

Teaching Case

Patient autonomy and shared decision making in the management of urethral cancer



Nicholas Serrano MD^a, Michael Chang MD^{a, b}, C. Leland Rogers MD^{a, b},
Matthew Orton MD^c, Rosemarie Mannino MD^{d, e}, Mayer Grob MD^{f, g},
Rakesh Agarwal MD^h, Drew Moghanaki MD, MPH^{a, b, *}

^aDepartment of Radiation Oncology, Virginia Commonwealth University, Massey Cancer Center, Richmond, Virginia

^bRadiation Oncology Service, Hunter Holmes McGuire VA Medical Center, Richmond, Virginia

^cDepartment of Radiation Oncology, Indiana University, IU Health Arnett Cancer Center, Lafayette, Indiana

^dHematology Oncology Section, Medical Service, Hunter Holmes McGuire VA Medical Center, Richmond, Virginia

^eDivision of Hematology, Oncology and Palliative Care, Virginia Commonwealth University, Massey Cancer Center, Richmond, Virginia

^fDepartment of Urology, Virginia Commonwealth University, Richmond, Virginia

^gDepartment of Urology, Hunter Holmes McGuire VA Medical Center, Richmond, Virginia

^hDepartment of Radiology, Hunter Holmes McGuire VA Medical Center, Richmond, Virginia

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Case presentation and workup

A 52-year-old black male presented with a 1-month history of painless hematuria. Cystoscopy revealed a large pendulous mass within the mid-urethra, just proximal to the penoscrotal junction. Biopsies confirmed a grade 2 transitional cell carcinoma of the bulbomembranous urethra with squamous cell differentiation; pathologic review demonstrated superficial invasion into the lamina propria but not the muscularis propria. A retrograde urethrogram demonstrated a filling defect in the membranous portion of the urethra. A pelvic magnetic resonance imaging (MRI) examination revealed a solitary enhancing mass distal to the prostate that measured 4.5 cm × 2.5 cm × 2.9 cm without evidence of lymphadenopathy (Figs 1A and 2A). There was radiographic involvement of the corpora

spongiosum with invasion of the right corpus cavernosum through the tunica albuginea and probable involvement of the left corpus cavernosum with extension through Buck's fascia and Dartos tunica. A chest computed tomography examination was unremarkable. A fluorodeoxyglucose positron emission tomography scan was not performed. He was determined to have clinical stage T3N0M0.¹

Exploring treatment options

Radical penectomy was recommended by 2 independent urologists. The patient refused and inquired about organ preservation. He was referred for a psychiatric evaluation that documented he had been told he may have only 1 year to live with a nonsurgical approach. After a formal assessment that did not identify any mental illness or barriers to his decisional capacity, he was referred to radiation and medical oncology. After a thorough multidisciplinary evaluation in the urology clinic, he elected to proceed with induction chemotherapy followed by concurrent chemoradiation therapy, reserving a radical penectomy in the event of progression during the induction phase. Informed consent was obtained.

Conflicts of interest: None.

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* Corresponding author. Hunter Holmes McGuire VA Medical Center, 1201 Broad Rock Blvd, Richmond, VA 23249.

E-mail address: dmoghanaki@vcuhealth.org (D. Moghanaki).

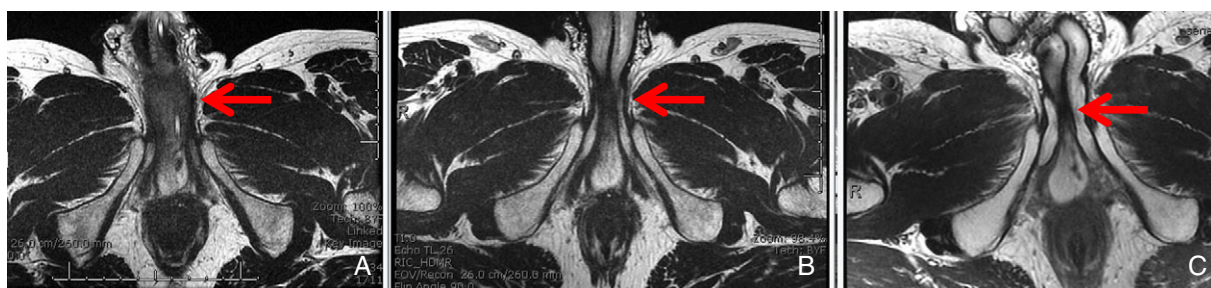


Figure 1 Axial T2 magnetic resonance imaging panel comparing tumor size (A) before treatment, (B) after induction chemotherapy, and (C) after concurrent chemoradiation therapy. The red arrow identifies the malignant lesion. Note the displacement of the Foley catheter in (A).

Induction chemotherapy followed by concurrent chemoradiation therapy

The patient received 2 cycles of cisplatin (70 mg/m² intravenously on day 1) and gemcitabine (1000 mg/m² intravenously over 30–60 minutes on days 1, 8, and 15), with the second cycle beginning on day 28. Subsequently, a restaging pelvic MRI demonstrated 97% volume reduction of the enhancing tumor to 1.5 cm × 0.9 cm × 0.7 cm (Figs 1B and 2B). He then received a course of intensity modulated radiation therapy with concurrent weekly cisplatin (30 mg/m²). The intensity modulated radiation therapy plan consisted of 14 fields that used a mix of 6- and 18-V photons to cover a target volume that encompassed the prechemotherapy areas of tumor enhancement, a 2-cm length of urethra both proximal and distal to this mass, and elective pelvic lymph nodes in the low-lying pelvic, inguinal, and femoral stations. These initial target volumes received 1.8-Gy daily fractions to 45 Gy over 5 weeks. A field reduction then targeted the prechemotherapy areas of tumor enhancement, with a 2-cm margin, and received an additional 14.4 Gy to a subtotal dose of 59.4 Gy. A second field reduction targeted only the postchemotherapy tumor volume for an additional 7.2 Gy, with a final cumulative dose of 66.6 Gy (Fig 3).

Posttreatment follow-up

The patient did not have any unexpected or unusual side effects, although 8 months after treatment, he required an

outpatient dilation of a urethral stricture. He did relatively well until 30 months later, when he underwent a urethrotomy for a recurrent benign stricture. Since then, he has successfully performed twice weekly self-catheterization with the intent of decreasing the risk of subsequent stricture.

With regard to erectile function, he initially developed impotence soon after treatment. However, he subsequently had a return of spontaneous tumescence within 9 months of completing treatment.

Tumor surveillance to date has included routine urine cytology with cystoscopies and pelvic MRIs every 3 to 6 months (Figs 1C and 2C). After 4 years of close follow-up, he remains without evidence of malignancy, is sexually active without any erectile aids, and is without decisional regret.

Discussion

Patients with nonmetastatic urethral cancer face a difficult dilemma when surgery is recommended.^{2,3} For those who consent to a radical penectomy, many report high levels of dissatisfaction given their disfigured appearance, need for urinary diversion, and interference with daily activities.⁴ Worst of all, treatment failure rates can be as high as 75%.^{5,6} Meanwhile, chemoradiation therapy provides a reasonable alternative with an opportunity for cosmetic and functional organ preservation (Table 1).¹¹ Reports demonstrate an 83% complete response rate with definitive chemoradiation therapy and 5-year overall and disease-specific survival rates of 60% and 83%, respectively.^{8,10} However, because nonsurgical



Figure 2 Sagittal T2 magnetic resonance imaging panel comparing tumor size (A) before treatment, (B) after induction chemotherapy, and (C) after concurrent chemoradiation therapy. The red arrow identifies the malignant lesion.

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