Beyond the Lumen: First Report of Peri-Ureteric Urothelial Carcinoma Two Decades After NMIBC Diagnosis

Mandana Gholami[1], Jimmy Lam[1]

[1]Department of Urology, Flinders Medical Centre, Bedford Park, SA, Australia

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Background

Urothelial carcinoma encompasses malignancies involving bladder, urethra, ureter or pelvicalyceal system. Although bladder cancers account for >90% of urothelial carcinomas, upper tract surveillance in patients with bladder cancer is of great significance, given existence of concurrent bladder cancer and upper tract urothelial carcinoma, as well as recurrences in the upper tract [1]. We present a truly unique and first-in-literature case of extra-ureteric low-grade urothelial carcinoma, arising two decades after initial diagnosis of non–muscle-invasive bladder cancer (NMIBC).

Case

- 75-year-old male with 20+ year NMIBC history
- Bladder recurrences managed per guidelines; disease-free until upper tract findings
- CT urography revealed hydronephrosis & peri-ureteric mass external to ureter
- Flexible ureteroscopy: no mucosal lesion visualized
- CT-guided biopsy: low-grade papillary urothelial carcinoma found in peri-ureteric tissue, not within the lumen

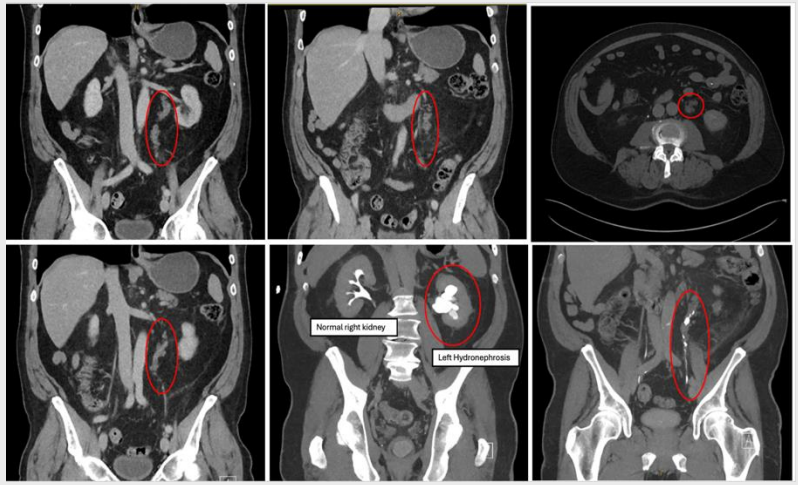

Figure 1. Left periureteric soft tissue and left hydronephrosis

Management

- Robot-assisted nephroureterectomy → Histology: low-grade, multicystic UC, no invasion, encasing ureter.
- Annual cystoscopy + CT surveillance — no recurrence to date.

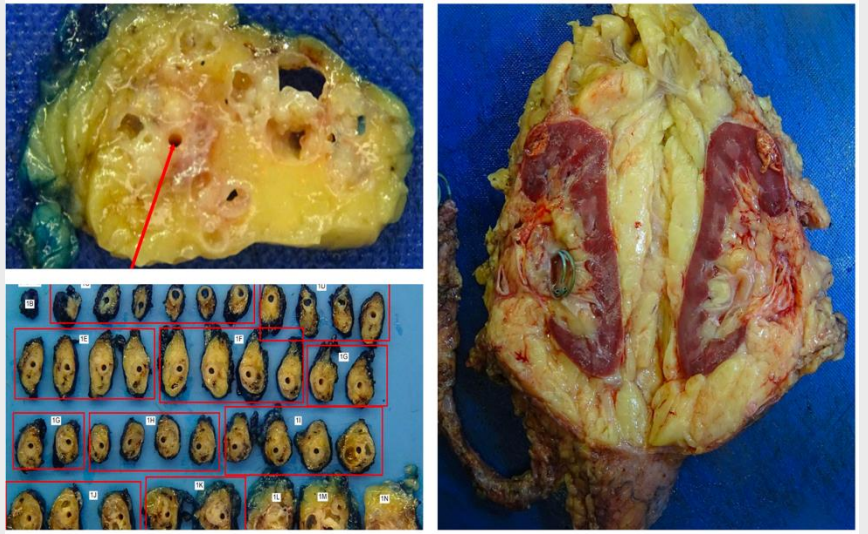

Figure 2. Left nephroureterectomy demonstrating normal ureter with peri-ureteric tumour

Discussion & Learning Points

- Unique site: Recurrence occurred in soft tissue outside ureter, not previously described
- Likely origin: Ectopic ureteric tissue (mesonephric duct remnant), unlike reported metastatic or iatrogenic seeding cases
- Highlights diagnostic blind spot: Mucosal surveillance (cystoscopy, ureteroscopy) can miss extraluminal disease
- When imaging is suspicious but endoscopy is negative, use alternative modalities like CT-guided biopsy
- No guidelines for extraluminal upper tract recurrences—necessitates individualized follow-up
- Calls for reconsidering surveillance strategies and systematic reporting of atypical recurrences

Reference

1. Cosentino, M., Palou, J., Gaya, J. M., Breda, A., Rodriguez-Faba, O., & Villavicencio-Mavrich, H. (2013). Upper urinary tract urothelial cell carcinoma: location as a predictive factor for concomitant bladder carcinoma. World journal of urology, 31(1), 141–145. https://doi.org/10.1007/s00345-012-0877-2