

# Penile Preservation for Male Urethral Cancer

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## Abstract

Tumors of the male urethra are rare, comprising <1% of urologic malignancies. This is a report of a 44-year-old man presented with a 4-month history of gross initial hematuria and dysuria. After examining the patient, we found a firm mass extending 1 cm within the proximal bulbar urethra and a pathologic report of moderately differentiated squamous cell carcinoma. He underwent excision of the involved urethra followed by end-to-end bulbar urethroplasty. External beam radiation was performed at the dose of 6000 Rad, in 33 courses. The patient was followed by surveillance protocol and, no evidence of urethral or bladder tumor was found in the 2-year follow-up with bi-annual cystoscopic examination.

**Key words:** Squamous cell carcinoma; Radiotherapy; Urethral neoplasm

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## Introduction

Tumors of the male urethra are rare, comprising <1% of urologic malignancies. The outcome of treatment modalities for urethral cancer has not changed during years, suggesting that there have been little advances in the management of this cancer [1-3]. Classification of the urethral carcinoma is performed according to stage, location and histology of the tumor. Squamous cell carcinomas are the most common pathological type (78%) and 6% are adenocarcinomas [4]. Distal tumors (glanular or penile urethra) tend to present at a lower stage and have a better prognosis, which is an important prognostic indicator. The extent of tumor at diagnosis is a poor prognostic factor especially when the nodal metastasis is present [1,2, 5]. Urethral carcinoma has historically been managed by partial or radical penectomy for distal tumors or total penectomy with cystoprostatectomy for proximal tumors [6]. Recently, penile preservation surgery was performed in selected carcinomas of the distal male urethra [4, 6-8].

## Case Report

The case was a 44-year-old man presented with a 4 month history of gross initial hematuria and dysuria. No palpable lesion was observed in penis or the inguinal area in physical examination. Cystourethroscopy revealed a firm mass extending 1 cm within the proximal bulbar urethra. Endoscopic cold cup biopsies of the nodular mass showed a moderately differentiated squamous cell carcinoma.

Magnetic resonance imaging of the patient did not show any cavernosal involvement.

Excision of the involved urethra followed by end-to-end bulbar urethroplasty was done for the patient. Examination of urethra at the operating room did not show any grossly periurethral involvement. Frozen-section biopsies of the excised urethra were sent for pathologic examination and the margins were tumor-free. The procedure was completed as the manner of standard posterior urethroplasty. The patient was held in complete bed rest position post-operatively for one week. The final pathology report showed a moderately differentiated squamous cell carcinoma of the urethra with negative tumoral margins. Retrograde urethrogram did not show urethral extravasation, so Foley catheter was discontinued three weeks after the surgery.

External beam radiation was performed for the patient at the dose of 6000 Rad, in 33 courses. Postoperatively, the patient reported complete urinary continence without irritative or obstructive urinary symptoms and reported normal erections. He did not complain about bloody urethral discharge, pain or weight loss. After intravenous contrast injection, multi-slice abdominal pelvic CT scan was done every 6 months; and no suspicious area of advanced disease was observed 2 years after the operation. There was not any evidence of urethral or bladder tumor in the 2-year follow-up with bi-annual cystoscopic examination.

## Discussion

Primary urethral tumor is an uncommon urologic cancer; however, it presents a treatment dilemma for physicians [2, 5]. Due to small number of male urethral cancer cases reported over a long period with use of different modalities of treatment and significant physical and psychosexual complications, there is not a consensus on the treatment of these cancers [2]. Adenocarcinoma about 6 percent of primary urethral cancers. The most common site of urethral adenocarcinoma is in the bulbomembranous urethra [9-11]. If the extraurethral adenocarcinomas involving the urethra is excluded, then the histogenesis of this tumor would not be clear [9, 12].

It has been postulated that these tumors may arise from heterotopic glands in and around the urethral mucosa or metaplastic urethral epithelium [13] or malignant degeneration of persistent glandular elements that are embryonal rests or by neoplastic degeneration of goblet cells found in the urethral epithelium [11]. Urethral carcinomas in the proximal urethra present at a higher stage than distal tumors and have poor prognosis due to delay in diagnosis [6, 14].

The treatment options for urethral cancers include transurethral resection of the lesion, open resection with end-to-end anastomosis [15], partial penile amputation and radical penectomy [14], radiotherapy has been reserved mainly for patients who have failed local control or refused surgical treatment [4]. Transurethral ablation or excision of tumor using laser are well documented penile-preserving surgical techniques. The recurrent rate is low for preinvasive lesions; however, failure rate is very high for invasive tumors [16-17]. Laser treatment is best reserved for treating superficial lesions [18]. Alternative organ-sparing treatment, especially in bulbomembranous urethra, is segmental excision of the involved area with end-to-end anastomosis. In our study, frozen-section biopsy during surgery can help the surgeon to resect the tumor completely.

Yachia and Turani reported a case of adenocarcinoma of the bulbar urethra in which the patient refused radical procedures, so partial urethrectomy was performed while sparing the penis [11]. Our treatment modality for the patient with proximal urethral carcinoma included segmental urethrectomy accompanied by local radiotherapy. The outcome was satisfactory and the patient did not have any complains about urinary symptoms or erectile dysfunction.

## Conclusion

Total penectomy with cystoprostatectomy is the standard management of proximal urethral carcinoma; however, penile preservation surgery was preferred in some cases. We treated our patient with excision of the involved urethra followed by end-to-end bulbar urethroplasty and external beam radiation and found no evidence of urethral or bladder tumor in the 2-year follow-up.

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## Conflict of Interest

The authors have no conflict of interest in this article.

## Authors' Contribution

HJ was the reconstructive urologic surgeon who operated the patient and designed the study and reviewed the literatures. RA contributed to the history taking and patient follow up process.

JB contributed to the patient follow up process. LB contributed in patient history taking and writing-up process. MMM reviewed the literatures and wrote the paper.

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