

# Second-look TURBT: evaluation of anatomopatological and oncologic results in a single center

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**Summary.** *Introduction:* T1 bladder cancer is associated with a high risk of recurrence and progression; concomitant carcinoma in situ and/or multifocality are negative prognostic factors. Persistent disease after resection of T1 tumours has been observed in 33-55% of patients, and after resection of High-grade (HG) Ta tumour in 41,4%. It has been demonstrated that a second TURB can increase recurrence-free survival and it can make a restaging of the cancer. *Patients and methods:* From January 2011 to December 2016, 87 patients with superficial bladder tumor (Ta-T1), undergoing TURB and routine repeat TURB (Re-TURB) 4-6 weeks after the initial resection, were included in the study. Re-TURB was applied to the scar of the first resection and other suspicious lesions in the bladder. After the second-look, we studied the follow-up of each patient. *Results:* Specimens obtained during the second TURBT showed no tumor in 47 (54,02%) patients; 40 (45,98%) patients had residual cancer: 34 of them had cancer of the same stage, 6 patients of pT1 had a lower stage, and 3 had a higher stage. 5 patient underwent radical cistectomy immediatly after re-TURBT. During the first year of follow up, 15 patients had a recurrent bladder cancer; 2 of them underwent radical cistectomy. *Conclusions:* T1 bladder cancer is an high risk tumor, so that second-look TURBT is a valuable procedure for accurate staging of nonmuscle-invasive bladder cancer and it can guarantee a better eradication of the neoplasm. ([www.actabiomedica.it](http://www.actabiomedica.it))

**Key words:** second-look TURBT, Re-TURBT, bladder cancer, NMIBC, cistectomy

## Introduction

Stage Ta and T1 bladder tumors are defined as non-muscle-invasive bladder cancers: they are confined to the mucosa or invade the lamina propria respectively. These low stage and grade tumors are expected to be non metastatic neoplasm according to the Tumour, Node, Metastasis (TNM) classification system. In spite of that, high-grade (HG) Ta and T1 tumors are associated with high risk of recurrence and progression, especially when present concomitant carcinoma in situ (CIS) and/or are multifocal (1). The invasion of bladder detrusor changes the prognosis

and requires a radical treatment often rappresented by radical cistectomy.

Guidelines on non-muscle-invasive bladder cancer of the *European Association of Urology* (EAU) state that it is possible to find residual disease after the first bladder resection (TURBT) in 33-55% of patients with T1 tumours and in 41,4% of patients with TaHG (2-3). Based on these arguments, a second TURBT is recommended in selected cases (4):

- after incomplete initial TURBT;
- if there is no muscle in the specimen after initial resection, with the exception of low-grade (LG) Ta tumours and primary CIS;

- in all T1 tumours;
- in all HG tumours, except primary CIS.

The aim of our study is proving the necessity of the second-look TURBT according to the data collected in the department of Urology of G. Salvini Hospital.

## Patients and methods

We recruited all patients who underwent a TURBT from January 2011 to December 2016 in G. Salvini Hospital of Garbagnate Milanese. We obtained 966 TURBT, executed in 705 patients. 87 of them underwent a re-TURBT (Table 1). For each patient, we analyzed the pathological report, with particular attention to morphology (localization, number and diameter of tumours, concurrent CIS, presence of muscle in the specimen, prior recurrence rate), stage T and grade G of the tumours. We calculated the risk of recurrence and progression according to the EORTC tables (*European Organization for Research and Treatment of Cancer*) (5).

According to the EAU guidelines we performed the re-TURBT at 6-8 weeks from the first bladder resection (6). When the pathological result of the second resection presented residual disease we planned, based on the stage and grade obtained, a conservative approach with bladder instillation in some cases (BCG or Mitomycin C) or a surgical approach with radical cystectomy in other patients.

Our follow-up after the re-TURBT consists of: cystoscopy and urinary cytology at 3 months. If negative, cystoscopy and cytology every 3 months for a period of 2 years, and every 6 months thereafter until 5 years, and then yearly, according to EAU guidelines.

**Table 1.** Population characteristics

Patients	
Number of TURBT	966
Male	552
Female	153
Age (mean $\pm$ DS)	74 $\pm$ 8,87
Range	58 - 88
Number of second TURBT	87

## Results

### First-look results

We selected 87 patients who underwent a re-TURBT (70 men and 17 women). In Tables 2, 3, and 4 are reported pathological results after the first bladder resection. Table 5 shows the pathological indications to the second resection.

### Second-look results

Specimens obtained during the second TURBT showed no tumor in 47 (54,02%) patients; 40 (45,98%) patients had residual cancer: 34 of them in the same stage, 6 patients with previous pT1 presented a lower stage (pTa), and 3 had a higher stage (pT2).

50% of patients presenting no detrusor in the first specimen had residual tumor at the re-TURBT; in Table 6 are reported the pathological results.

**Table 2.** Patients at first TURBT

Anatomopatological features	
T1LG	28 (32,18%)
T1HG	59 (67,82%)
No bladder muscle	16 (18,3%)

**Table 3.** T1LG tumours with detrusor in the specimen

T1G1 tumours	
Number of tumours	Single = 9 2-7 = 11 $\geq$ 8 = 0
Tumour diameter	< 3 cm = 11 $\geq$ 3 cm = 9 (all single)
Concurrent CIS	0

**Table 4.** T1G3 tumours with detrusor int the specimen

T1G3 tumours	
Number of tumours	Single = 28 2-7 = 23 $\geq$ 8 = 0
Tumour diameter	< 3 cm = 45 $\geq$ 3cm = 6
Concurrent CIS	0

**Table 5.** Indications to re-TURBT

Indications to second-look TURBT:	
T1G1 (multiple or notable diameter)	20 (22,98%)
T1G3	51 (58,63%)
No muscle	16 (18,39%) → 8 T1LG → 8 T1HG

**Table 6.** Pathological results of the re-TURBT

At second-look TURBT:	
No cancer	47 (54,02%)
TaLG	6 (6,89%)
T1LG	14 (16,09%)
T1HG	17 (19,54%)
T2HG	3 (3,46%)

### Oncological results

Immediately after re-TURBT, 5 patients, who have at first-look a T1HG, underwent radical cystectomy: histological report show T4 bladder cancers. These patients still have a good quality of life and good health condition.

We found 15 tumor relapses at a mean follow-up time of 261 days. In two cases the tumor resulted pT2 after the first resection, confirmed at the re-TURBT; definitive pathological result after radical cystectomy showed a pT4 tumor. The follow-up of these patients was studied at 6 and 12 months after radical cystectomy with thoracic and abdominal TC, urinary cytology and blood tests of kidney function. None of them had a relapse of the pathology.

### Discussion

The second-look transurethral resection of the bladder (re-TURBT) represents a fundamental step in the treatment of papillary non-muscle invasive bladder cancer (NMIBC) and it is recommended by all guidelines. However, not all the literature agrees on its staging value and its ability to improve oncological outcomes of patients, and it is a surgical procedure not free of risks and complications and with an important

impact on patients' quality of life, waiting lists and healthcare costs.

Guidelines on non-muscle-invasive bladder cancer of the *European Association of Urology* (EAU) state that it is possible to find residual disease after the first bladder resection (TURBT) in 33-55% of patients with T1 tumors and in 41,4% of patients with TaHG. Medical literature gives us some examples: Dr. Aydin demonstrates that in the 40% of 100 patients, recruited from January 2003 to December 2008, is possible to find a neoplasm at second-look (7).

Our results are comparable to the data reported in literature regarding second-look TURBT.

The evidence of residual tumor in 45.98% of second resections underlines the importance of this procedure in order to obtain a complete eradication of the cancer despite his biological and economical costs. The high percentage (9,19%) of pT1 tumors undergoing radical cystectomy gives a strong role to the re-TURBT in characterizing and treating an high-risk neoplasm.

We can state that re-TURBT is an important procedure in restaging: 6 patients with pT1 had a lower stage at second-look, and 3 had a higher stage. The efficacy of second TURBT in restaging is limited to the distinction between non-muscle-invasive and muscle-invasive tumors.

Based on our results, second-look TURBT maximizes staging accuracy, allows to clear residual cancer and yields prognostic advantages allowing key information to identify possible candidates for immediate radical cystectomy. The use of re-TURBT let us to promptly treat that half of patients with a residual tumor, improving their oncological outcomes. An early resection of residual cancer reduce the risk of progression of the pathology and in the long period can reduce the number radical approach. Moreover, a prompt radical cystectomy can reduce the risk of metastasis.

T1HG tumors are associated with high risk of recurrence and progression. The 15 tumor relapses, that we found, were arisen in patients who had at first resection a T1HG neoplasm. Relapses were staged or as T1 or as T2. The high number of new bladder tumor after second-look TURBT (17,24% of patients at the first year of follow-up) prove that these superficial neoplasms are aggressive, and underline the importance

of an accurate follow-up so that the urologist can remove relapses in order to prevent a progression.

Besides, the high number of radical cystectomy (9,19% of patients) proves the tendency to progression of T1 tumors. All tumors of these patients were staged as T4 at the anatomopathological exam of the bladder. This fact further underlines the capability of bladder neoplasm to invade progressively the external habit of the viscus. Although we found in all cystectomized patients a T4 neoplasm, we can't say that all T1HG tumors has the capability to became a T4, because our case record is too small to prove that.

Although our results are similar to the ones reported in literature, this study has some weak points. First, it is a single-center study; second, we enrolled a small population of patients. A large number of patients should be required to confirm our results and maybe a multicenter study should have a greater statistical value.

## Conclusion

Based on the data we obtained and on the high risk of recurrence and progression of T1 tumours, we can state that second-look TURBT is an important instrument in the treatment of superficial bladder tumors, because it maximizes staging accuracy, allows a total eradication of the neoplasm and yields prognostic advantages allowing key information to identify possible candidates for immediate radical cystectomy, in spite of the biological and economical cost of the second resection. Therefore, it's necessary to identify some criteria that may better allow to identify patients that should be undergone a second-look TURB, in order to avoid an unnecessary intervention linked to possible risks and associated with high healthcare costs.

**Conflict of interest:** Each author declares that he or she has no commercial associations (e.g. consultancies, stock ownership, equity interest, patent/licensing arrangement etc.) that might pose a conflict of interest in connection with the submitted article

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