Preservation of Erectile Function and Urinary Continence in Squamous Cell Carcinoma of the Bulbomembranous Urethra

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INTRODUCTION

Carcinoma of the male urethra is an uncommon neoplasm accounting for less than 1% of all malignancies,[1] and generally occurs in the 5th decade of life. It is a very serious disease, often with a late diagnosis and lymph node involvement, which usually manifests as urethral stenosis and difficulty during urination.[2-4] Dysuria is the most common symptom, sometimes associated with pain during urination, later with hematuria.[5] The epithelial neoplasms in the male urethra are usually squamous cell carcinoma (SCC), transitional cell carcinoma (TCC), and adenocarcinoma in order of prevalence.[2,3,6,7]

Management of the urethral carcinoma is still controversial. The surgical approach to the urethral cancer depends largely on the location and extent of the tumor; and grade and histopathologic type are of less importance. Radical cystoprostatectomy, pelvic lymphadenectomy, and total penectomy are the recommended modalities. However, poor survival figures have been recorded for all forms of treatment.

CASE REPORT

A 39-year-old sexually active man presented with recurrent and progressive episodes of obstructive urinary symptoms in September 2006. Traumatic postoperative catheterization 2 years earlier was considered the possible cause of urethral stenosis, which was diagnosed by rigid cystoscopy. Four subsequent cystoscopic examinations and urethral dilatation and two internal urethrotomies

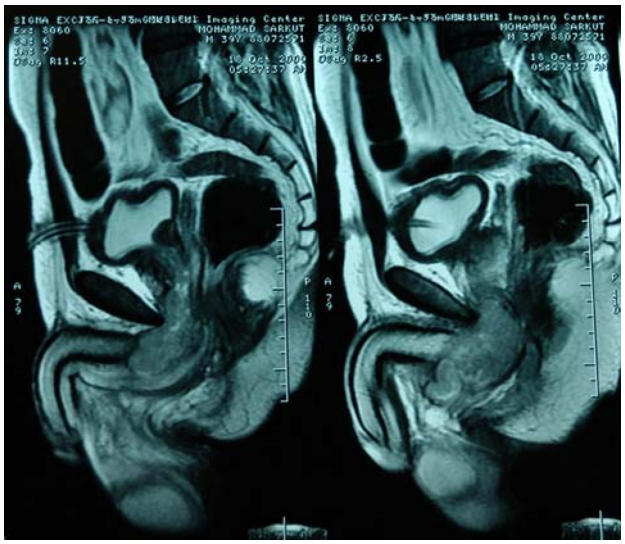

Figure 1. Magnetic resonance imaging shows the bulbomembranous involvement.

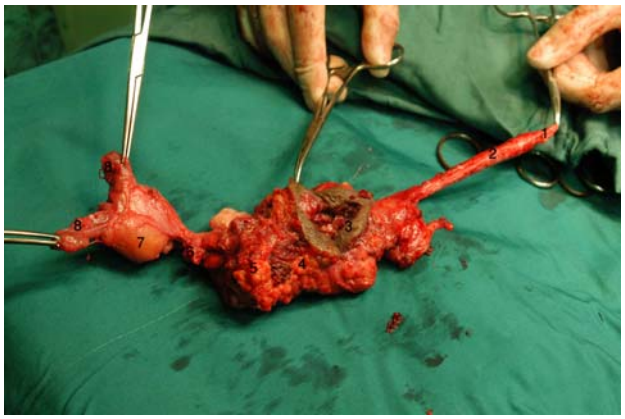

Figure 2. Removed enbloc specimen (1. Mea; 2. Penile urethra + Corpus spongiosum; 3. Cutaneous fistula; 4. Bulbomembranous tumor; 5. Left corpus cavernosum crura; 6. Membranous urethra; 7. Prostate; and 8. Seminal vesicles).

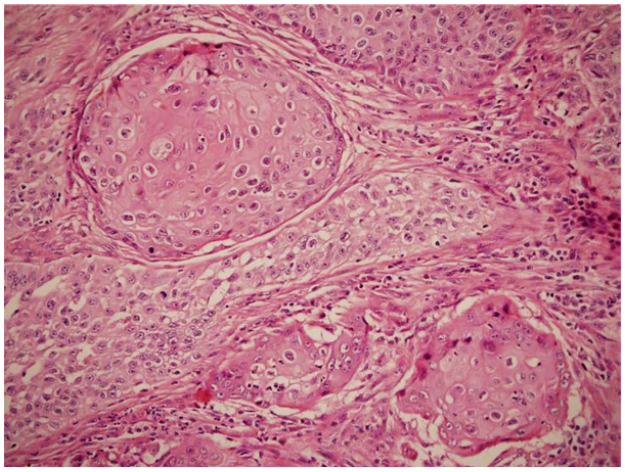

Figure 3. Squamous cell carcinoma of the urethra. Cellular polymorphism and atypia (×200 Hematoxylin and Eosin stain).

were required over the next 2 years. Following a painful perineal swelling and urinary retention in March 2009, a perineal drainage was performed and suprapubic catheter was inserted, which caused a non-healing perineal fistula with continuous purulent discharge.

He had no history of hematuria, sexually transmitted disease, urinary stone disease, fever, bone pain, bowel habit changes, or rectorrhagia, but losing appetite, 8 kg weight loss, and recurrent urinary tract infections.

Systemic physical examinations and digital rectal exam were normal; however, the only positive finding was a 7 × 7 cm infiltrated painless perineal mass and fistula with purulent discharge without any regional and systemic lymphadenopathy. An ill-defined isoechoic perineal lesion measuring 7 × 8 cm, no obvious collection, with normal corpora cavernosa and spongiosa were confirmed with ultrasonography. Retrograde urethrography showed irregular bulbomembranous urethra with extravasation through perineal fistula.

Magnetic resonance imaging confirmed that a heterogenic mass measuring 8 × 7 cm has infiltrated to the corpus spongiosum and possibly left the corpus cavernosum without lymph nodes involvement (Figure 1) while chest X-ray, computed tomography (CT) scan, and bone scintigraphy revealed no evidence of distant metastasis or regional organ involvement.

Up and down cystourethroscopy revealed multiple irregular bulbomembranous mucosal lesions protruded to the prostatic urethra covering with necrotic debris, normal penile and prostatic urethra, and a normal tumor-free bladder with normal ureteral orifices. Considering patient's age, health status, expectations, and motivation, a modified radical surgery regular follow-up plan was considered.

TECHNIQUE

The patient was diagnosed with urethral cancer (cT2 or T3N0M0) and as it was discussed with him, a modified radical surgery was performed with total corpus spongiourethrectomy, radical nerve-sparing prostatectomy, pelvic lymphadenectomy, and appendicovesicostomy (Mitrofanoff procedure) as a continent urinary diversion (Figure 2).

A definitive histopathologic diagnosis of well-differentiated SCC of the urethra with corpus spongiosum and left crus of corpora cavernosa invasion and no vascular, perineural, and prostatic invasion was made (Figure 3). All the resected pel-

vic lymph nodes were negative for malignancy and it was suggested as having T3N0M0 disease. The patient subsequently received 40 GY/ 20 fractions pelvic radiotherapy and 6 cycles of cisplatin-based chemotherapy.

RESULTS

He is back to his normal life, having his sex life using papaverin injection or vacuumed device. Although he had a six-month perineal pain post operation, which was controlled by medication, all the metastatic lab tests and paraclinic studies, including whole body bone scan and thoracoabdominopelvic CT scan confirm no evidence of detectable metastasis, local invasion, or lymphadenopathy at his regular follow-ups (at 6, 12, 24, and 36 months post operation).

DISCUSSION

Treatment of urethral carcinoma is controversial due to rarity of the disease and the lack of uniformity and detailed comparative studies in the literature. Surgery plays a basic role in the management of urethral cancers, and various approaches have been employed. The standard primary mode of treatment for urethral cancer is surgical excision. The location of the tumor within the urethra together with the clinical stage defines the extent of surgery.

In summary, stage, grade, and site of the disease are predictors of survival. It may be possible that with proper selection, the bladder, prostate, and penile-preserving surgery could be considered in the management of male urethral cancers.

CONFLICT OF INTEREST

None declared.

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