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RESEARCH ARTICLE

Assessment of Two-Year Bladder Biopsy and Cystectomy Outcomes

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Abstract

Objective: To evaluate the outcome of bladder biopsy and resection evaluated in pathology department in 2014-2015.

Material and methods: A total of 78 cases from 2014 to 2015 were included in this study. Reports of the cases were removed from the archive and the age, gender, diagnosis and prognostic parameters of the cases were recorded. The distribution of cases according to age and gender was evaluated.

Results: 65 of the cases were male, 13 of the cases were female. The average age of cases is between 39 and 90. Twenty-one cases were cystitis and squamous metaplasia. The mean age of benign lesions is between 41 and 85. Five cases of dysplastic lesions were observed. The average age is 61.6 and all of them are male. 52 of the cases were malignant. 49 of the cases were male, 3 of the cases were female. 19 cases of non-invasive papillary urothelial carcinoma, 1 case of low malignant potential urothelial neoplasm, 2 of the prostate adenocarcinoma metastasis, 30 of invasive carcinoma. 20 of the cases were pT1, 9 of the cases were pT2, 1 of the case was pT4 and 19 of the cases were pTa. The mean age was 64.5. Invasive tumors are all male. The mean age was 74.6.

Conclusion: In this study, tumors and non-tumoral lesions were seen spreading to a wide range of age in bladder. Benign and malignant lesions were observed in males. Benign lesions were more common in females than malignant lesions in females.

Key words: Bladder, tumors, non-tumoral lesions, distribution.

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Introduction

Urinary system mucosa is covered with urothelial epithelium. Urotelium-derived lesions composed of cell layers of different structures may be malignant pathologies called bladder tumors as well as benign lesions (Sampson et al., 2007).

Most of bladder tumors are urothelial carcinomas (> 90%). Some urothelial or non-urothelial lesions mimic carcinoma and may cause problems in differential diagnosis (Young et al., 2009). It is very important to distinguish these lesions, which are similar to the tumors with their clinical and pathological features, in terms of the treatment and follow-up of the patient.

Although malignant lesions are more researched, benign lesions are frequently encountered in the routine.

Early diagnosis of bladder cancer will increase the chance of successful treatment. However, there is no screening test just for early detection of bladder cancer. For this reason it is usually diagnosed when symptoms occur. This causes a late diagnosis of bladder cancer. However, most cases are diagnosed as non-invasive.

Painless hematuria is an important symptom. It may be the only symptom in the majority of patients with bladder cancer in particular (Fernandez et al., 2008). For this reason, any degree of painless hematuria in adults should be seen as a symptom of malignancy unless otherwise proven (Amling et al., 2001).

The cases in this study were biopsy and resection materials. Resection materials were previously diagnosed with cancer. Biopsies were samples of suspicious areas as a result of cystoscopic examination. Cystitis, dysplasia, noninvasive and invasive tumor diagnoses were present in biopsy or resection examinations of these cases.

In this study, biopsy and resection results of bladder specimens evaluated in pathology department between 2014-2015 were evaluated.

Methods

A total of 78 cases from 2014 to 2015 were included in this study. The distribution of cases according to age and gender was evaluated.

Results

65 (84%) of the cases were male, 13 (16%) of the cases were female. The age range was 39-90 and the averages were 67. Twenty-one cases were cystitis (with subtypes) (figure 1) and squamous metaplasia.

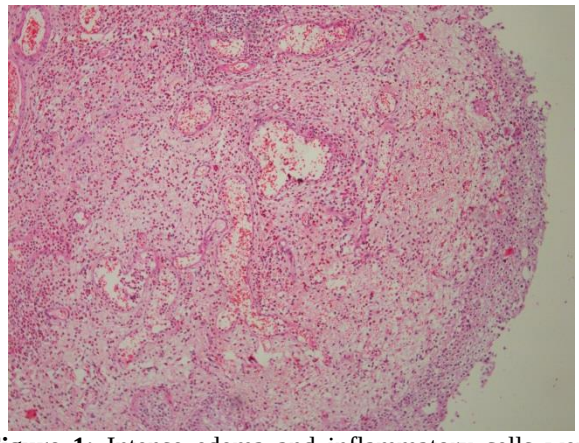

Figure 1: Intense edema and inflammatory cells were observed in the stroma (H&EX100)

The mean age of the benign lesions were 59 (range 41-85) and the gender distribution was as follows: 11 (52 %) of the cases were male and 10 (48 %) of the cases were females. Five cases of dysplastic lesions (not associated with invasive tumor) were observed (figure 2a,b, 3). The average age is 61.6 (54-73) and all of them are male.

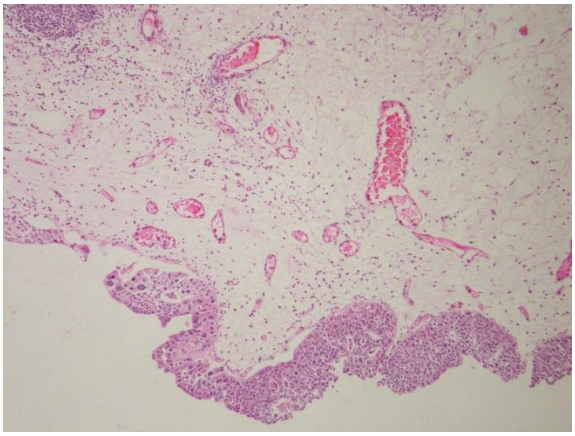

Figure 2a: Disorganisation and increase of nucleus cytoplasm ratio of urothelial epithelium was observed (H&E x 100)

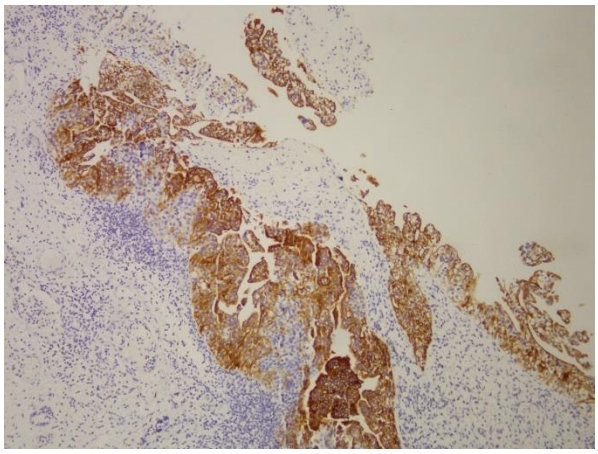

Figure 2b: Positive staining with CK20 was observed in the dysplastic epithelium (CK20X200)

52 (66 %) of the cases were malignant. 49 (94 %) of the cases were male, 3 (6 %) of the cases were female. 19 (37 %) cases of non-invasive papillary urothelial carcinoma, 1(2 %) case of low malignant potential urothelial neoplasm, 2 (4 %) of the prostate adenocarcinoma metastasis, 30 (57 %) of invasive carcinoma (figure 3). 1 (3.3 %) case of invasive tumors was adenocarcinoma, 2 (6.6 %) of the cases were micropapillary, 1 (3.3 %) of the case was nested variant, 3 (10 %) of the cases were squamoid variant, 23 (76.6 %) of the cases were papillary. 20 (66 %) of the cases were pT1, 9 (30 %) of the cases were pT2, 1 (3 %) of the case was pT4 and 19 (63.3 %) of the cases were pTa.

Noninvasive urothelial carcinoma distribution is as follows: 16 (84 %) of the cases were male and 3 (16 %) of the cases were females. The mean age was 64.5 (39-90). Invasive tumors are all male. The mean age was 74.6 (60-89).

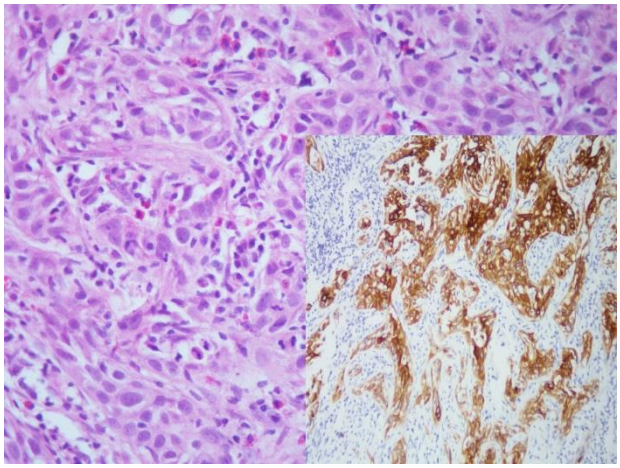

Figure 3: Invasive, atypical cells were observed (H&E x 400), small figure: invasive areas stained positively with Pan CK (Pan CK x 200).

Discussion

Urothelial carcinomas are the 5th most common type of cancer in the world. It is three times more common in men (Eble et al., 2004; Jemal et al., 2005; Spiess et al., 2006).

More than 90% of bladder cancers are transitional cell carcinomas, others are adenocarcinoma and squamous cell carcinoma. At the time of diagnosis, most cases (80%) are superficial tumors (Messing et al., 2007). Mostly, they show recurrence and about 10-15% become muscle invasive (Messing et al., 2007). In this study, 9 (30%) of the cases were pT2 (muscle invasive).

In this study, there were 40 % non-invasive categories. 84 % of these cases were male and 16 % of these cases were female patients.

Bladder cancer can be seen at any age, including childhood. However, it is usually middle-aged and elderly. The mean age of diagnosis of transitional cell carcinoma is 69 in males and 71 in females (Lynch et al., 1995).

In this study, malignant tumors in women were non-invasive and the mean age of these cases was 64.5. Invasive tumors are all male and the mean age of these cases was 74.6.

In addition, the incidence of bladder cancer increases with age. A similar tendency is seen in squamous cell carcinomas. The mortality rate in the elderly is also high. In young people, the prognosis is much better because it is seen as more superficial, low grade tumors; When compared with the grade, the risk of progression of the disease to the young and the elderly is the same (Lynch et al.,1995).

In this study, all patients with invasive urothelial carcinoma were male and the mean age was 74.6 and invasive urothelial carcinoma was not observed in women.

Studies in the etiology and pathogenesis studies have shown that a variety of etiological agents, such as smoking, aromatic amines, play a role in the development of bladder cancer (Johansson et al., 1997; Negri et al., 2001).

Cystitis can be evaluated in two groups as infectious and non-infectious. It is the most common cystitis among bacterial infections in adults. All age groups and both gender are encountered. According to the clinic case, it is divided into acute and chronic, and according to its etiology it is classified as bacterial, radiation, chemical and eosinophilic cystitis (Ucer et al., 2012).

When evaluated as urinary system infections, it is more frequent in females than males and 50% of infections recur. In the majority of these patients there is a history of urinary tract infections in childhood (Nicole et al., 2005).

Adults may develop renal insufficiency as a result of progressive renal damage and recurrent infections in the presence of obstruction (Hooton et al., 2000).

In this study, all benign inflammatory cases were categorized collectively. The cases were 26 % of all cases. It was seen that the ratio of women / men in these cases was similar (10/11). This is because the group is heterogeneous. Due to the small number of cases, they were not separated into subtypes. When we evaluated all the cases, 65 of the cases were male and 13 were female. We think that the reason for male dominance may be related to smoking.

Interventional procedures such as urinary system catheterization may cause reactive changes in the mucous membrane of the urinary system due to irritation caused by pathologies such as stone disease or infections. It may be difficult to distinguish reactive changes from atypia (Yüksel et al., 2014). Cytokeratin (CK) 20 can be a guide in this distinction. In this study, positive staining with CK 20 was observed in areas considered to be dysplasia.

Five cases with dysplasia were present in this study and constituted 6 % of all cases.

Non-keratinized squamous metaplasia is considered a normal variant of urothelial mucosa. It is usually seen in women and in the trigonal region with the bladder neck (Wiener et al., 1979). Keratinized squamous metaplasia can be seen in both men and women, but occurs with chronic irritants such as persistent urinary catheterization or recurrent chronic infections (Guo et al., 2006; Khan et al., 2002). It may be associated with squamous cell carcinoma (Guo et al., 2006; Khan et al., 2002; Ahmad et al., 2008). In this study keratinization was not observed in squamous metaplasia cases.

In this study, 30 of the cases were invasive urothelial carcinoma. 3.3% case of invasive tumors was adenocarcinoma, 6.6% of the cases were micropapillary, 3.3% of the case was nested variant, 10 % of the cases were squamoid variant, 76.6% of the cases were papillary. 66% of the cases were pT1, 30% of the cases were pT2, 3% of the case was pT4. The age-average of invasive tumors in this study was higher than the literature (Lynch et al., 1995).

The incidence of muscularis propria invasion (pT2) in this study was about twice that of the literature (Messing et al., 2007).

Pan CK, immunohistochemical staining in the differential diagnosis of invasive tumor groups, can be used. In this study, invasion areas with Pan CK were also shown.

Interestingly, all of the invasive tumors and displastic lesion were male. This may be related to etiologic factors.

Conclusion

In this study, bladder-related tumors and non-tumoral lesions were seen spreading to a wide range of age. Benign and malignant lesions were observed in males. Benign lesions were more common than malignant lesions in females. The age distribution of invasive carcinoma was found to be higher than that of noninvasive urothelial carcinoma and higher in males than females.

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