

Tips for Office-Based Transurethral Biopsy and Fulguration as a Treatment of Tiny Bladder Tumors*

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ABSTRACT

Among the patients who underwent outpatient cystoscopy as a follow up of bladder cancer, quite a few patients are observed tiny papillary lesions suspicious for tumor recurrence. Transurethral biopsy and/or resection under spinal or general anesthesia in a hospitalized setting are the usual procedures for this kind of patients, even though these procedures are simple and brief. We tried transurethral biopsy and fulguration as a treatment for very small bladder tumor in an outpatient setting and here describe tips for these procedures. Olympus CYF-VA flexible cystoscope, a 3 Fr. diathermy probe, monopolar electrosurgical unit were used. No additional anesthetics except for 10 ml of 2% Xylocaine gel applied to (male patient's) urethra as an initial flexible cystoscopic procedure, was required for tumor treatment. Distilled water was used as an irrigation fluid. Experienced tips of the procedures to avoid tumor recurrence are as follows: tumor should be one location, size of the tumor should be less than 5 mm, bladder should be washed several times after the fulguration with hundreds ml of distilled water. We conclude that outpatient biopsy and fulguration for tiny bladder tumor is effective and less invasive procedure as a treatment of bladder cancer patients.

Keywords: Transurethral Surgery; Bladder Cancer; Office Urology; Fulguration; Biopsy

1. Introduction

Office-based cystoscopic examination is a usual established method as an initial and postoperative surveillance of bladder tumor [1]. During the follow up period, small, low grade and superficial bladder tumor recurs in quite a few patients [2]. Although experience and efficacy of office-based fulguration for low grade papillary lesions has been reported previously, this procedure does not performed routinely in the clinical practice, presumably because there is no precise explanation on actual methodology and safety [3-5]. However, considering increasing comorbidities, use of anti-coagulation medication, economic restriction and so on, ambulatory treatment for these lesions should be beneficial both for patients and surgeons [6]. Here, we present the tips of ambulatory biopsy and fulguration treatment for tiny bladder papillary lesions with some improvements after experiences of failure cases.

2. Patients and Methods

Fourteen patients, 19 procedures were enrolled in this report. The patient profiles are listed in the **Table 1**. All the patients had the history of transurethral resection (TUR) or nephroureterectomy surgery under spinal or general anesthesia previously, and followed with repeat surveillance flexible cystoscopy in an outpatient setting. Safety to use diathermia for these patients was confirmed by previous surgery, and informed consent on the treatment of ambulatory procedures was made by patient's signature. This report does not violate ethical standards of the Declaration of Helsinki and its revisions. No additional anesthetics except for 10 ml of 2% Xylocaine gel applied to (male patient's) urethra as an initial flexible cystoscopic procedure, was required for tumor treatment. Olympus (Tokyo, Japan) CYF-VA flexible cystoscope and Versa Pro unit, Takei (Tokyo Japan) monopolar electrosurgical unit B-1, Olympus flexible biopsy forceps and 3 Fr. Takei Bugbee ureteroscope electrode were used. Normal saline was used for observation, and distilled water was used for treatment as irrigation fluid (**Figure 1**).

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Table 1. Patient profiles and results.

Pt	Age	Previous TUR	Tumor	Pathoogy	Result	Comment
1	71	6 m	Dome 1 trigonum 3	UC G1	3 m relapse	Treated with re-TUR
	72	1 y	Dome 1	UC G1	4 y free	
2	82	Primary	Trigonum 3	UC G1	4 m relapse	Treated with office-based re-TUF
	82	4 m	Near left orifice 1	UC G1	4 y free	
3	77	3 m	Trigonum 1	UC G2	3 m relapse	Treated with office-based re-TUF
	78	3 m	Bladder neck 1		9 m relapse	Treated with re-TUR
	79	7 m	Trigonum 1		10 m relapse	Treated with office-based re-TUF
	80	10 m	Trigonum 1		6 m free	Severe Alzheimer disease
4	60	8 y	Dome 1cm × 2	UC G2	5 m relapse	HD patient, Treated with re-TUR
5	83	6 m	Left orifice 1	UC G2	2 m relapse	Other location treated with re-TUR
6	80	6 m	Left wall 1	UC G1	5 m relapse	Other location treated with re-TUR
7	62	3 m	Left wall 1		3 m relapse	Other location treated with re-TUR
8	76	3 y	Right wall 1	UC G1	4 y free	
9	71	1 y	Bladder neck 1	UC G1 > G2	4y free	
10	66	2 y	Anterior wall 1		2 y free	
11	81	2 y	Trigonum 1		2 y free	
12	68	6 m	Bladder neck 1	UC G2	7 m free	
13	71	1 y	Anterior wall 1		6 m free	
14	69	16 m	Bladder neck 1	UC G1	2.5 y free	Post nephroureterectomy

m: month, y: year, re-TUR: Transurethral resection of bladder tumor after admission, HD: hemodialysis, UC: urothelial carcinoma.

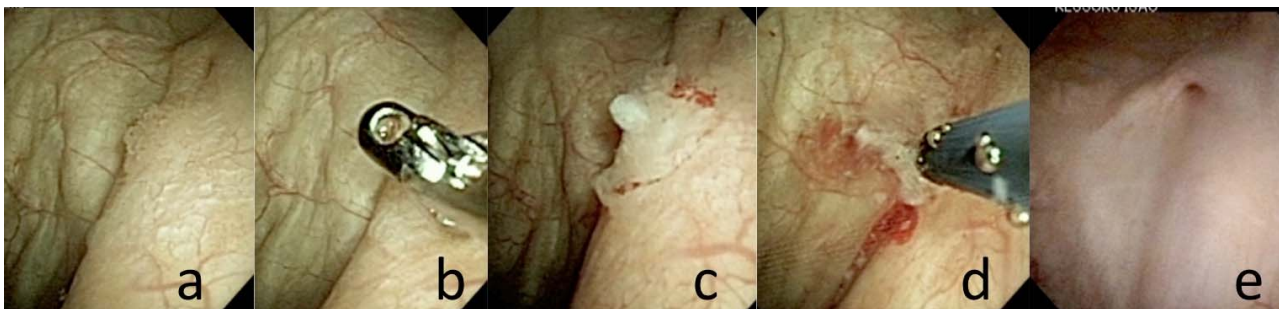


Figure 1. Examples of biopsy and TUF (#2 patient, second procedure of biopsy and TUF, (a), (b), (c), (d). Cystoscopy after 12 months showed no recurrence, (e)).

3. Experiences

The first patient (Pt #1) had recurrent small tumor around the fulgurated tiny tumors after 3 months, presumably due to multiplicity of tumors and insufficient irrigation after treatment. Second patient, had maintenance hemodialysis (Pt #4), also recurred probably because the tumor was too big (about 1 cm × 2) to treat in this setting. So in treating the following case, we indicated this procedure for a sole papillary lesion. In addition, after the fulguration, wash the bladder enough for several times until all fulgurated white debris were completely cleaned out, because living tumor cells might still exist in the debris. As shown in the **Table 1**, although some patients recurred at other location, many of the treated patients showed tumor free for more than 6 months in the treated area. Patient #3 suffered severe Alzheimer disease, and

though tumor recurred several times, office-based treatment was beneficial for both patient’s family and surgeon as much.

4. Conclusion and Tips

Office-based biopsy and fulguration for tiny bladder tumor is thought to be effective and less invasive procedure as a treatment of bladder cancer patients. Tips of the successful transurethral biopsy and fulguration for tiny bladder tumor are as follows: 1) sole lesion; 2) less than 5 mm in size; 3) wash bladder enough after the procedure with distilled water.

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