Original Article

The Result of Re-Transurethral Resection of Bladder Tumor in Eight Years

Tanwa Tammabut MD[1], Satit Siriboonrid MD[1]

[1] Division of Urology, Department of Surgery, Phramongkutklao Hospital, Bangkok, Thailand

Objective: To analyses the residual tumor and staging after transurethral resection of bladder tumor (TURBT). Moreover, to analyze the recurrence and free survival patients who received treatment by re-transurethral resection of bladder tumor (RE-TURBT) and their complications.

Materials and Methods: A retrospective study from 35 patients operated by RE-TURBT between January 2010 and December 2018 was done. The patients in the present study were qualified by 1) incomplete resection from the first TURBT, 2) the detrusor muscle did not appear in specimen for high grade transition cell carcinoma, 3) any T1 lesion, or 4) large or multifocal lesion. The analysis of the residual tumor included staging, recurrence-free survival, and complication after RE-TURBT from the pathology report and follow up method.

Results: Thirty-five patients were included in this study. The average age of the patients operated by RE-TURBT was 69 years old, with a range of 44 to 87 years old. The presenting symptom was hematuria with gross hematuria in 28 patients (80%) and microhematuria in seven patients (20%). Twenty-five patients (71.4%) were male. The relative factor was smoking in 23 patients (65%) and coexisting with irritative voiding symptom in 11 patients (31.4%). The present study found that there was incomplete resection in 11 patients (31.4%), with under-staging in five patients and incomplete resection in six patients. There were 14 months recurrence-free survival and minor complication in RE-TURBT patients.

Conclusion: One third of the patients operated by RE-TURBT had unreasonable staging, especially in Ta high grade staging. This could change the treatment in two patients (5.7%), which found minor complication from RE-TURBT, and improve recurrence-free survival.

Keywords: Transurethral resection of bladder tumor (TURBT); Re Transurethral resection of bladder tumor (Re-TURBT)

Received 28 September 2020 | Revised 27 July 2021 | Accepted 30 July 2021

J Med Assoc Thai 2021;104(9):1411-4

Website: http://www.jmatonline.com

Bladder cancer is the sixth most common disease that occurs in male[1-3]. The global incidence rate in this disease is 23:100,000 persons per year[4-6] and in Thailand, it was found to occur in 6.7:100,000 persons per year[7,8].

Almost 70% to 75% of bladder cancer patients are at the non–muscle invasive stage. To diagnose the disease and do the staging, transurethral resection of the bladder tumor and abdominal cavity CT scan[9-14] are used. Moreover, the urine cytology can use for screening and follow-up bladder cancer.

While the transurethral resection method can completely resect the bladder mass[15-18], the recurrence rate is still high, at more than 50% in 12 months[19,20]. Often, because of incomplete resection and under-staging, the patient received inadequate adjuvant treatment. Therefore, the objectives of the present study were to study if the first TURBT was able to eliminate the cancer, and the factors that affected the incomplete TURBT, recurrence-free survival, and complication from RE-TURBT.

Correspondence to:

Siriboonrid S.

Division of Urology, Department of Surgery, Phramongkutklao Hospital, Bangkok 10400, Thailand

Phone: +66-84-1467183

Email: tonsatit@gmail.com

How to cite this article:

Tammabut T, Siriboonrid S. The Result of Re-Transurethral Resection of Bladder Tumor in Eight Years. J Med Assoc Thai 2021;104:1411-4.

doi.org/10.35755/jmedassocthai.2021.09.11363

Objective

To analyze the residual tumor and the staging after transurethral resection of the bladder tumor. Moreover, to analyze the recurrence-free survival patients who received the treatment by RE-TURBT and the complication.

Materials and Methods

The present study was a retrospective descriptive study of the Phramongkutklao Hospital's patients treated by RE-TURBT between January 2010 and December 2018. The inclusion criteria were incomplete resection from the first TURBT, the detrusor muscle did not appear in the specimen for high grade transition cell carcinoma, any T1 lesion, and large or multifocal lesion. All the patients had to RE-TURBT within two to six weeks by bipolar

electrocautery with one or two pieces of tumor base, and tissue diagnosis was performed by the urology-pathologist. The incidence of residual tumor and the staging after the transurethral resection of bladder tumor was analyzed. Moreover, the data about the recurrence-free survival patients who received the treatment by RE-TURBT and the complications was also analyzed.

Statistical analysis

The data was re-evaluated for correctness and recorded in data files, then the demographic data of the patients was statistically analyzed as range, mean, median, and frequency in percentage. Analysis was performed using STATA/MP 13 (StataCorp LP, College Station, TX, USA).

Results

The first biopsy of the 35 patients were related to the transitional cell carcinoma in Ta and T1 staging. All patients were male (35 patients), aged between 44 and 89 years, with a mean age of 69 years. The risk factors of bladder cancer were smoker in 65%, exposed to chemical in 9%, normally NSAID used in 31%, and recurrent infection of urinary tract in 3% (Table 1). The pathological results from the first TURBT showed carcinoma in situ (CIS) in 3%, Ta low grade in 9%, Ta high grade in 57%, and T1 low in 25% (Table 2). The pathological conclusion results from RE-TURBT (n=35) were under-staging in 14%, incomplete resection in 17%, and complete resection in 69% (Table 3), CIS (n=1) 100% incomplete resection, Ta low grade (n=3) incomplete resection in 33.3%, under-staging in 33.3%, and complete resection in 33.3%, Ta high grade (n=20) incomplete resection in 5%, Ta high grade change to T1 high grade in 15%, and complete resection in 80%, T1 low grade (n=2) incomplete resection in 50% and complete resection in 50%, T1 high grade (n=9) incomplete resection in 22.2%, under-staging in 11.1%, and complete resection in 66%. Five patients' pathological result was changed with four patients changed from surveillance to intravesical chemotherapy and one patient changed from intravesical chemotherapy to radical cystectomy (Table 4). Furthermore, three patients had minor complication from RE-TURBT, which was urinary tract infection (Table 5).

Table 1. Demographic data and risk factor for hematuria (n=35)

	Percent
Male	75%
Smoking	65%
Exposed to chemical (rubber, benzene)	9%
Chronic analgesic used	9%
History of gross hematuria	31%
Urologic disorder	34%
Irritative voiding symptom	31%
Pelvic irritation	6%
Chronic urinary tract infection	3%

Table 2. Pathologic report for TURBT (1st) (n=35)

Staging	n (%)
CIS	1 (3)
Ta low grade	3 (9)
Ta High grade	20 (57)
T1 low grade	2 (6)
T1 High grade	9 (25)

CIS=carcinoma in situ

Table 3. Conclusion pathologic report for RE-TURBT (2nd) (n=35)

Staging for TURBT (1st)	Understaging	Incompleted	Completed
CIS	0	1	0
Ta low grade	1	1	1
Ta High grade	3	1	16
T1 low grade	0	1	1
T1 high grade	1	2	6
Summary; n (%)	5 (14)	6 (17)	24 (69)

TURBT=transurethral resection of bladder tumor

Table 4. Pathologic report analysis (n=35)

Pathologic analysis	n (%)
Incompleted resection	11 (31.4)
Understaging	5 (14.3)
Change treatment (surveillance to intravesical immuno-therapy)	4 (11.4)
Change treatment (intravesical immunotherapy to radical cystectomy)	1 (2.8)

Discussion

Many of the previous studies found that most of the bladder cancer was non-muscle invasive stage and the diagnosis and the main treatment use TURBT with or without intravesical therapy. However, TURBT causes the under-staging of diagnoses in about 26% to 83% of the cases and a high recurrence of the disease within 12 months. Therefore, the objective of

Table 5. Complication (n=35)

Pathologic analysis	n (%)
Urinary tract infection	3 (8.5)
Gross hematuria	0 (0.0)
Bladder perforation	0 (0.0)
septicemia)	0 (0.0)
Death	0 (0.0)

the present study was to analyze the residual tumor after TURBT. The results show that most pathological finding are T1 and Ta High grade, especially T1 High grade, which is the highest possibility for inadequate treatment by TURBT.

For this reason, RE-TURBT is the only method to detect under-staging result. In the present study, the authors found 31% of the patients were under-staging in the first TURBT. However, after RE-TURBT, the authors found accurate stage and provided appropriate treatment that could affect the long-term outcome. The present study showed that RE-TURBT can increase recurrence-free survival from 12 to 14 month. Furthermore, there is only minor complication from this method.

However, the present study had limitation, because the RE-TURBT is a new method in Thailand, therefore, there is little Thai reference, and the sample size is small.

Conclusion

The RE-TURBT should be the treatment of choice for patient who was incomplete resected from the first TURBT with the detrusor muscle not appearing in the specimen for high grade transition cell carcinoma, any T1 lesion, large or multifocal lesion. This is because the RE-TURBT can detect accurate staging of bladder cancer, therefore, patients will receive appropriate treatment and good long-term outcome.

What is already known on this topic?

The analysis of the residual tumor and the staging after the transurethral resection of bladder tumor.

What this study adds?

One third of the bladder tumor patients in Thailand that were operated by RE-TURBT have reasonable staging and treatment.

Acknowledgement

The authors would like to extend appreciation to his advisor, Col. Asst. Prof. Satit Siriboonrid, MD, for his guidance and time in making this research a possibility.

Secondly, the authors would also like to express his sincerest gratitude to his family who has always been the most important support in any of his achievements.

Conflicts of interest

The authors declare no conflict of interest.

References

1. Siegel RL, Miller KD, Jemal A. Cancer statistics, 2017. CA Cancer J Clin 2017;67:7-30.
2. The European Society of Pathology (ESP) The International Academy of Pathology (IAP). Abstracts: 32nd Congress of the ESP and XXXIII International Congress of the IAP. Virchows Arch 2020;477 Suppl 1:1-390.
3. Arbyn M, Weiderpass E, Bruni L, de Sanjosé S, Saraiya M, Ferlay J, et al. Estimates of incidence and mortality of cervical cancer in 2018: a worldwide analysis. Lancet Glob Health 2020;8:e191-203.
4. Kaufman ND, Chasombat S, Tanomsingh S, Rajataramya B, Potempa K. Public health in Thailand: emerging focus on non-communicable diseases. Int J Health Plann Manage 2011;26:e197-212.
5. Sung H, Ferlay J, Siegel RL, Laversanne M, Soerjomataram I, Jemal A, et al. Global cancer statistics 2020: GLOBOCAN estimates of incidence and mortality worldwide for 36 cancers in 185 countries. CA Cancer J Clin 2021;71:209-49.
6. Jantip J, Tanthanuch M, Kanngurn S, Karnchanawanichkul W, Pripatnanont C, Sangkhathat S, et al. Mutations of fibroblast growth factor receptor 3 gene (FGFR3) in transitional cell carcinoma of urinary bladder in Thai patients [Revision-2a]. J Med Assoc Thai 2013;96:976-83.
7. Cumberbatch MGK, Jubber I, Black PC, Esperto F, Figueroa JD, Kamat AM, et al. Epidemiology of bladder cancer: A systematic review and contemporary update of risk factors in 2018. Eur Urol 2018;74:784-95.
8. Compérat E, Larré S, Roupret M, Neuzillet Y, Pignot G, Quintens H, et al. Clinicopathological characteristics of urothelial bladder cancer in patients less than 40 years old. Virchows Arch 2015;466:589-94.
9. Hall MC, Chang SS, Dalbagni G, Pruthi RS, Seigne JD, Skinner EC, et al. Guideline for the management of nonmuscle invasive bladder cancer (stages Ta, T1, and Tis): 2007 update. J Urol 2007;178:2314-30.
10. Ramirez D, Gupta A, Canter D, Harrow B, Dobbs RW, Kucherov V, et al. Microscopic haematuria at time of diagnosis is associated with lower disease stage in patients with newly diagnosed bladder cancer. BJU Int 2016;117:783-6.

11. Choyke PL. Radiologic evaluation of hematuria: guidelines from the American College of Radiology's appropriateness criteria. Am Fam Physician 2008;78:347-52.
12. van der Aa MN, Steyerberg EW, Bangma C, van Rhijn BW, Zwarthoff EC, van der Kwast TH. Cystoscopy revisited as the gold standard for detecting bladder cancer recurrence: diagnostic review bias in the randomized, prospective CEFUB trial. J Urol 2010;183:76-80.
13. Krajewski W, Kościelska-Kasprzak K, Rymaszewska J, Zdrojowy R. How different cystoscopy methods influence patient sexual satisfaction, anxiety, and depression levels: a randomized prospective trial. Qual Life Res 2017;26:625-34.
14. Nolte-Ernsting C, Cowan N. Understanding multislice CT urography techniques: Many roads lead to Rome. Eur Radiol 2006;16:2670-86.
15. Goessl C, Knispel HH, Miller K, Klän R. Is routine excretory urography necessary at first diagnosis of bladder cancer? J Urol 1997;157:480-1.
16. Têtu B. Diagnosis of urothelial carcinoma from urine. Mod Pathol 2009;22 Suppl 2:S53-9.
17. Kramer MW, Altieri V, Hurle R, Lusuardi L, Merseburger AS, Rassweiler J, et al. Current evidence of transurethral en-bloc resection of nonmuscle invasive bladder cancer. Eur Urol Focus 2017;3:567-76.
18. Chang SS. Re: The impact of re-transurethral resection on clinical outcomes in a large multicentre cohort of patients with t1 high-grade/grade 3 bladder cancer treated with bacille Calmette-Guérin. J Urol 2018;199:340-2.
19. Naselli A, Hurle R, Paparella S, Buffi NM, Lughezzani G, Lista G, et al. Role of restaging transurethral resection for T1 non-muscle invasive bladder cancer: A systematic review and meta-analysis. Eur Urol Focus 2018;4:558-67.
20. Baltacı S, Bozlu M, Yıldırım A, Gökçe M, Tinay İ, Aslan G, et al. Significance of the interval between first and second transurethral resection on recurrence and progression rates in patients with high-risk non-muscle-invasive bladder cancer treated with maintenance intravesical Bacillus Calmette-Guérin. BJU Int 2015;116:721-6.