared with that in developing countries.[2] Neoplasm of the bladder accounts for 6% and 2% of cancer in men and women respectively[3] Urothelial carcinoma is the common type accounting for 90% of all primary tumours of the bladder.[1] Urinary bladder cancer is the sixth most common cancer in the world and the most common neoplasm of the genitourinary tract.[3]

Cystoscopy is the primary diagnostic tool for direct examination of the bladder neoplasm which also helps in taking biopsies from respective diseased area[4]. Bladder transurethral resection of the tumor is a therapeutic procedure that ensures the material necessary for histopathological diagnosis because it allows assessment of the degree of differentiation and depth of tumor invasion both parameters that are useful in the elaboration of diagnosis and prognosis assessment[5] In this study, we aim to find out the histopathological features of various lesions in bladder biopsies.

METHODS AND MATERIALS

This was a retrospective and prospective study conducted in the department of pathology with approval from the institutional review board, MMIHS. The study was done for a period of two years (January 2016 to December 2018). The material for the study comprised of biopsies from transurethral resection of bladder tumour (TURBT) and cystoscopic samples. Clinical history and cystoscopic findings were taken from the patient record. All the bladder biopsies were received during the study period. in the department of pathology, MMTH was included. Inadequate bladder biopsies were defined as biopsies that could not be interpreted by the pathologist due to inadequate content or poor preservation. All the biopsies were immediately fixed in 10% formalin and processed routinely. The slides were stained with H and E and light microscopy technique was used for diagnosis.

RESULTS

Among the 51 total cases in the study, the male to female ratio was 4.67:1 with the age group of 22-96 years. Table 1 shows the age-wise distribution of the cases. The age group of 60-80 years had higher prevalence followed by 40-60 years, 80-100 years, and 20-40 years. Among the study population, 30 (52.7%) presented with hematuria, 10 (19.2%) with burning micturition, frequent urination, and lower abdominal pain (Table 2).

Table 1: Distribution of patients according to Age

Age group	Frequency (%)
20-40 yrs	4(7.8)
40-60	20 (39.2)
60-80	21(41.1)
80-100	6(11.7)

Table 2: Distribution of patient according to clinical features

Clinical features	Frequency(%)
Hematuria	30(58.8)
Burning Micturition	10(19.6)
Frequency	10(19.6)
Pain lower abdomen	10(19.6)
Hesistency	7(13.7)
Dysuria	7(13.7)
Urgency	6(11.7)
Fever	4(7.8)
Nocturia	4(7.8)

In the study, 44 (86%) showed neoplastic lesions while the remaining 7(14%) remaining were non-neoplastic lesions (Table 3). The most common histopathological diagnosis was Infiltrative urothelial carcinoma comprising 24 (4732%) followed by Non-invasive papillary urothelial carcinoma (n=15; 30.4%).

Table 3: Distribution of patient according to Histopathological Diagnosis

Histopathological Diagnosis	Total Number of cases (n = 51)
Cystitis cystica	4 (7.84%)
Hemangioma	1(1.96%)
Urothelial Hyperplasia	2 (3.92%)
Urothelial Dysplasia	4 (7.84%)
Non-Invasive Papillary Urothelial Carcinoma, Low Grade (fig. 1)	9 (18.64%)
Non Invasiove Papillary Urothelial Carcinoma, High Grade	6 (11.76%)
Infiltrative Urothelial Carcinoma, Low Grade	12 (23.52%)
Infiltrative Urothelial Carcinoma, High Grade (fig. 2)	12 (23.52%)
Poorly Differentiated Carcinoma (fig. 3)	1 (1.96%)

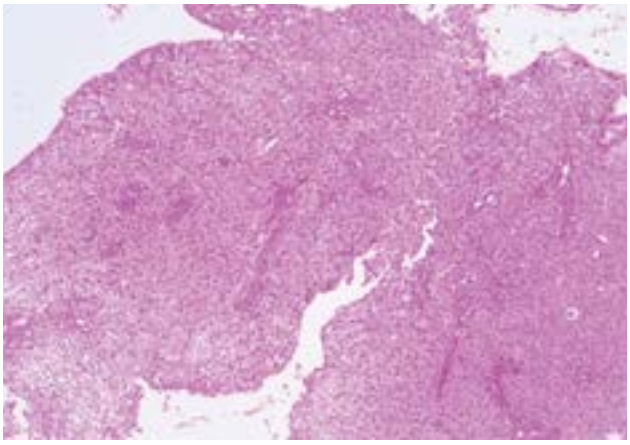

Figure 1: Non-Invasive Papillary Urothelial Carcinoma, Low Grade (HE stain, X50)

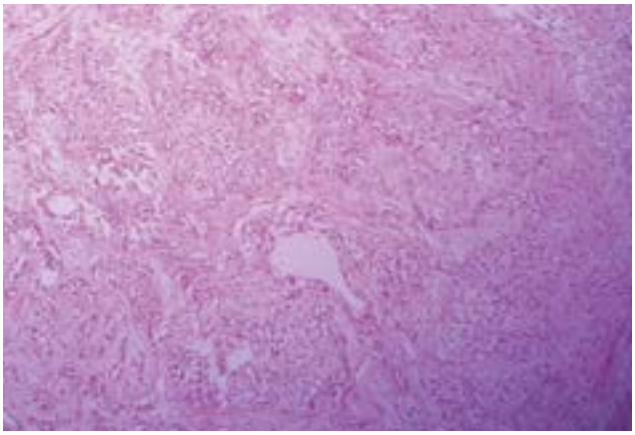

Figure 2: A) Infiltrating Urothelial Carcinoma, High Grade (HE stain, X50)

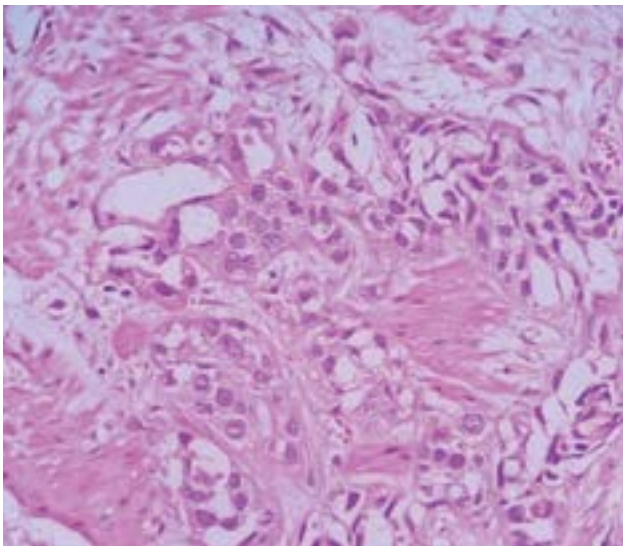

Figure 2: B) showing invasion into the muscular tissue (HE stain, X100)

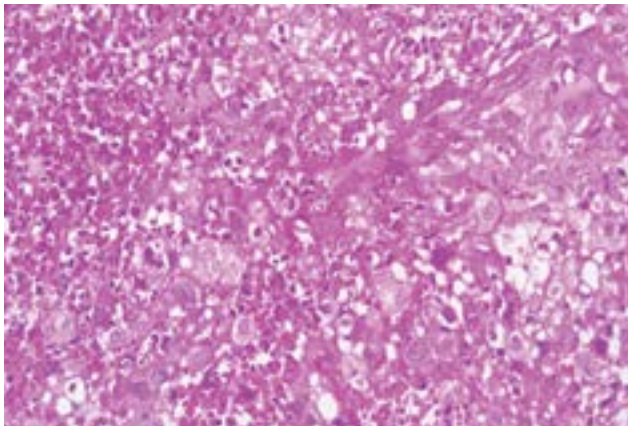

Figure 3:Poorly differentiated carcinoma (HE stain, X100)

DISCUSSION

Urinary bladder malignancy is the major cause of morbidity and mortality. It is the fourth most common malignancy in men.[6] Primary diagnostic tool is cystoscopy and the most frequently used diagnostic procedure is TURBT.[7] In the present study 86% were neoplastic lesions and 14% were nonneoplastic lesions which were comparable with the study of Shruthi et al[7] and Shrestha et al.[8]

The commonest age group of tumor presentation was 60-80 years with a male to female ratio of 4.6:1 which were comparable with other studies Shrestha et al[8] and Kousthuba et al.[9] The most common presenting complaints were hematuria followed by urgency, frequency, and pain abdomen which were comparable with a study conducted by Shruthi et al.[7]

The most common non-neoplastic lesion in our study is cystitis cystic (8%) followed by urothelial hyperplasia(4%). This was in contrast with a study conducted by Shrestha et al[8], where papilloma (7.1%) was the commonest followed by Papillary urothelial neoplasm of low malignant potential (2.4%) and Suba et al[10] where chronic non-specific cystitis was commonest followed by follicular cystitis.

As already known, a vast majority of tumors of the urinary bladder are of epithelial origin, which arises from urothelium, a transitional type epithelium that lines the bladder.[9] Approximately 90% of malignant tumors are transitional cell carcinomas. The remaining 10% comprises all other types of carcinoma.[11] In this study too, urothelial carcinoma was the most common urinary bladder neoplasm comprising 96% of cases, which correlates with the study conducted by Kousthuba et al[9] (96%), Shrestha et al[8] (85.7%), and Mahesh et al (81.1%).[1]

In our study, high-grade urothelial carcinoma was seen in 50% of cases and low-grade urothelial carcinoma was seen in 50%. This correlates with the study conducted by Mahesh et al[1] in which high-grade urothelial carcinoma comprised 53.5% compared to low-grade urothelial carcinoma which comprised 42.8%. In contrast, Matalka et al[3] found 60% of cases were low-grade urothelial carcinoma and only 40% were of high-grade urothelial carcinoma.

CONCLUSIONS

TURBT is done in neoplastic lesions more commonly than in non-neoplastic lesions. Most of the non-neoplastic lesions are cystitis cystica and urothelial hyperplasia. A great majority of neoplastic lesions are of urothelial origin. The majority of which are invasive urothelial neoplasm Cystoscopic studies and biopsies help in the early detection of bladder neoplasms and they form the mainstay of the diagnosis and follow up.

REFERENCES

1. Kumar MU, Yelikar BR. Spectrum of Lesions in Cystoscopic Bladder Biopsies: A Histopathological study. Al Ameen J Medical Sci. 2012;5:132-6: Website
2. Lopez-Beltran A, Bassi PF, Pavone-Macaluso M, Montiron R. Handling and Pathology Reporting of Specimens with Carcinoma of the Urinary Bladder, Ureter, and Renal Pelvis; European Urology 45 (2004): 257–66: Crossref
3. Matalka I, Bani-Hani K, Shotar A, Bani Hani O, Bani-Hani I. Transitional cell carcinoma of the urinary bladder: a clinicopathological study. Singapore Med J. 2008 Oct;49(10):790-4. Website
4. Amin MB. APII Urinary bladder biopsy interpretation part-1, College of American
5. pathologists, 2004: [Cited on 12th October 2021) Available from: Website
6. Kim LHC, Patel MI. Transurethral resection of bladder tumour (TURBT). Transl Androl Urol 2020;9(6):3056-72 : Website
7. Kirkali Z, Chan T, Manoharan M, Algaba F, Busch C, Cheng L, et al. Bladder cancer: epidemiology, staging and grading, and diagnosis. Urology. 2005;66:4-34. Website

8. Shruthi HP, Rangaswamy.R. Spectrum of Lesions in Urinary Bladder Biopsies-A

9. Histopathological Study.IJHSR. 2015;5(5):144-52: Website

10. Shrestha EP, Karmacharay K: Profile of histopathological lesion of urinary bladder- A five year study. Journal of Pathology of Nepal 2016 (6):1001-4: Website

11. Srikousthubha, Sukesh, C V R, Hingle S. Profile of Lesions in Cystoscopic Bladder Biopsies: A histopathological Study; J Clin Diagn Res. 2013;8:1609–12: Website

12. Suba G, Gayathri J, Jayaprakash HT. Histopathological overview of cystoscopic bladder biopsies- A retrospective analysis.Trop J Path Micro 2017;3(2):229-34: Website

13. Reuter VE. Bladder - Risk and prognostic factors – a pathologist's perspective. Urologic Clinics of North America 1993;26 (3):481-91: https://pubmed.ncbi.nlm.nih.gov/10494286; Crossref