

Impact of Ureteroscopy on Diagnostic Pathways and Radical Nephroureterectomy Outcomes in Upper Tract Urothelial Carcinoma

A. Maleki¹, L.F.C. Yu¹, H. Janebdar¹, J. Armitage¹

(1) Addenbrooke's Hospital, Cambridge - United Kingdom

Abstract

Objectives: To evaluate the impact of pre-operative ureteroscopy on diagnostic pathways and outcomes following radical nephroureterectomy (RNU) for suspected upper tract urothelial carcinoma (UTUC). Specifically, this study assessed: (1) diagnostic pathway efficiency, including time from imaging to surgery; (2) adherence to standards of care, including the use of intravesical mitomycin C (MMC) and adjuvant chemotherapy; and (3) oncological outcomes, including bladder cancer recurrence and extravesical metastasis.

Methods: A retrospective review of anonymised data was conducted for patients who underwent RNU between January 2024 and November 2025 at Addenbrooke's Hospital, Cambridge. Statistical analysis was performed using the Kruskal-Wallis test, Mann-Whitney U test, and Chi-square/Fisher's exact tests.

Results: Overall, 53 patients who underwent RNU were analysed. Pre-operative ureteroscopy (URS) was performed in 60% of cases, delaying RNU by a median of 88 days (183 vs 95 days; $p < 0.001$). There was a non-significant association between referral source and likelihood of pre-operative ureteroscopy ($p = 0.08$), with URS more frequently performed in patients referred from external hospitals (22 out of 30 cases) compared with local referrals (4 out of 11 cases) and primary care (6 out of 12 cases). Intravesical MMC was administered in 72% of cases and 17% received adjuvant chemotherapy. Time to MMC was significantly shorter following robotic surgery compared with a non-robotic approach (2 vs 12 days, $p < 0.001$). Bladder cancer recurrence and metastasis rates were low overall with no significant differences observed between URS and non-URS groups.

Conclusion: Pre-operative ureteroscopy is associated with significant delays to definitive surgery, while diagnostic pathway timings at our centre are broadly comparable to national benchmarks. These findings highlight the need for a risk-stratified approach to minimise treatment delays in UTUC. Further studies with larger cohorts and longer follow-up are required to better define oncological outcomes.