UAA Congress 2021 – Faculty Abstract

Laparoscopic nephroureterectomy for the treatment of upper tract urothelial carcinoma

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Purpose: This study aimed to compare the oncological outcomes and surgical complications of different minimally invasive techniques in patients with upper tract urothelial carcinoma (UTUC) undergoing nephroureterectomy.

Methods: From the updated data of the Taiwan UTUC Collaboration Group, a total of 3,333 UTUC patients were identified. After excluding ineligible cases, we retrospectively included 1,340 patients from 15 institutions who received hand-assisted laparoscopic nephroureterectomy (HALNU), laparoscopic nephroureterectomy (LNU) or robotic nephroureterectomy (RNU) between 2001 and 2021. Kaplan-Meier estimator and Cox proportional hazards model were used to analyze the survival outcomes, and binary logistic regression model was selected to compare the risks of postoperative complications of different surgical approaches.

Results: Among the enrolled patients, 741, 458 and 141 patients received HALNU, LNU and RNU, respectively. Compared with RNU (41.1%) and LNU (32.5%), the rate of lymph node dissection in HALNU was the lowest (17.4%). In both Kaplan-Meier and univariate analysis, the type of surgery was significantly associated with overall and cancer-specific survival. The statistical significance of surgical methods on survival outcomes remained in multivariate analysis, where patients undergoing HALNU appeared to have the worst overall ($p = 0.007$) and cancer-specific ($p = 0.047$) survival rates among the three groups. In all analyses, the surgical approach was not related to bladder recurrence. In addition, HALNU was significantly associated with longer hospital stay ($p = 0.002$), and had the highest risk of major Clavien-Dindo complications ($p = 0.011$), paralytic ileus ($p = 0.012$), and postoperative end-stage renal disease ($p < 0.001$).

Conclusions: Minimally invasive surgery can be safe and feasible. We proved that compared with the HALNU group, the LNU and RNU groups have better oncologic outcomes and fewer surgical complications. It is crucial to uphold strict oncological principles with sophisticated technique to improve outcomes. Further prospective studies are still needed to validate our findings.