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RESEARCH ARTICLE

BLADDERTUMORS- A YEAR EXPERIENCE AT A TERTIARY CARE HOSPITAL

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ABSTRACT

Abstract; Bladder cancer is the 10th most common form of cancer worldwide, with an estimated 549,000 new cases and 200,000 deaths. These tumours are an important cause of morbidity and mortality. **Objective**: The objective of this study was to present the histopathological patterns of urothelial tumours and to determine the grade and stage of these tumours. **Methods:** This was a prospective study conducted on 110 TURBT biopsies and cystectomy specimens at Sheri Kashmir Institute of Medical Sciences, Soura Srinagar over a speriod of 1 year from Jan2017 to December 2017. **Results**; A total of 110cases were received. Out of those 105 cases (95.4%) were TUR biopsies and 5 were cystectomy specimens (4.54%) Hematuria was the most common clinical presentation and was seen in 90(81%) patients. Majority of patients were seen in 50-60 years of age(34 cases).Male to female ratio was 4:1 and mean age of 56.58.Transistional cell carcinoma was the most common type found(99 cases). Low grade TCC were seen in71 casea. Muscle invasion was seen in 26 cases. Tumor recurrence was seen in 20% of cases. **Conclusion:** Transitional cell carcinoma was the most common bladder tumour in our study. Most of these tumours were low grade. Pathological grade and muscle invasion are the most valuable prognostic predictors of survival.

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INTRODUCTION

Bladder cancer is the 10th most common form of cancer worldwide, with an estimated 549,000 new cases and 200,000 deaths. Bladder cancer is more common in men than in women, with respective incidence and mortality rates of 9.6 and 3.2 per 100,000 in men: about 4 times those of women globally (Siegel, 2018). Thus the disease ranks higher among men, in whom it is the sixth most common cancer and ninth leading cause of cancer death. About 80% of the cases, patients present with painless gross hematuria. 2Rest of the patients present with symptoms of bladder irritation like frequency, urgency and dysuria (Goyal, 2015). Tumor originates from the epithelium (urothelium) that covers the inner surface of the bladder, and urothelial carcinomas represent the most common type of bladder cancer. Bladder cancers with variant histology (that is, with distinct histomorphological phenotypes) have also been described (10–25% of cases) and include squamous cell carcinoma, small-cell carcinoma and adenocarcinoma. Variant histology bladder cancers are associated with locally aggressive disease, metastasis and poor response to existing Therapies (Billis, 2001). Important risk factors that have been implicated in the causation of bladder cancer include cigarette smoking, industrial exposure to arylamines, Schistosoma haematobium, long term use of analgesics, heavy long term exposure to cycophosphamides and prior exposure of the bladder to radiation (Johansson, 1997). Histopathological diagnosis is gold standard for all urinary bladder tumours. Though ultrasonography, computed tomography, Magnetic resonance imaging modalities has created a lot better understanding of urinary bladder lesions, still histopathological diagnosis is most important for staging and further management. The present study was done to study the histopathological spectrum of bladder tumors.

MATERIAL AND METHODS

This was a prospective study conducted on 110 TURBT biopsies and cystectomy specimens at Sheri Kashmir Institute of Medical Sciences(skims), Soura, Srinagar ,Jammu and Kashmir over a period of 1 year from Jan2017 to December

2017.Cystoscopic findings and clinical details were noted from the histopathological forms.

Inclusion criteria: All TURBT biopsies received in the Department of Pathology SKIMS.

Exclusion criteria: Autolysed specimens, Inadequate biopsies and non neoplastic lesions.

Biopsies were fixed in 10% formalin for 24 hours before the tissue is processed for paraffi n blocking. Five micron sections were cut and the prepared slides were stained with Hematoxylin and Eosin (H & E) stain. The histopathological features were studied and relevant fi ndings were noted. Th e World Health Organization (WHO) classifi cation of. The urinary tract (2016) was used to grade the tumors into infi ltrating urothelial carcinoma, non invasive urothelial neoplasia (low grade and high grade) and glandular neoplasms.

RESULTS

Table 1.

Type of specimen	No of cases	Percentage
TUR Biopsy	105	95.4
Cystectomy	5	4.54

A total of 110cases were received. Out of those 105 cases (95.4%) were TUR biopsies and 5 were cystectomy specimens (4.54%), (Table1).

Table 2. Clinical features

Symptom	No of cases	Percentage
Hematuria	90	82.72%
Pain abdomen	5	4.54%
LUTS	27	24.54%

In our study hematuria was the most common clinical presentation and was seen in 90(81%) patients followed by lower urinary tract symptoms e.g. dysuria, urgency, strangury e.t.c. seen in 27(30%)

Table 3. Age wise distribution

Age group	Males	Females	Total
20-30 years	2	1	3
31-40 years	6	2	8
41-50 years	16	4	20
51-60 years	28	6	34
61-70 years	24	5	29
71-80 years	10	3	13
› 80 years	2	1	3
	88	22	110

Maximum number of the cases were seen in age group 50-60 years (34) followed by 61-70 years (29). There were 20 cases in the age group of 41-50 years. The least number of cases i.e. 3 were seen in age group 20 years to 30 years. The youngest patient was 24 year old female with case of TCC (low grade) and the oldest patient was 91 years old also a case of TCC. Male to female ratio was 4:1 with mean age of 56.58. Transitional cell carcinoma was the most common tumor with 99 cases (90%) followed by 2 cases (1.81%) of PUNLMP and SCC. 1 case (0.90%) each of metastatic disease (from carcinoma cervix), adenocarcinoma, urothelial dysplasia, papilloma and Inflammatory myofibroblastic tumor. One case of nested variant of TCC was also reported in a cystectomy specimen. Of 99 cases of TCC, Primary tumors were found in 79 cases and recurrence in 20 cases. Single lesions were seen in 71 cases and multiple in 28 cases.

Table 4. Histopathological typing of Tumors

S. No	Histopathological Type	No of cases	Percentage
1	Transtitional cell carcinoma	99	90%%
2	Carcinoma- in- situ	1	0.90%
3	PUNLMP	2	1.81%
4	SCC	2	1.81%
5	Nested variant	1	0.90%
6	Adenocarcinoma	1	0.90%
7	Metastatic	1	0.90%
8	Urothelial dysplasia	1	0.90%
9	Papilloma	1	0.90%
10	Inflammatory myofibroblastic tumor	1	0.90%

Table 5.

Muscle invasion	No of cases	Percentage
No muscle seen	22	20%
No muscle invasion	62	56%
Muscle invasion	26	23.63%

Muscle invasion were seen in26 cases. Tumors were low grade in 71 cases and high grade in 28 cases

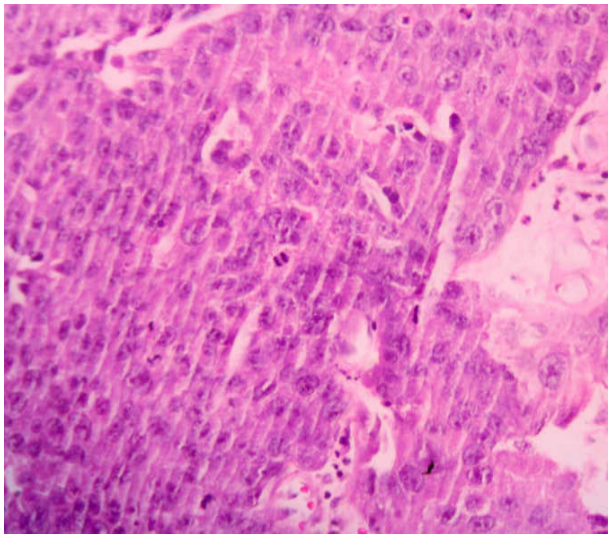

Fig. 1. Photomicrograph of high grade transistional cell carcinoma (400x)

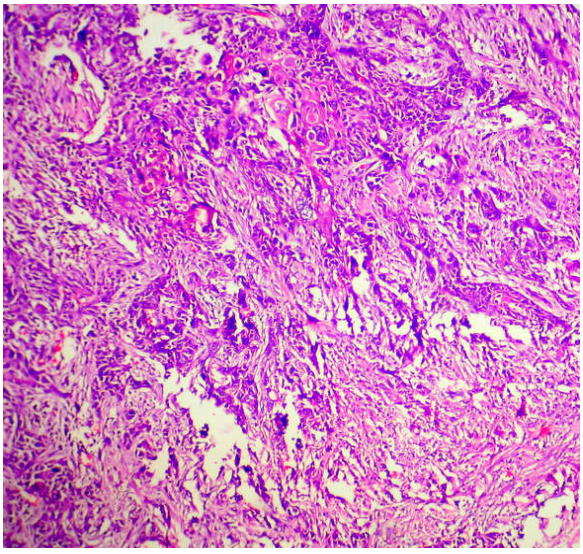

Fig. 2. Photomicrograph of Squamous cell carcinoma bladder (400x)

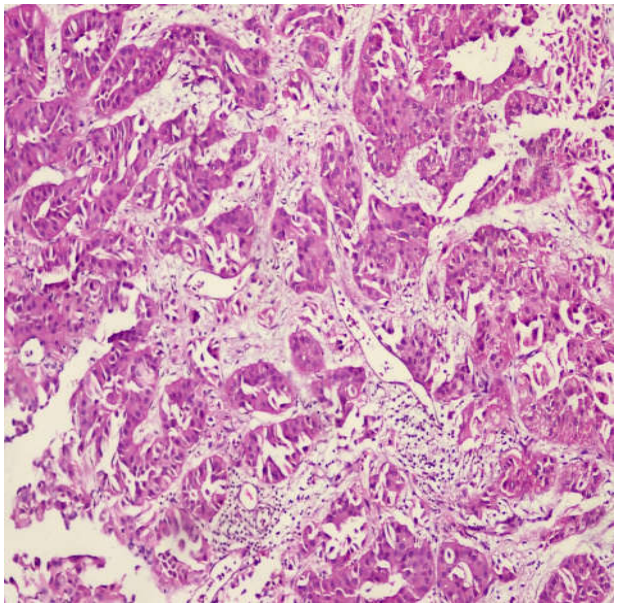

Fig. 3. Photomicrograph of adenocarcinoma bladder (400x)

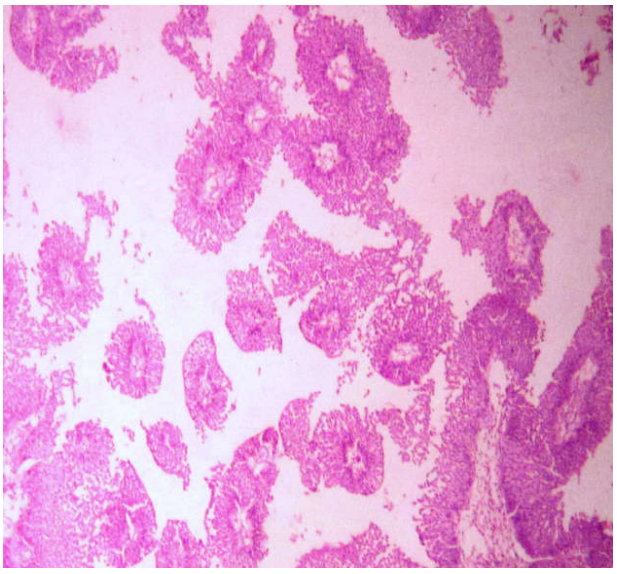

Fig. 4. Photomicrograph of Papilloma(400x)

Out of 5 cystectomies in our study all had high grade transitional cell carcinoma. All the 5 cases had pre-operative diagnosis of muscle-invasive high grade transitional cell carcinoma on previous TUR biopsy. Grossly 2 cases had tumor size 1-3cm, 1 had tumor size 3-5cm and in one case tumor size was more than 5cm.. 3 cases had ulceroproliferative growths and in 2 cases infiltrative growth was seen.. Tumor was grossly invading muscle in 3 cases and adventitia in 2 cases. 3 patients were in the age group of 50-60 years. 1 case was in the age group of 40 -50years and 60-70 years. One patient had prostatic involvement.3 cases were stage II and 2 were stage III.

DISCUSSION

Neoplastic urinary bladder lesions are responsible for significant morbidity and mortality throughout the world.1 Urothelial carcinoma is the most common tumor of the bladder, representing 90% of malignancies with this origin. The present study was done on 110 bladder biopsies /Cystectomy specimens. Of these 105 were TURBT biopsies and 5 were cystectomy specimens. Similar findings were noted by Beniwal *et al*. (2015) in their study who observed predominance of resection biopsies with 94.94% of the samples received comprising of resection biopsies and cystectomy specimens comprising 5.06%.

Gender wise distribution: Out of 110 cases, 88 were males and 22 females with male to female ratio of 4:1 .The results of our study were comparable with study by Sehli *et al.* (2014) who observed 81.87% of cases with neoplastic lesions were males.

Age wise distribution: Majority of patients were seen in age group of 50-60 years (34cases) followed by 60-70 years (29cases) Mean age of patients was 56.58.Youngest patient was 21 year old and oldest was 94 year old. In a study conducted by Panchal Jaimin & Khandige Shreesha (2015), maximum number of patients of urothelial carcinoma were in the age group 50-59years. Study of Shruthi *et al.* (2015) and Agarwal *et al*. (2018) also yielded similar results.

Presenting Symptoms: In our study hematuria was the most common clinical presentation and was seen in 90(81%) patients followed by lower urinary tract symptoms e.g. dysuria, urgency, strangury e.t.c. seen in 27(30%). Goyal *et al.* (2015) found hematuria was the most common clinical symptom in 91% cases, followed by strangury (48%), burning (39%) and pain in 38% of cases in their study. Mustafa *et al.* (2014) observed hematuria was seen in 78% of the TCC patients in their study.

Histopathological diagnosis of neoplastic lesions: Transitional cell carcinoma was the most common tumor with 99cases (90%) followed 2 cases (1.81%) of papillary urothelial neoplasms of low malignant potential and SCC (1.81%). 1 case(0.90%) each of adenocarcinoma, metastatic carcinoma, urothelial dysplasia, papilloma and inflammatory myofibroblastic tumor. In addition 1 case of nested variant of urothelial carcinoma was also found. Mustafa *et al.* (2014) observed the most common type of tumor (98.5%) was transitional cell carcinoma while as 0.56%, 0.28%, 0.28%, and 0.28% were squamous cell, clear cell, papillary adenocarcinoma and sarcomatoid carcinoma respectively. EP Shrestha (2016) also found transistional cell carcinoma to be the most common type. Metastatic lesions comprised 0.90% of the neoplastic cases in our study. And was a case of squamous cell carcinoma Mubarak *et al.* (2014) in their study found squamous cell carcinoma primary from the cervix in a middle-aged female f cervix metastasizing to urinary bladder.

Distribution based on recurrence: In our study 79(79.89%) cases were primary and 20(20.20%) cases were recurrent. Recurrence was more common in cases with previous diagnosis of high grade transitional cell carcinoma Matalka *et al.* (2008) studied a total of 115 patients and found recurrence in 22 patients (31.4 percent).

Number of lesions: 69% of the cases had single lesion on cystoscopy in our study and 21% had more than one lesion. Ghulam jeelani *et al.* (2005) conducted a study on urinary bladder lesions and found that 70% of the cases had single lesion and rest had more than one lesion. Sehli *et al* (2014) observed 82.22 % of the cases were unifocal and the rest of the cases had multifocal lesions. Our study was almost in accordance with these studies.

Grading of transitional cell carcinoma: Of total 99 cases of transitional cell carcinoma, cases 71(were of low grade transitional cell carcinoma and 28 cases (28% were of high grade. 5.84% of low grade urothelial carcinoma and 67.57% of high grade urothelial carcinoma were invading muscle.

Mustafa *et al.* (2014) observed 51.4% were low grade and 21.4% were high grade transitional cell carcinoma in their study.

Muscle invasion in transitional cell carcinoma: Of 110 cases 62 cases (50.14%) had no invasion of muscle and in 22 cases (20%) muscle invasion was seen. No muscle was identified in 26 cases (23.63%).

Beniwal *et al.* (2015) showed 70.9% cases were superficial (pTa and pT1), and 29.1% cases were muscle invasive (pT2). For low-grade carcinoma, 20 (21.7%) out of 92 cases showed muscle invasion whereas 23 (54.7%) out of 42 cases of high-grade were muscle invasive.

Grading of transitional cell carcinoma: Of 99 cases of transitional cell carcinoma, 71 cases (61.74%) were of low grade transitional cell carcinoma and 28 cases (28.28%) were of high grade. Mustafa *et al.* (2014) observed 51.4% were low grade and 21.4% were high grade transitional cell carcinoma in their study.

Cystectomy specimens Out of 5 cystectomies in our study all had high grade transitional cell carcinoma. All the 5 cases had pre-operative diagnosis of muscle-invasive high grade transitional cell carcinoma on previous TUR biopsy. Grossly 2 cases had tumor size 1-3cm, 1 had tumor size 3-5cm and in one case tumor size was more than 5cm. 3 cases had ulcer proliferative growths and in 2 cases infiltrative growth was seen.. Tumor was grossly invading muscle in 3 cases and adventitia in 2 cases. 3 patients were in the age group of 50-60 years. 1 case was in the age group of 40 -50years and 60-70 years. One patient had prostatic involvement. In our study, 2 of the cystectomy cases had AJCC stage II, followed by 2 cases in stage III. Słojewski (2000), transitional cell carcinoma was present in 97.8% of the bladders and based on the pathologic stage and assigned patients to 2 groups: organ confined disease (pT2-3a, 41.3%) and perivesical or adjacent organ involvement (pT3b-4, 58.7%)

Conclusion

Histopathology plays as important role not only giving the diagnosis but also provides the additional information to the urologist that can have impact on the treatment.

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