

SUPERFICIAL BLADDER TUMOUR RECURRENCE ON FRIST CHECK CYSTOSCOPY AFTER TRANSURETHRAL RESECTION

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ABSTRACT

Objectives: To determine the frequency of recurrence of Superficial Transitional Cell Carcinoma on first check cystoscopy after TURBT in six months at the Institute of Kidney Diseases Peshawar.

Methodology: All adult male and female patients with superficial transitional cell carcinoma of urinary bladder were evaluated and resection of the tumour was done and tissue sent for histopathology. Three months after resection, the patients were followed up by cystoscopy and findings noted. Recurrent growth, if present, was resected and sent for histopathology. All the above information were recorded and entered into a structured proforma. The data were analyzed through SPSS version 14 and results were presented in the form of tables and graphs.

Results: Our study included 41 patients. 33 (80.5%) were males and 8 (19.5%) females. The age ranged from 28 to 85 years with a mean of 59.22 ± 11.47 years. The presenting T-stage was pTa in 11 (26.8%) patients and pT1 in 30 (73.2%) patients. The presenting histological grade was G-I in 16 (39%), G-II in 10 (24.4%) and G-III in 15 (36.6%) patients. On first check cystoscopy, 28 (68.3%) patients showed recurrence while the rest, i.e. 13 (31.7%), showed disease free status. Out of 28 cases with recurrence, 2 (4.9%) showed pTa and 26 (63.4%) showed pT1. The recurrence of histological G-I, G-II and G-III were 5, 8 and 15 respectively.

Conclusion: Recurrence of superficial TCC at first check cystoscopy is high and has a predictive value for future recurrence of the disease.

Key Words: Urinary bladder, Carcinoma, Transitional cell, Recurrence.

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INTRODUCTION

Urinary bladder is the most common site for urological tumours¹. About 90% of bladder tumours are transitional cell carcinomas (TCC)². TCC is of superficial or non-muscle invasive form

and deep or muscle invasive form. Superficial TCC consists of tumours which are confined to mucosa (pTa) and those which cross the basement membrane and involve the submucosa or lamina propria (pT1)³. pTa is present in 70% and pT1 in 30% of cases at presentation⁴.

White light cystoscopy is the standard diagnostic tool for bladder tumours⁵. Trans-urethral resection (TURBT) is the standard treatment. TCC has a natural course of multiple recurrences and progression in terms of histological grade and T-stage. 70% of superficial TCC recur after TURBT and 25% will progress to more invasive forms⁶. The rates of recurrence and progression can be minimized by intravesical chemo (MMC) or immunotherapy (BCG)⁷. According to EORTC risk tables tumour diameter, multiplicity, prior recurrence, presence of concomitant carcinoma in situ, T-stage and histological grade can predict future recurrence and progression of the disease⁸.

Every patient should have a check cystoscopy three months after the initial TURBT. Patients who have a recurrence at first check

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cystoscopy, are at a higher risk of further future recurrences as compared to those with no recurrence⁹.

In our study, we have calculated the frequency of recurrence of superficial Transitional Cell Carcinoma at first check cystoscopy three months after the initial TURBT. The results of the study will be shared with other concerned healthcare professionals so that they monitor the patients more carefully for the risk of recurrence of superficial bladder cancer after resection.

METHODOLOGY

All adult patients with a suspected bladder tumour presenting at OPD and ER Department of The Institute of Kidney Diseases, Peshawar from 17th March 2010 to 17th September 2010 were enrolled after taking their written informed consent and prior permission of hospital ethical committee. This was a case series, in which all patients were evaluated by clinical history, examination and investigations such as urine R/E and cytology, ultrasound abdomen/pelvis and chest radiograph. White light cystoscopy was done using 22 Fr Karl-Storz Germany cystoscopic sheath and 70° telescope. The papillary growth in bladder was completely resected (TURBT) using 26 Fr Karl-Storz Germany resectoscopic sheath and 24 Fr resecting loop and 30° telescope by an experienced urologist and the resected tissue was sent for histopathology. If it came to be superficial TCC, they were included in the study. If there was any suspicion of concomitant Carcinoma in situ, a

random bladder biopsy was taken. A biopsy of the muscle at the tumour base was taken and sent separately. The exclusion criteria were followed strictly and patients with concomitant CIS were excluded. Patients with Superficial T.C.C were followed up, after three months with white light cystoscopy and findings noted. Any tumour growth on the same or new location was resected again by the same urologist and sent for histopathology. All the above information were recorded and entered in a structured proforma.

The data were analyzed through SPSS version 14. Mean and standard deviation were calculated for numerical variables, i.e. age of patients. Frequency and percentages were calculated for categorical variables, i.e. gender, recurrence, histological grade and T-stage.

RESULTS

Forty one patients were included (n=41). Males were 33 (80.5%) and females 8 (19.5%) with a male to female ratio of 4.1: 1. The mean age at presentation was 59.22 years with majority of patients (30 patients, 73.12%) falling in the age range of 50-70 years. The most common T-stage at presentation was pT1 (Table 1) while the most common histological grade at presentation was G-I (Figure 1). The frequency of recurrence was 68.3% (28) 3 months after TURBT. In the group without recurrence 61.5% (8) of cases were pTa and 38.5% (5) to pT1. Similarly majority of cases, in no recurrence group, were histologically G-I (61.5%, 8), while 3 and 2 cases were G-II and G-III

Table 1: Frequencies of T-stage at Presentation

	Frequency	Percent
pTa	11	26.8
pT1	30	73.2
Total	41	100.0

Figure 1: Frequencies of various Histological Grades at Presentation (n=41)

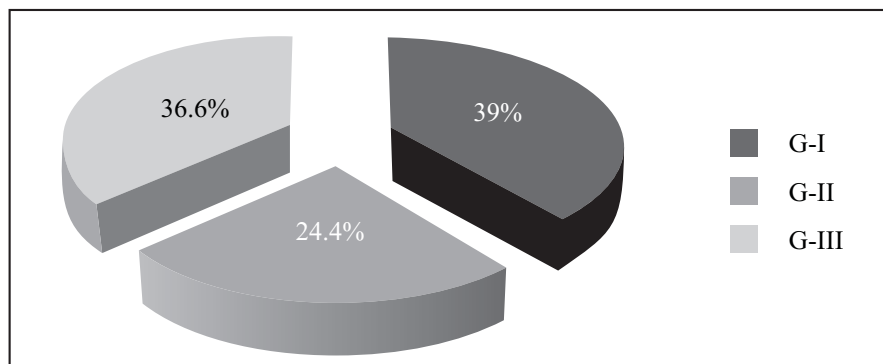
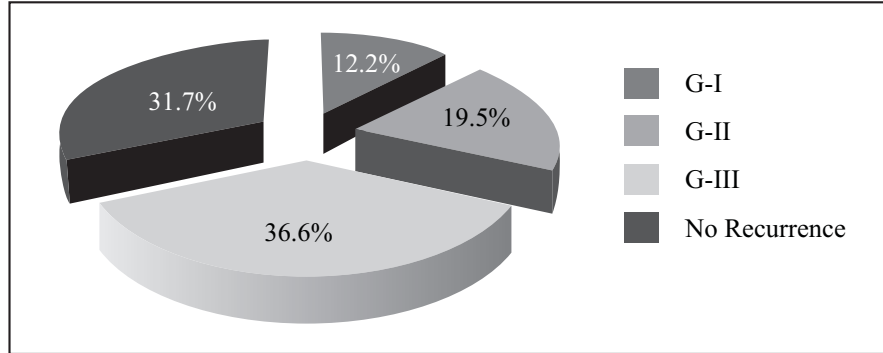


Table 2: Frequencies of Recurrent T-stage

	Frequency	Percent
Not Applicable	13	31.7
pTa	2	4.9
pT1	26	63.4
Total	41	100.0

Figure 2: Frequencies of various Recurrent Histological Grades (n=41)



respectively. In the group of patients with recurrence, majority belonged to pT1 (89.3%) and G-III (46.4%) (Table 2 and Figure 2, respectively). T-stage progression was noted in only one case from pTa to pT1. Progression of histological grade was noted in 3 cases from G-I to G-II, 3 cases from G-I to G-III and 5 cases from G-II to G-III. Down grading occurred in 2 cases from G-II to G-I, 4 cases from G-III to G-II and one case from G-III to G-I. In recurrence group, there were 11(39.3%) cases of pT1G-III (T1G3) tumours.

DISCUSSION

Transitional Cell Carcinoma (TCC) of urinary bladder is a disease of the elderly and male population. Our study shows the most common presenting age group to be 50-70 years of age and a male to female ratio of 4.1:1. Fritsche's study population had a median age of 66.6 years (29.3-94.2) with a male-to-female ratio of 4:1¹⁰. The mean age in our study was 59.22 years (SD: +/- 11.47) and 80.5 % were males while the mean age was 65.8 years (SD: +/- 11.8) and 82.8 % were males in a study conducted in Iran by Karimianpour et al¹¹. Our study also has some similarity to another Iranian research conducted by Halimi et al which showed a mean age of 64.69 +/- 12.99 years and a study population having 71% males and 29% females¹².

Our study has revealed that at initial presentation, superficial bladder TCC shows a predominance of stage pT1 as it was found in

73.2% of the cases and the remaining 26.8% were pTa. These findings are supported by a study done by Akagashi K et al in Japan, showing abundance of pT1 tumours i.e. pTa and pT1 in 25.4% and 74.6% of cases respectively¹³.

The histological grades in our study were G-I, G-II and G-III in 39%, 24% and 36% of cases respectively showing G-I and G-III to be in abundance followed by G-II which is in contrast to the findings of Alonso et al whose study showed an abundance of G-II and G-III tumours i.e. G-I, G-II and G-III were present in 13.7%, 39.2% and 45.1% of cases respectively¹⁴. This may be due to the fact that they actually followed cases of upper urinary tract TCC which later on developed bladder TCC. In such cases, of course, high grade tumours are more common.

The frequency of recurrence of superficial TCC after TURBT on first check cystoscopy in our study was 68.3%. Gupta SK et al conducted a study in United Kingdom and their findings have strongly supported our results with a recurrence rate of 68%¹⁵. Trinchieri A et al have further solidified and supported our study by analyzing high grade superficial TCC of bladder and have confirmed recurrence in 69% of cases under TURBT alone¹⁶. Gudjonsson S et al found frequency of recurrence to be 77%¹⁷.

YANG Tu-bao et al have contradicted our findings in that their study showed a recurrence in 33.3% of cases. In addition their patient population

was younger (52.98±/− 11.28 years)¹⁸. The age factor may be responsible for a low recurrence frequency in YANG's work. In addition, a high population of G-III tumours may be responsible for high recurrence in our study. Our studies were, however, similar in having predominantly pT1 group and male population. Larsson et al have also supported our findings showing a 62% recurrence frequency and that pT1 recur earlier as compared to pTa tumours¹⁹.

Our study showed that pT1 tumours were more common accounting for 73.2% of cases while pTa in 26.8% of cases. In our study the additional findings were that no-recurrence group had 8 pTa tumours and 5 pT1 tumours. In no-recurrence group there were 8 G-I tumours, 3 G-II tumours and 2 G-III tumours. It is important to note here that in no-recurrence group pTa and G-I tumours are in abundance. These are considered to be low risk tumours and usually have low potential for recurrence and progression. Thus their management needs less aggressive therapy. This is supported by Gofrit and colleagues in their study which concluded the low-grade pTa tumours to be minimal risk for the patient after resection and approved conservative management²⁰.

In our study, the group with recurrence had majority of the patients in pT1 variety and G-III variety. pTa was found in 3 cases (n=28) while pT1 in 25 cases (n=28). G-I, G-II and G-III were found in 8, 7 and 13 cases respectively. Our study shows that recurrence is more common in patients with pT1G-III (T1G3) tumours. This evidence is supported by Kulkarni et al by recommending a more aggressive treatment regimen for T1G3 tumours²¹. Shinohara et al also recognized a virulent nature of G-III tumours and confirmed that G-III was more aggressive in recurrence and progression as compared to G-I and G-II tumours²². In order to reduce the recurrence and, especially, progression, these high risk groups should receive intra-vesical BCG²³. In addition, recurrent T1G3 tumours have a more significant risk of recurrence and progression as compared to primary T1G3 despite multifocality of the latter²⁴. Paradoxically, Dangle et al has reported a case of recurrence even in low grade tumour after radical cystectomy²⁵.

We studied superficial TCC of bladder and followed our patients for 3 months. For a more informative research and to draw certain recommendations regarding treatment of the condition, a larger population should be studied for a longer period of time. Similarly, different treatment regimens, including Mitomycin-C, BCG, second look TURBT and radical cystectomy should be compared regarding their efficacy and safety, especially in pT1 and G-III tumours.

CONCLUSION

Superficial TCC of the bladder is a common condition affecting elderly male population. Recurrence is common in T1 G-III tumours. Progression is also noted in certain recurrent tumours.

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CONTRIBUTORS

ANO conceived the idea, planned and wrote the manuscript of the study. BGW supervised the study. NM did the data collection and helped in the write up of the manuscript. All the authors contributed significantly to the research that resulted in the submitted manuscript.