

Chapter 4

THE PROBLEMATIC LESIONS OF THE BLADDER: COMPARISON OF REACTIVE UROTHELIUM, UROTHELIAL DYSPLASIA AND CARCINOMA IN SITU

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Introduction:

Urothelium is the epithelium of the genitourinary tractus starting from the ureteropelvic region reaching to the 2/3 proximale of the urethra. The benign and preneoplastic lesions of the urothelium represents as a spectrum of reactive urothelial changes, infections and inflammatory conditions, urothelial dysplasia and carcinoma in situ (CIS) (Reuter et al, 2016). The comparison of these special entities will be discussed in this chapter as this is one of the major histopathological differential diagnoses in surgical pathology practice.

Reactive Urothelium

Reactive urothelial changes can be seen at any age in the anywhere of the genitourinary tractus. These changes are generally asymptomatic or can show symptoms due to bladder irritation. The most common etiological factors are urinary stones, fistulas, infections and instrumentation (Tuna B,2016).

The histological view of this entity has a few but nonspecific details. The thickness of the urothelium is variable (thin / normal / hyperplastic). The nuclei in the epithelium are generally uniform, vesicular with prominent nucleoli and large may be even as large as seen in CIS. There can be numerous mitotic figures (Epstein&Netto, 2014). The degree of these features changes due to the extent of the inflammation. Inflammatory cells such as plasma cells, lymphocytes or even neutrophils can be seen in the lining urothelium. Edema, inflammation and congestion can be found in the lamina propria (Tuna B, 2016).

Immunohistochemical Features

- In the reactive urothelium, umbrella cells are preserved that can be highlighted with cytokeratin(CK) 20.
- CD44 has to be stained among the whole urothelial thickness which shows the reactive nature of the epithelium.
- In contrast to CD44, p53 is negative or can be seen as weak staining especially in the base of the urothelium.

- P53 is generally positive and diffuse intense staining is highly specific when compared to reactive urothelium and dysplasia
- Ki67 staining is increased but not specific as it can be similar in reactive urothelium (McKenney et al, 2001)

Treatment and Prognosis

Intravesical BCG therapy is recommended for the first diagnosis of CIS. The tumor regression is reported as 84% at the first step treatment. Other drugs such as thiotepa, mitomycin C and epirubicin can also be used in intravesical therapy (Tuna B,2016). In case of recurrence radical cystectomy should be taken under consideration depending on the risk of multifocality and the concurrence with invasive tumors. Progression to invasion is variable but invasive carcinoma can develop in approximately half of the patients within 5 years follow up (Epstein&Netto, 2014).

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