Clinical Significance of Horizontal and Vertical Margin of En bloc TURBT specimen

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Introduction & Objectives

- The primary advantage of En bloc TURBT (En bloc TUR) for bladder cancer (BC) is to prevent the fragmentation of specimen and it can lead better diagnostic accuracy.
- By using BED specimen, horizontal and vertical margin can be diagnosed, but clinical significance has not yet been demonstrated in an objective study.
- We evaluated the clinical and pathological findings, meaning of horizontal and vertical margin in patients who underwent En bloc TUR.

Materials & Methods

- We retrospectively analyzed the record of the 139 patients who underwent En bloc TUR for BC in our institution between April 2013 and April 2019.
- We analyzed perioperative outcome, recurrence free survival (RFS) and progression free survival (PFS).
- We compared the patients’ demographics and RFS of horizontal margin positive with those of negative, and analyzed the relation between vertical margin positive and progression.

Results

1. Results of 139 cases of En bloc TUR

- **Patients demographics (n (%))**
  - Median Age (range): 72 (27-94)
  - Sex (M/F): 102/37
  - UTUC history: 20 (14)
  - De novo: 104 (75)
  - Cytology 4c: 26 (20)
  - Papillary: 127 (91)
  - Positive margin: 96 (69)
  - Multiple: 66 (48)
  - Tumor diameter (mean, mm): 16.3 ± 10.2

- **Perioperative outcome (n (%))**
  - Mean operation time (min, ± SD): 59.1 ± 25.0 (15-145)
  - Tumor location: Lateral 65 (47), Posterior 35 (25), Trigone 23 (17), Dome 10 (7)
  - Complication (Clavien Grade III<): 2 (1.4)

- **Tumoral outcome (n (%))**
  - Muscle layer contain rate (%): 93%
  - pTstage: pTis 1 (0), pTa 92 (66), pT1 40 (29), pT2s 6 (4)
  - With CIS: Grade LG 49 (35), HG 90 (65)
  - Horizontal margin: diagnostic rate 42%, positive 20 (34), negative 38 (66)
  - Vertical margin: diagnostic rate 100%, positive 10 (7), negative 129 (93)

2. Results of Horizontal Margin

- **Positive**
  - No. of pts: 38
  - De novo: 25 (66)
  - Cytology 4c: 7 (20)
  - Papillary: 36 (95)
  - Mean tumor diameter (mm, ± SD): 15.3 ± 9.0
  - pTstage: pTis 0, pTa 31 (82), pT1 7 (8)
  - With CIS: 2 (5)
  - HG: 24 (63)
  - Median follow up month (range): 19.5 (3-51)
  - Recurrence: 9 (24)

- **Negative**
  - No. of pts: 20
  - De novo: 16 (80)
  - Cytology 4c: 6 (33)
  - Papillary: 17 (85)
  - Mean tumor diameter (mm, ± SD): 17.6 ± 11.7
  - pTstage: pTis 1, pTa 9 (45), pT1 10 (50)
  - With CIS: 4 (20)
  - HG: 14 (70)
  - Median follow up month (range): 10.5 (3-51)
  - Recurrence: 2 (10)

- **P value**
  - 0.008

- **3-year RFS**
  - No rec on scar: 77.5% (95%CI: 54.4-85.5)
  - Recurrence: 23.4% (95%CI: 63.8-97.3)

3. Results of Vertical Margin

- **Positive**
  - ERBt for pT1: N=24
  - Vertical margin in 1st ERBT: Positive N=11, Negative N=13
  - 2nd TUR: pT1 Residue: Positive N=1, No residual tumor

Conclusions

- En-bloc TUR specimen can lead to diagnose the horizontal and vertical margin.
- Horizontal margin positive is not associated with recurrence.
- We should perform 2nd TUR in patients with vertical margin positive pT1 BC.