Renal outcome after surgery for upper tract urothelial carcinoma

Accurate staging in patients with upper tract urothelial carcinoma (UTUC) is not easily achievable from preoperative work-up. Thus, the preferred treatment for UTUC is based on radical nephroureterectomy (RNU) with bladder-cuff excision for the vast majority of patients. However, recent evidence has shown that the loss of renal units by RNU is related to postoperative renal function decline. This greatly reduces the possibility of receiving adjuvant platinum-based chemotherapy if needed. Kaag et al conducted a retrospective data review of 388 patients undergoing RNU from four US institutions; they found that the mean estimated glomerular filtration rate (eGFR) decreased by 24% after surgery. Using a cutoff of 60 mL/min/1.73 m², 49% of patients were eligible for chemotherapy before surgery, but only 19% of patients remained eligible postoperatively. Using a cutoff of 45 mL/min/1.73 m², 80% of patients were eligible for chemotherapy preoperatively, but only 55% remained eligible after surgery. In particular, patients of old age (>70 years) are more likely to experience a decline in renal function after RNU. Based on this observation, they suggested neoadjuvant chemotherapy for patients with advanced stages of carcinoma. Similar observations were concluded by Lane et al who found a 21% median relative reduction in renal function, and fewer than 50% of patients with sufficient renal function to receive platinum-based chemotherapy remain suitable postoperatively.

Although the rarity of UTUC makes it a difficult disease process to study, a large multi-institutional collaboration by the French Collaborative National Working-Group on UTUC and the UTUC collaboration recently addressed most of the issues based on a Western data pool. UTUC is reaching potentially epidemic proportions in the East, especially in Taiwan and China, because of exposure to carcinogenic herbal remedies. Data from China in the article by Xiong et al using a 10-year study of a cohort of 785 cases attending Peking University First Hospital from 2002 to 2011 demonstrated a particularly high incidence of chronic kidney disease (CKD) in Chinese patients with UTUC and presenting 70.8% in the patients with UTUC we treated. That is, relatively younger age, female sex, predominant and more profound renal function diminishment in the patients with UTUC we treated. Taking the data obtained from China and Taiwan, it is apparent that the UTUC population with renal function deterioration is a major public health issue amongst ethnic Chinese. The progressive loss of renal function post-RNU will lead to more patients with CKD and impede the chance for chemotherapeutic treatment when needed and also increase the number of end stage renal failure casualties. Perhaps it is time to rethink the most appropriate surgical procedure for these patients and not just burn down the house for every case with UTUC.
Kidney-sparing surgery (KSS) has the obvious advantage of enabling preservation of renal function, ideally while maintaining the oncological outcomes normally obtained after radical extirpative surgery. KSS is usually restricted to patients with imperative indications such as renal insufficiency, solitary kidney, or bilateral UTUC and patients who are medically unfit for RNU. However, the favorable outcomes achieved with segmental ureterectomy and endoscopic extirpation or fulguration ablation of the tumor have encouraged several authors to propose the use of these procedures in patients with UTUC who also have normal, functioning contralateral kidneys. The elective indications for use of KSS in a wider range of patients with UTUC have been defined in recent journals and warrants special attention.

Conflicts of interest

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References


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