

Pathology outcomes in patients with transurethral bladder tumour resection in a Turkish population: A retrospective analysis

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Summary Objectives: Transurethral bladder tumour resection (TURBT) is the common surgical method used in the diagnosis, staging and treatment of patients with bladder tumour. Most of the rare tumours other than the urothelial carcinomas of the bladder are in advanced stage on diagnosis and necessitate aggressive treatment. In our study, we aimed to the histologic types of bladder cancer and to determine the regional incidence of rare bladder cancer types in our region.

Materials and methods: We retrospectively evaluated 815 patients who underwent TURBT surgery between January 2010 and March 2016 in our clinic with a diagnosis of bladder cancer and at least 1 year follow-up. Patients with tumour histopathological examination including histological tumour type, grade and were reported. Thirty-nine patients with an unclear pathology report (neighboring organ invasion, cautery artifact, etc) and 17 patients whose data could not be accessed were excluded from the study. The patients who had received chemotherapy or radiotherapy due to any type of malignancy (23) were also excluded from the study.

Results: The outcomes of 736 patients operated in our clinics due to bladder tumour were evaluated. The mean age was 65.2 ± 8.4 ; 135 were female and 601 were male. Among them 711 patients with urothelial carcinoma were reported (94.2%). According to TNM classification, stage Ta was observed in 270 patients (37.9%), stage T1 in 297 (41.7%), and stage T2 in 144 (20.3%). Non-urothelial cancers were reported in 25 cases (3.3%).

Conclusion: The incidence of bladder carcinoma varies between regions. The results of our study are similar to those of the western countries. Increased smoking and exposure to environmental carcinogenetic agents may lead to altered incidences and histological types of bladder tumours. Revision of regional tumour records may be useful to develop and evaluate future treatment strategies.

KEY WORDS: Bladder cancer; Transurethral resection; Pathology; Squamous cell; Adenocarcinoma.

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INTRODUCTION

Bladder cancer is the second most common tumour of the genitourinary system (1). Global cancer burden continues to increase due to increased age of population, smoking, western diet and exposure to environmental carcinogene-

sis (2, 3). Transurethral bladder tumour resection (TURBT) is the basic surgical method used in the diagnosis, staging and treatment of bladder cancer (4). Prognosis of urinary bladder tumors is directly connected to histological type and stage of the tumour (5). Urothelial carcinomas (UC) constitute 90-95% of bladder cancers (4). The second most common subtype is the squamous cell carcinoma (SCC) that has an incidence of less than 5% in western countries (6). Adenocarcinomas constitute less than 2% of all bladder cancers (7). Most of these rare histologic subtypes are in advanced stage when they are diagnosed and they require more aggressive treatment options (8). In our study, we aimed to the histologic types of bladder cancer and to determine the regional incidence of rare bladder cancer types in our region.

MATERIALS AND METHODS

We retrospectively evaluated 815 patients who underwent TURBT surgery between January 2010 and March 2016 in our clinic with at least 1 year follow-up. All operations were performed under spinal or general anesthesia. TURBT was performed with bipolar energy system using saline irrigation. All obtained materials were placed in containers with 10% formaldehyde and sent to the pathology laboratory. The materials were buried in paraffin blocks after tissue follow-up procedures. Sections with 5 micron thickness were prepared from paraffin blocks and stained with hematoxylin-eosin. The cases in which tumours were determined in the histopathological examination were reported by specifying tumour histological subtype, grade and pathological tumour stage. Second transurethral resection was performed in cases which had recurrence from clinical and radiologic follow-up, and the highest tumour stage and grade was recorded. Thirty-nine cases with unclear pathology (adjacent organ invasion, cautery artifact etc.), 17 cases the data of which could not be accessed, and 23 cases with chemotherapy/radiotherapy due to any malignancy were excluded from the study.

RESULTS

One hundred and eighty five of the 736 patients (25.1%) included in the study were diagnosed as primary bladder

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cancer and 551 (74.9%) as recurrent after surgery due to bladder tumour. One hundred and thirty five of the patients were female, 601 were male and the mean age was 65.2 ± 8.4 . It was determined that incidence of bladder carcinoma is 4.5 times more common in males than females.

According to our results of pathological examination, UC was reported at a rate of (94.2%). According to TNM classification, it was determined that 270 patients were in Ta stage (38%), 297 patients were in T1 stage (41.8%), and 144 patients were in T2 stage (20.3%) (Table 1).

Twenty five (3.3%) cases were reported as non-urothelial carcinoma. In the pathological evaluation result of these tumours, it was seen that 10 cases were squamous cell carcinoma (1.3%), 9 cases were adenocarcinomas (1.2%), 1 case was neuroendocrine (0.1%), 1 case was small cell carcinoma (0.1%), 2 cases were sarcomatoid carcinoma (0.3%), and 2 cases were bladder leiomyoma (0.3%) (Table 2)..

Table 1.
Clinical stages of UC cases with TNM classification.

Stage and grade	Number of patients	(%)
TaG1	167	(23.5%)
TaG2	87	(12.2%)
TaG3	16	(2.3%)
T1G1	92	(12.9%)
T1G2	79	(11.1%)
T1G3	126	(17.7%)
T2	144	(20.3%)
Total	711	(100%)

Table 2.
Distribution of TURBT pathologic diagnosis (n = 736).

Histopathological diagnosis	Number of patients	(%)
Urothelial carcinomas	711	(94.2)
Squamous cell carcinoma	10	(1.3%)
Adenocarcinoma	9	(1.2%)
Neuroendocrine	1	(0.1%)
Leiomyoma	2	(0.3%)
Small cell carcinoma	1	(0.1%)
Sarcomatoid carcinoma	2	(0.3%)
Total	736	(100%)

DISCUSSION

Currently, the most important prognostic factors in bladder tumours are the pathological stage and the grade of tumour as determined by histopathological examination (5). Presence of muscle invasion in bladder carcinomas is very important in terms of foreseeing the prognosis and determining the treatment approach.

In the study conducted by Horstmann *et al.*, in which 1269 bladder tumours were evaluated, incidence of muscle invasion was reported to be 35.8% (9).

In our study, incidence of muscle invasion was determined as 21.9% (161).

In western countries, primary SCC of bladder is 1.2-

4.5% of all bladder tumours and it is often seen in the seventh decade (10, 11). Radical cystectomy is still the most suitable treatment for bladder SCC. The 5-year survival rate after cystectomy was reported to be 50% and mean period of survival was 5.4 years (12). Almost all squamous cell cancers are already advanced and muscle infiltrative at the time of diagnosis (13). In our study we determined the incidence of SCC as 1.3%.

Adenocarcinomas constitute less than 2% of all bladder cancers (14). Adenocarcinoma diagnosis may be considered as originating primarily from the bladder after excluding metastasis or invasion from neighboring organs. Due to poor prognosis, standard treatment for adenocarcinomas is radical cystectomy and dissection of the pelvic lymph nodes (15). Therefore, early diagnosis is important. In our study we determined the incidence of adenocarcinoma as 1.2%.

The benign tumours that are seen in the bladder are myoma, leiomyoma, rhabdomyoma, fibroma, angioma, osteoma and myxoma. The most common benign mesenchymal bladder tumour is leiomyoma (16). The available evidence about most of these rare tumours originate from small retrospective case series (17). In our study, 2 (0.3%) cases of bladder leiomyoma were detected.

CONCLUSIONS

There are differences in incidence of bladder carcinoma between regions. The results of our study are similar to those of the western countries. The diagnosis of non-urothelial cancers is usually made in the advanced stage and the most applied treatment is radical surgery. Increased smoking and exposure to environmental carcinogenesis may lead to a change in the frequency of histological type of bladder tumours. It may be useful to update regional tumour records to develop and evaluate future treatment strategies.

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