

## **Intravesical Recurrence Following Radical Surgery for Urothelial Carcinoma of the Upper Urinary Tract: Single Centre 10-Year Follow-up**

**Introduction and Objective:** Upper urinary tract urothelial carcinoma (UUT-UC) is a relatively rare malignancy, accounting for 5% of urothelial cancers. In contrast to urothelial cancer of the bladder, UUT-UC tends to present at a higher stage and grade. Many long-term studies have evaluated South Asian populations, which may represent a different cohort of patients with UUT-UC from those seen in our practice in the UK. We reviewed our experience of UUT-UC over a 10-year period. We report on the incidence of intravesical recurrences, primary tumour grade and stage and prognostic factors.

**Materials and Methods:** We retrospectively reviewed the medical records of all patients who underwent a nephroureterectomy (open and laparoscopic) between 2000 and 2010. Of the 96 patients, 71 met the inclusion criteria. A previous history or concomitant bladder cancer, carcinoma-in-situ, neoadjuvant chemotherapy, non-urothelial cancer and follow-up < 12 months were excluded. Patient demographics, tumour location, pathological stage, grade, intravesical recurrences and disease-specific survival rates were evaluated. Univariate and multivariate analyses were performed using Minitab version 16. Statistically differences were considered to be present at  $P < 0.05$ .

**Results:** Mean age of patients was 67.8 years (range 29-86). Of the 71 patients, 25 (35%) experienced subsequent intravesical tumour recurrence during a median follow-up of 45 months (range 12-140). The median time to recurrence was 10 months (range 3-45). Univariate analyses showed patients with low-stage tumours and those with multifocal tumours were more likely to subsequently, develop intravesical recurrence. Furthermore, there was a positive correlation between primary superficial tumours and intravesical recurrence. Tumour stage, lymphovascular invasion and nodal disease were poor prognostic indicators.

**Conclusions:** The incidence of intravesical tumour recurrence following nephroureterectomy for UUT-UC is comparatively high. Although, most recurrences occur during the early period, it persists over a long period of time. Higher tumour stage and lymphovascular invasion increases the risk of metastatic disease and therefore, such patients should be followed up more closely. Our results are supported by published data based on South Asian cohorts.