

Diagnostic ureteroscopy in CT urography-diagnosed upper tract urothelial carcinoma: delay in definitive treatment and increased intravesical recurrence

ABSTRACT

Purpose To investigate the effect of diagnostic ureteroscopy (URS) on the delay to surgical treatment of upper tract urothelial carcinoma (UTUC) detected by imaging and the risk of intravesical recurrence. **Materials and methods** We undertook a retrospective case-note analysis of all patients who underwent radical nephroureterectomy (NUU) from November 2012 to July 2019. We identified those who underwent diagnostic ureteroscopy prior to NUU as Group 1 and those who did not undergo diagnostic URS as Group 2. Perioperative and pathological parameters were compared between both groups. Kaplan-Meier and Log-Rank analyses were used to compare delay to NUU and the intravesical recurrence (IVR) free survival. Cox regression models were employed to analyze the risk factors of intravesical recurrence. **Results** Out of 69 patients with a mean age of 71.3 years and a mean follow-up of 48.5 months, 49 (71%) underwent URS while 20 (29%) did not. The mean time between the computerized tomography urography (CTU) and surgery was 86 days with URS and 59 days in the control groups ($p=0.007$). Intravesical recurrence in year one postoperatively was 28.2% in the URS group vs 5.9% in the control group ($p=0.04$). The Kaplan-Meier curve showed improved, yet insignificant, IVR-free survival for the control group (Log-Rank p -value=0.21). In multivariate Cox regression analysis, concomitant bladder carcinoma was an independent risk factor for IVR (HR, 15.01; 95%CI, 3.311 - 68.07; $p=0.0004$). Intravesical mitomycin-c was a protective factor (HR 0.154; 95%CI 0.025 - 0.922; $p=0.040$). **Conclusion** In our retrospective single-unit study, diagnostic ureteroscopy for CTU-detected upper tract urothelial carcinoma delayed definitive surgical treatment. Furthermore, it was associated with a significantly increased risk of early intravesical recurrence. URS can provide useful information and reassurance prior to major surgery but must be used with caution in light of these findings.

Keyword: Upper tract urothelial carcinoma; Ureteroscopy; Intravesical recurrence; Nephroureterectomy; Bladder cancer