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# Histopathological Profile of Urinary Bladder Tumours at Tertiary Care Centre in a Northern State of India: A Cross Sectional Study

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## ABSTRACT

**Background:** Urothelial carcinoma of urinary bladder cancer is the fourth most common cancer in men and eighth most common malignancy in women in the Western world. It is three times more common in men than in women and 90% of the bladder tumours are transitional cell carcinoma (TCC). Cystoscopic examination has a limited role in staging process for which transurethral resection (TURBT) of visible tumour down to the base is required which can accurately assess depth of tumour invasion.

**Design:** This record based cross sectional study was carried out in the department of Pathology, Indira Gandhi Medical College, Shimla over a period of one year from January to December 2018. Data was collected from records using a structured clinical Performa which included various sociodemographic and clinical variables. WHO (2016)/ISUP classification was used to classify bladder tumours.

**Result and Discussion:** The mean age of presentation was 60 years with male female ratio 3.8:1. Majority (94.5%) of the malignancies were papillary urothelial carcinoma with equal proportion of high and low grade. Muscle invasion was significantly higher in high grade (78%) as compared to low grade papillary urothelial carcinoma (1.6%). These parameters were comparable to other studies.

**Conclusion:** Among Urothelial tumours the most common bladder tumours, primary epithelial malignancies are more common. High grade urothelial carcinomas are usually associated with muscle invasion supporting correlation of histologic grade with aggressiveness. These findings were also seen in various other studies in literature.

***Key Words:*** Bladder cancer, TURBT, Papillary urothelial carcinoma, Muscle invasion, Epithelial malignancies

## INTRODUCTION

Among urological malignancies, bladder cancer is most common. Urothelial carcinoma of urinary bladder cancer is the fourth most common cancer in men and eighth most common malignancy in women in the Western world. [1] As per the Indian cancer registry data in men, bladder cancer is the ninth most common cancer accounting for 3.9% of all cancer cases. [2] Despite significant inroads into their origins and improved methods of diagnosis and treatment, tumours of the bladder continue to extract a toll in morbidity and mortality. [3] It is three times more common in men than in women, and 90% of the bladder tumours are transitional cell carcinoma (TCC). [4]

The median age at diagnosis was 69 years old for males and 71 years old for females. [5] Most TCC at initial diagnosis are papillary and superficial, and as many as 70% are characterised by a prolonged clinical course over which the patient experiences multiple recurrence after local resection without tumour progression. [6] In contrast, a smaller but significant percentage

of patients have advanced and muscle - infiltrative tumour at the time of diagnosis. [7] Various imaging modalities like ultrasonography, intravenous urography, computed tomography and magnetic resonance imaging can be used for detection and staging. [8] However, cystoscopic examination has a limited role in staging process for which transurethral resection (TURBT) of visible tumour down to the base is required which can accurately assess depth of tumour invasion. [9]

## MATERIALS AND METHODS

This record based cross sectional study was carried out in the department of Pathology, Indira Gandhi Medical College, Shimla. The data of all the transurethral resection of bladder tumour (TURBT) specimens was collected from record register of January to December 2018. Data was collected using a structured clinical Performa which included various sociodemographic and clinical variables. WHO (2016)/ISUP classification was used to classify bladder tumours. [10] Data was analysed using Epi Info software version 7.2.2. Data was presented as frequencies, percentages and their 95% confidence intervals.

Results: we had collected information regarding 133 TURBT specimens received in the department of pathology during study period.

**Table1. Description of different sociodemographic and clinical variables of TURBT specimens.**

| Variable | Number(n) | Percentage (%) | 95% Confidence interval (%) |
|---|---|---|---|
| 1.Age group(years) | | | |
| 18-45 | 14 | 10.5 | 5.9-17.0 |
| 46-60 | 46 | 34.6 | 26.5-43.3 |
| >60 | 73 | 54.9 | 46.0-63.5 |
| 2.Gender | | | |
| Male | 105 | 78.9 | 71.0-85.5 |
| Female | 28 | 21.0 | 14.5-29.0 |
| 3.Diagnosis | | | |
| Papillary urothelial carcinoma | 126 | 94.5 | 89.5-97.9 |
| Squamous cell carcinoma | 3 | 2.3 | 0.5-6.5 |
| PUNLMP* | 1 | 0.8 | 0.02-4.1 |
| Chronic non specific cystitis with dysplasia | 3 | 2.3 | 0.5-6.5 |
| 4.Grade** | | | |
| Low | 64 | 50.8 | 41.7-59.8 |
| High | 62 | 49.2 | 40.2-58.3 |
| 5. Lamina propria Invasion | | | |
| Yes | 121 | 91.0 | 84.8-95.3 |
| No | 12 | 9.0 | 4.8-15.2 |
| 6. Muscularis propria invasion | | | |
| Yes | 52 | 39.1 | 30.8-47.9 |
| No | 75 | 56.4 | 47.5-65.0 |
| Not known | 6 | 4.5 | 1.7-9.6 |

*Papillary urothelial neoplasm of low malignant potential.
** For papillary urothelial carcinoma.

**Table2.Comparison of histopathological grade of papillary urothelial carcinoma in various age groups:**

| Sr.No. | Histopathological grade | Age group(years) | | |
|---|---|---|---|---|
| | | 18-45, n(%) | 46-60, n (%) | >60, n (%) |
| 1. | Low grade | 9 (14.1) | 22 (34.4) | 33(51.6) |
| 2. | High grade | 4 (6.5) | 21 (33.9) | 37 (59.7) |

**Table3.Comparison of histopathological grade of papillary urothelial carcinoma with gender:**

| Sr.No. | Histopathological grade | Gender | |
|---|---|---|---|
| | | Male n (%) | Female n (%) |
| 1. | Low grade | 49 (76.6) | 15 (23.4) |
| 2. | High grade | 50 (80.7) | 12 (19.4) |

**Table 4. Comparison of histopathological grade of papillary urothelial carcinoma with muscle invasion.**

| Sr.No. | Histopathological grade | Muscle invasion (%) | p-value |
|---|---|---|---|
| 1 | Low grade | 1.6% | <0.001 |
| 2 | High grade | 78% | |

## RESULTS

Total 133 TURBT specimens were received during one year study period. Most of the patients were in age group of >60 years (54.9%) and 105 (78.9%) were males with male to female ratio 3.8:1.

On histopathological diagnosis, most of the cases were papillary Urothelial carcinoma in 126 (94.5%) out of which 64 (50.8%) were low grade and 62 (49.2%)

were high grade followed by chronic non specific cystitis with dysplasia in 3 (2.3%), squamous cell carcinoma 3 (2.3%), PUNLMP in 1(0.8%). 121 cases showed lamina propria invasion and 52 cases showed muscularis propria invasion. (Table 1). In low and high grade urothelial carcinomas, most of the patients were in >60 age group 33(51.6%) and 37 (59.7%) respectively. Males were 49 (76.6%) In low grade urothelial carcinomas and 50 (80.7%) in high grade urothelial carcinomas. Muscle invasion was more in high grade (78%) than low grade (1.6%) papillary urothelial carcinoma. P value was <0.001 which is significant.

## DISCUSSION

Urinary bladder neoplasms are a heterogeneous group with different subtypes having varied behaviour and outcomes. [11] More than 95% tumours are epithelial, out of which majority are of urothelial origin and very few are other histological types. [12] In our study, mean age of presentation was 60 years (range 32 -90 years) which is comparable to other studies. [13,14,11] In our study, Male to female ratio was 3.8:1 which is in concordance with other studies. [11,13,14] Higher incidence in males may be due to differences in smoking habits and occupational exposure. [15,16] In our study, majority of cases were of papillary urothelial carcinoma (94.5%) which is similar to other studies. [11,13,14] There was similar prevalence of Low grade (50.8%) and high grade (49.2%) papillary urothelial carcinoma in our study, while low grade papillary urothelial carcinomas were more common in the studies conducted by Laishram et al. [14] and Pudasaini et al. [17] However, high grade papillary urothelial carcinoma was more common in study done by Vaidya et al. [11]

Detection of muscle invasion is of paramount importance because of its influence on therapy and prognosis. [18] Muscle invasion was more in high grade (78%) than low grade (1.6%) urothelial papillary carcinoma. Similar findings were found by Goyal et al, [13] Vaidya S et al, [11] Laishram RS et al [14] supporting correlation of histologic grade with aggressiveness of tumour.

## CONCLUSION

In the present study done on 133 TURBT specimens, majority were papillary urothelial carcinomas. Low grade and high grade papillary urothelial carcinomas had almost equal prevalence. Muscle invasion was more in high grade supporting correlation of histologic grade with aggressiveness of tumour.

## REFERENCES

1. Parkin DM, Whelan SL, Ferlay J, Teppo L, Thomas DB, editors. Cancer Incidence in Five Continents. Vol. VIII. Lyon, France: IARC Publications No. 155; 2002.
2. Kurkure AP. Cancer incidence and patterns in urban Maharashtra. Consolidated report of the population based cancer registries. 2001.
3. Mahesh Kumar U, B.R.Yelikar, Spectrum of lesions in cystoscopic bladder biopsies-A histopathological study. AJMS; 2012; 5(2); 132-36.
4. Rabbani F, Cordon-Cardo C. Mutation of cell cycle regulators and their impact on superficial bladder cancer. Urol Clin North Am. 2000;27:83–102.
5. Lynch CF, Cohen MB. Urinary system. Cancer. 1995;75:316–29.
6. Metts MC, Metts JC, Milito SJ, Thomas CR Jr. Bladder cancer: a review of diagnosis and management. J Natl Med Assoc 2000; 92:285-94.
7. Loening S, Narayana A, Yoder L, et al. Factors influencing the recurrence rate of bladder cancer. J Urol 1980; 123:29-31.
8. Tumors of the Urinary System. In: Eble JN, Sauter G, Epstein JI, Sesterhenn IA, editors. Pathology and Genetics of Tumors of the Urinary System and Male Genital Organs. 4th ed. Lyon: IARC press; 2004. pp.89-154.
9. Satoh E, Miyao N, Tachiki H and Fujisawa Y. Prediction of muscle invasion of bladder cancer by cystoscopy. EurUrol 2002;41(2): 178-181.
10. Moch, H., Humphrey, P.A., Ulbright, T.M., Reuter, V. WHO Classification of Tumours of the Urinary System and Male Genital

Organs. International Agency for Research on Cancer, Lyon, France; 2016.
11. Vaidya S, Lakhey M, K CS and Hirachand S. Urothelial tumours of the urinary bladder: a histopathological study of cystoscopic biopsies. J Nepal Med Assoc 2013; 52(191): 475-478.
12. Tumors of the Urinary System. In: Eble JN, Sauter G, Epstein JI, Sesterhenn IA, editors. Pathology and Genetics of Tumors of the Urinary System and Male Genital Organs. 4th ed. Lyon: IARC press; 2004. pp.89-154.
13. Goyal et al. A histopathologic study of urinary bladder tumors at tertiary care center in Mid-Western region of Nepal. Asian Journal of Medical Sciences | Nov-Dec 2018 | Vol 9 | Issue 6.
14. Laishram RS, Kipgen P, Laishram S, Khuraijam S and Sharma DC. Urothelial tumors of the urinary bladder in Manipur: a histopathological perspective. Asian Pac J Cancer Prev 2012;13(6):2477-2479.
15. Epstein JI. The Lower Urinary Tract and Male Genital System. In: Kumar V, Fausto N, Aster JC, Abbas AK, editors. Robbins and Cotran Pathologic basis of disease. 8th ed. Philadelphia: Elsevier; 2010. pp.974-981.
16. Gupta P, Jain M, Kapoor R, Muruganandham K, Srivastava A and Mandhani A. Impact of age and gender on the clinicopathological characteristics of bladder cancer. Indian J Urol 2009;25(2): 207-210.
17. Pudasaini S, Subedi N, Prasad KB, Rauniyar SK, Joshi BR and Bhomi KK. Cystoscopic bladder biopsies: a histopathological study. Nepal Med Coll J 2014;16(1):9-12.
18. Urinary tract-bladder. In: Rosai J, editor. Rosai and Ackerman's Surgical Pathology. 10th ed. New delhi: Elsevier; 2011. pp.1247-1286.

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