Case of the Week

Uropathology: Pseudocarcinomatous Hyperplasia of Urinary Bladder

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History

72 year old male with history of prostate cancer status post radical prostatectomy, Gleason 3 + 4 = 7, pT2, N0, MX, with focal positive margin, who presented with gross hematuria 6 months after surgery. He is undergoing monitoring of PSA trend with a plan for salvage radiotherapy if increase in PSA is noted. Cystoscopy revealed a 2.5 cm right posterolateral wall patch of “flat papillary tumor.” Transurethral resection was performed.
Figure 1: Urothelial mucosa shows stromal edema, congestion, inflammation, and ectatic vessels with fibrin thrombi. (H&E, 4X)

Figure 2: Irregular nests of reticulated epithelial cells extending into the lamina propria (H&E, 10X)
Figure 3. Reticulated and single atypical cells in lamina propria in a background of marked acute and chronic inflammation (H&E, 20X)

Immunohistochemistry:

Figure 4: Pseudoinvasive epithelial cells highlighted by AE1/AE3 (IHC, 10X)
Additional Immunostains:

Non-reactive for CK20, p53 and NKX3.1

Diagnosis

Pseudocarcinomatous urothelial hyperplasia

Discussion

Pseudocarcinomatous urothelial hyperplasia is a benign reactive proliferative lesion that can mimic invasive urothelial carcinoma or the nested variant of urothelial carcinoma. It is most commonly associated with prior radiation therapy but can also be seen in association with chemotherapy, vascular diseases, vascular malformations, prior radical prostatectomy, or indwelling catheters.

Patients often present with hematuria with polypoid lesions and/or mucosal erythema noted on cystoscopy.
Histology shows irregular nests of epithelial cells in the lamina propria of a reactive urothelial mucosa. The proliferative epithelial cells often wrap around blood vessels. The nuclei lack the marked atypia or frequent mitoses of urothelial carcinoma. In comparison to a neoplastic process, a reactive appearing background with inflammation, edema, ulceration, ectatic blood vessels, hemorrhage, fibrin thrombi, hemosiderin deposition, and other radiation-associated changes are helpful in making the diagnosis. Squamous metaplasia can also be seen.

Pseudocarcinomatous urothelial hyperplasia is primarily a morphologic diagnosis and is an important differential diagnosis to consider to avoid misdiagnosis of malignancy.

References


