



DEPARTMENT OF PATHOLOGY

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.

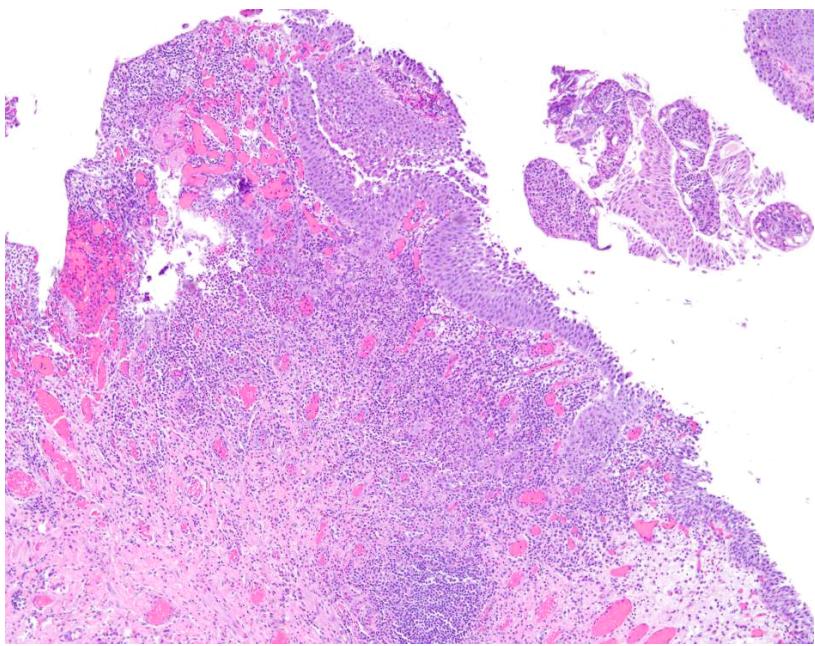


Figure 1: Urothelial mucosa shows stromal edema, congestion, inflammation, and ectatic vessels with fibrin thrombi. (H&E, 4X)

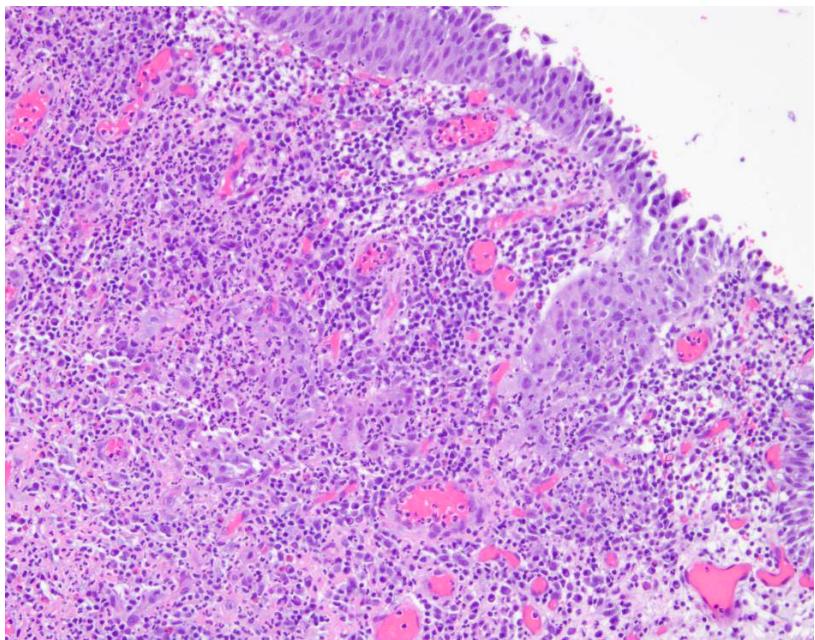


Figure 2: Irregular nests of reticular epithelial cells extending into the lamina propria (H&E, 10X)

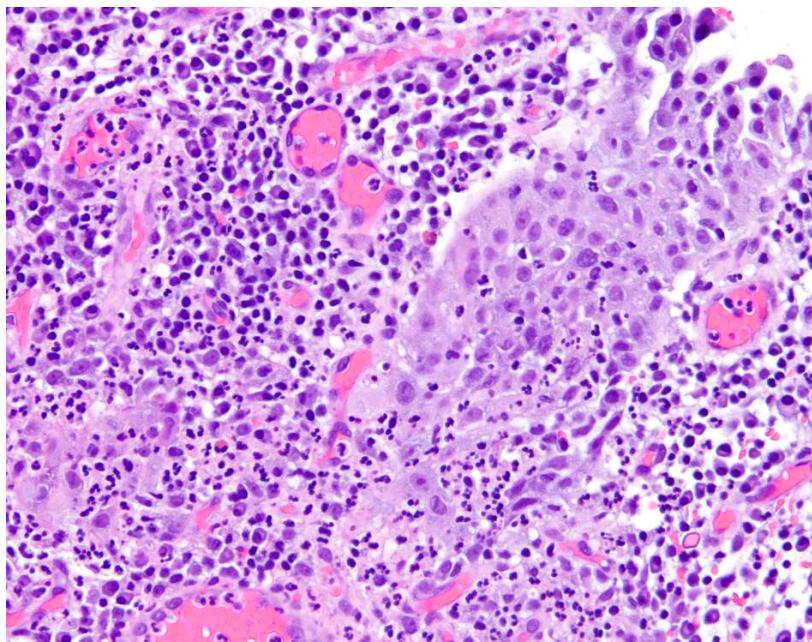


Figure 3. Reticulated and single atypical cells in lamina propria in a background of marked acute and chronic inflammation (H&E, 20X)

Immunohistochemistry:

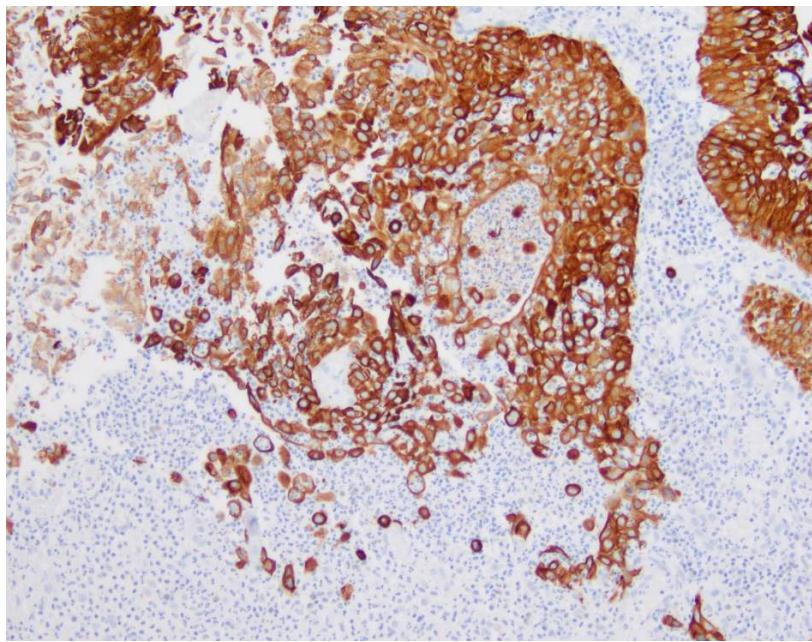


Figure 4: Pseudoinvasive epithelial cells highlighted by AE1/AE3 (IHC, 10X)

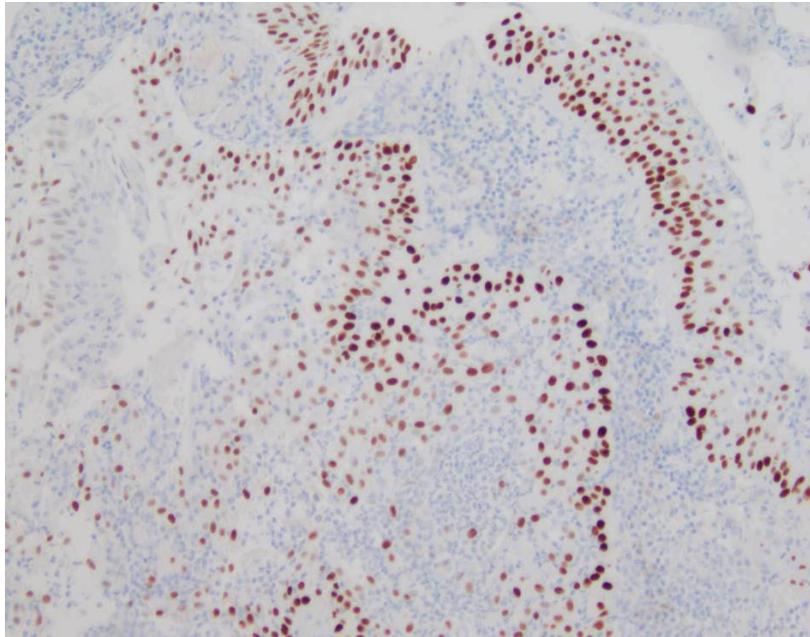


Figure 5: Pseudo-invasive epithelial cells highlighted by p63 (IHC, 20X)

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 carcinoma¹. 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 catheters².

Patients often present with hematuria with polypoid lesions and/or mucosal erythema noted on cystoscopy¹.

Histology shows irregular nests of epithelial cells in the lamina propria of a reactive urothelial mucosa. The proliferative epithelial cells often wrap around blood vessels³. 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 seen⁴.

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

References

- 1: Wu A. Pseudocarcinomatous hyperplasia of the urinary bladder. *Arch Pathol Lab Med.* 2014 Oct; 138(10):1268-71.
- 2: Lane Z, Epstein JI. Pseudocarcinomatous epithelial hyperplasia in the bladder unassociated with prior irradiation or chemotherapy. *Am J Surg Pathol.* 2008 Jan; 32(1):92-7.
- 3: Hameed O, Humphrey PA. Pseudoneoplastic mimics of prostate and bladder carcinomas. *Arch Pathol Lab Med.* 2010 Mar; 134(3):427-43.
- 4: Samaratunga H, Delahunt B, Yaxley J, Egevad L. Tumour-like lesions of the urinary bladder. *Pathology.* 2021 Jan; 53(1):44-55.