Contemporary Management of Primary Distal Urethral Cancer

Samer L. Traboulsi, MD[a], Johannes Alfred Witjes, MD, PhD[b], Wassim Kassouf, MD, CM, FRCS(C)[a,*]

KEYWORDS

• Urethra • Urethral neoplasms • Therapeutics • Therapy

KEY POINTS

- Stage and anatomic location of the primary urethral tumor guide the choice of treatment modality and are the main determinants of prognosis and survival.
- Surgical options range from local excision to transurethral resection to partial urethrectomy/penectomy to total penectomy in men or excision of the urethra, vulva, and vaginal wall in women.
- For distal urethral tumors, surgical options are more appropriate for men whereas radiation therapy is a reasonable option in women.
- Routine inguinal or ilioinguinal lymphadenectomy for higher-stage tumors should be considered; however, there are few data derived from the treatment of primary urethral cancer to support it.
- Multimodal therapy is usually reserved for more advanced stages in combination with surgery to improve survival.

INTRODUCTION

Epidemiology

Primary urethral carcinomas (PUCs) are rare and account for less than 1% of genitourinary cancers.[1,2] Most of the data rely on studies with small numbers of patients or case reports. PUCs arise from the urethral epithelium or from periurethral glands.[3,4] The incidence of PUCs is known to be 3 to 4 times more common in women than in men. Recent data from the Surveillance, Epidemiology, and End Results (SEER) database, however, reported higher incidence in men, with an annual age-adjusted incidence rate of PUCs of 4.3 per million in men and 1.5 per million in women.[5]

Etiology

Chronic inflammation, strictures, and sexually transmitted diseases are implicated in PUC. Columnar and mucinous adenocarcinoma may arise from glandular metaplasia and cribriform adenocarcinoma has its origins from the prostate.[6] Squamous cell carcinoma (SCC) is associated with human papillomavirus (HPV) infection in both genders. HPV 16 or HPV 18 is associated in 60% of urethral carcinoma in women[7] and HPV 16 is associated with 30% of pendulous urethra SCC in men.[8,9] More than half the patients diagnosed with PUC have a history of stricture, and 25% have a history of sexually transmitted disease.[2]

Anatomic Histopathology

In men, the anterior urethra includes the penile and the bulbous urethra. The posterior urethra includes the prostatic and the membranous urethra. In women, the anterior urethra constitutes

The authors declare no commercial or financial conflicts of interest.

[a] Department of Urology, McGill University Health Centre, 1001 Decarie Boulevard, Montreal, Quebec H4A3J1, Canada; [b] Department of Urology, Radboud University Nijmegen Medical Centre, Geert Grooteplein South 10 (659), PO Box 9101, 6500 HB Nijmegen, The Netherlands

* Corresponding author. McGill University Health Centre, Glen Site D02.7210, 1001 Decarie Boulevard, Montreal, Quebec H4A 3J1, Canada.

E-mail address: wassim.kassouf@muhc.mcgill.ca

Urol Clin N Am 43 (2016) 493–503
http://dx.doi.org/10.1016/j.ucl.2016.06.010

the distal one-third whereas the proximal two-thirds constitute the posterior urethra.[10] The distal urethra in men is the penile and glandular urethra whereas in women the distal urethra constitutes the distal one-third of the urethra.[11]

In women, lymphatics from the posterior urethra drain to the external and internal iliac and obturator lymph node chains. The anterior urethra drains to the superficial and then to the deep inguinal lymph nodes. In men, the lymphatics from the anterior urethra drain into the superficial and deep inguinal lymph nodes (and occasionally into the external iliac lymph nodes). The posterior urethra drains directly into one or any combination of the presacral, obturator, and external iliac lymphatic channels.[12,13]

Different histologic types for PUC follow an anatomic distribution due to the presence of different epithelial histology depending on location (Fig. 1). SCC is believed the most common type, representing more than 60% of PUCs in men and women. According to contemporary data extracted from the SEER, however, the distribution may be different. Among women, urothelial carcinoma (UC), SCC, and adenocarcinoma each represented approximately 30% of PUCs.[5] In men, UC represented 78%, SCC 12% and adenocarcinoma 5% of cases.[14]

PATIENT EVALUATION OVERVIEW

Clinical Presentation

PUCs can present with hematuria or bloody urethral discharge. These are the presenting symptoms in up to 62% of the cases. Symptoms of locally advanced disease include a palpable urethral mass in 52%, bladder outlet obstruction in 48%, pelvic pain in 33%, urethrocutaneous fistula in 10%, and abscess formation in 5%.[15] When they become clinically evident, urethral cancers are already locally advanced in 45% to 57%[15,16]

Clinical Evaluation

For local staging, clinical examination should include palpation of the external genitalia and digital rectal examination in men to assess for mass/induration. In women, palpation of the urethra should be done. Speculum visualization to inspect the vaginal wall and vulva is also advised, in addition to bimanual examination. Palpation of the inguinal lymph nodes should be routinely performed.[17,18] In contrast to penile cancer, the presence of palpable lymph nodes in urethral cancer is almost always metastasis.[8,19–21]

Urine Cytology

The sensitivity of urine cytology in detecting PUC varies according to gender and histologic type. In a study by Toujier and Dalbagni,[22] the sensitivity

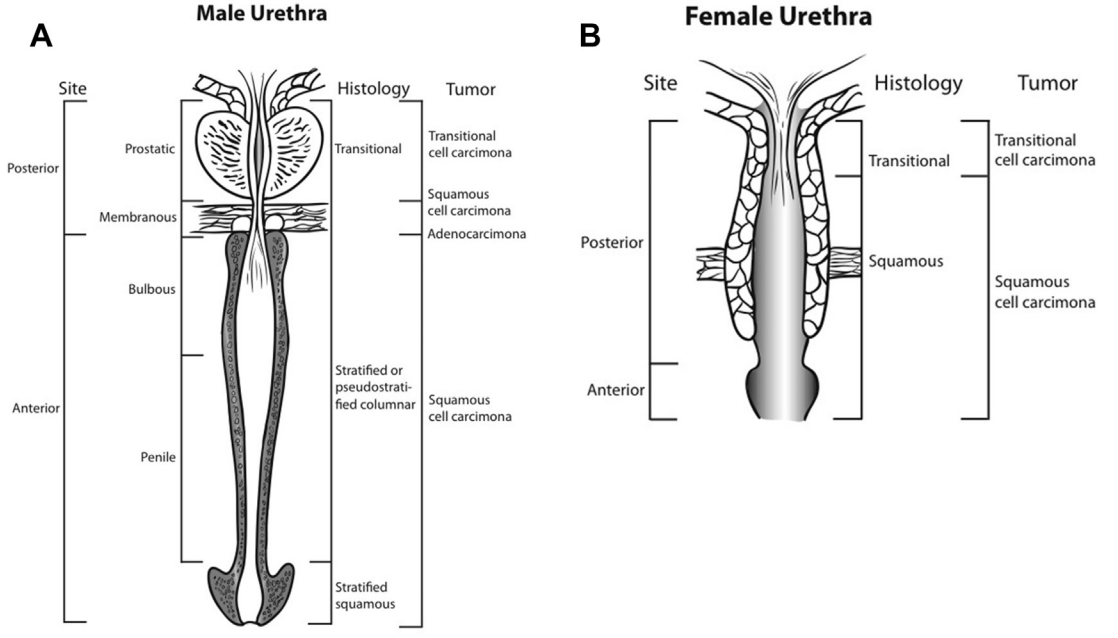

Fig. 1. Anatomic distribution of histologic types and corresponding histopathology in male (*A*) and female (*B*) urethra. (*Adapted from* Sharp DS, Angermeier KW. Tumors of the urethra [Fig. 38.1 and 38.9]. In: Wein AJ, Kavoussi LR, Partin AW, editors. Campbell-Walsh urology. 11th edition. Philadelphia: Elsevier; 2016. p. 880, 886; with permission.)