

A Case of Metastatic Prostate Cancer to the Urethra That Resolved After Androgen Deprivation Therapy



Darren J. Bryk, MD, Kenneth W. Angermeier, MD, and Eric A. Klein, MD

An 83 year-old male with Gleason score 4+3 prostatic adenocarcinoma status post brachytherapy developed obstructive voiding symptoms 9 years after brachytherapy. Prostate-specific antigen was 0.67. Cystoscopy noted multiple papillary urethral tumors concerning for primary urethral carcinoma. Immunophenotype of biopsies supported diagnosis of Gleason score 4+4 prostatic adenocarcinoma. Androgen deprivation therapy was started. Cystoscopy performed 4 years later, for microhematuria workup, noted complete resolution of the urethral tumors. We present a patient with little serum Prostate-specific antigen change with urethral prostatic adenocarcinoma metastasis that resolved after androgen deprivation therapy. UROLOGY 129: e4–e5, 2019. © 2019 Elsevier Inc.

An 83-year-old male with Gleason score 4+3 prostatic adenocarcinoma in 5 of 12 biopsy cores with perineural invasion status post brachytherapy presented to clinic 9 years after treatment complaining of obstructive voiding symptoms. Prostate-specific antigen (PSA) was 0.67. Cystoscopy noted multiple papillary tumors from the penile to the membranous urethra. Urethral tumor biopsies were performed in the operating room (Fig. 1). Prostatic urethra and bladder were unremarkable.

Histologic sections showed exophytic papillary neoplasm. Immunostains for NKX-3.1 showed diffuse nuclear

immunoreactivity in the neoplastic cells, while GATA-3 was negative. All biopsies had Gleason score 4+4 prostatic adenocarcinoma. Restaging imaging noted pulmonary nodules and bone lesions, concerning for metastasis, without lymphadenopathy. Androgen deprivation therapy with Leuprolide and Bicalutamide was subsequently started. PSA became undetectable. Cystoscopy performed 4 years later, for microhematuria workup, noted complete resolution of all urethral tumors (Fig. 2). Pulmonary and bone metastasis remained stable on follow-up imaging.

Primary and metastatic urethral tumors are extremely rare¹⁻⁴; urethral metastasis typically portends a poor prognosis.^{4,5} Our initial concern, given patient presentation, was urethral urothelial cell carcinoma, however, the immunophenotype supported the diagnosis of prostatic adenocarcinoma.^{6,7} We have described urethral prostatic



Figure 1. Diagnostic cystoscopy with papillary tumor in penile urethra.

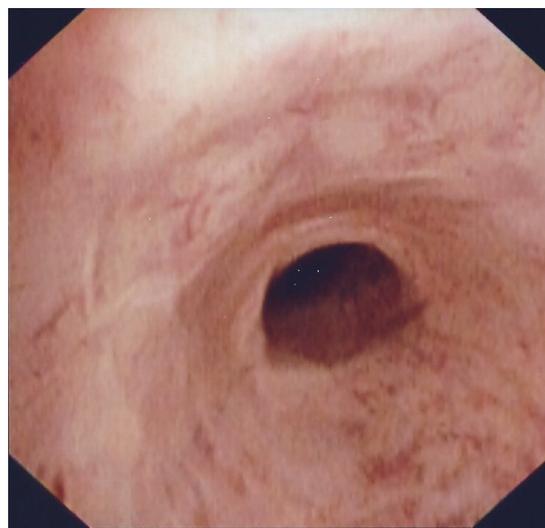


Figure 2. Cystoscopy 4 years after initiation of androgen deprivation therapy with absence of tumors in penile urethra.

Financial Disclosure: The authors have no conflicts of interest or financial disclosures.

From the Department of Urology, Glickman Urological and Kidney Institute, Cleveland Clinic, Cleveland, OH

Address correspondence to: Darren J. Bryk, M.D., Department of Urology, Glickman Urological and Kidney Institute, Cleveland Clinic, 9500 Euclid Ave, Q10, Cleveland, OH 44195. E-mail: brykd@ccf.org

Submitted: January 3, 2019, accepted (with revisions): March 25, 2019

adenocarcinoma metastasis with little serum PSA production that completely resolved after Androgen deprivation therapy.

References

1. Bubendorf L, Schopfer A, Wagner U, et al. Metastatic patterns of prostate cancer: an autopsy study of 1,589 patients. *Hum Pathol*. 2000;31:578–583.
2. Gomez Gomez E, Carrasco Aznar JC, Moreno Rodriguez Mdel M, et al. Palliative surgery for rare cases of anterior urethral metastasis in prostate cancer. *Case Rep Urol*. 2014;2014 584957.
3. Green JM, Tang WW, Jensen BW, et al. Isolated recurrence of ductal prostate cancer to anterior urethra. *Urology*. 2006;68:428. e13-5.
4. Zardawi I, Chong P. Metastatic prostate cancer to the urethra masquerading as urothelial carcinoma. *Urol Case Rep*. 2016;7:33–36.
5. Hung CF, Lee CH, Hung SW, et al. Invasive adenocarcinoma of the prostate with urethral tumor. *J Chin Med Assoc*. 2010;73:101–103.
6. Oh WJ, Chung AM, Kim JS, et al. Differential immunohistochemical profiles for distinguishing prostate carcinoma and urothelial carcinoma. *J Pathol Transl Med*. 2016;50:345–354.
7. Chuang AY, DeMarzo AM, Veltri RW, et al. Immunohistochemical differentiation of high-grade prostate carcinoma from urothelial carcinoma. *Am J Surg Pathol*. 2007;31:1246–1255.