

Original article

# Degree of hydronephrosis predicts adverse pathological features and worse oncologic outcomes in patients with high-grade urothelial carcinoma of the upper urinary tract

Paul H. Chung, M.D.<sup>a</sup>, Laura-Maria Krabbe, M.D.<sup>a,c</sup>, Oussama M. Darwish, M.D.<sup>a</sup>,  
Mary E. Westerman, B.A.<sup>a</sup>, Aditya Bagrodia, M.D.<sup>a</sup>, Bishoy A. Gayed, M.D.<sup>a</sup>,  
Ahmed Q. Haddad, M.D.<sup>a</sup>, Payal Kapur, M.D.<sup>b</sup>, Arthur I. Sagalowsky, M.D.<sup>a</sup>,  
Yair Lotan, M.D.<sup>a</sup>, Vitaly Margulis, M.D.<sup>a,\*</sup>

<sup>a</sup> Department of Urology, University of Texas Southwestern Medical Center, Dallas, TX

<sup>b</sup> Department of Pathology, University of Texas Southwestern Medical Center, Dallas, TX

<sup>c</sup> Department of Urology, University of Muenster Medical Center, Muenster, Germany

Received 28 January 2014; received in revised form 24 February 2014; accepted 24 February 2014

## Abstract

**Objective:** To evaluate degree of hydronephrosis (HN) as a surrogate for adverse pathological features and oncologic outcomes in patients with high-grade (HG) and low-grade (LG) upper tract urothelial carcinomas (UTUCs).

**Methods:** We retrospectively reviewed 141 patients with localized UTUCs that underwent extirpative surgery at a tertiary referral center. Preoperative imaging was used to evaluate presence and degree of ipsilateral HN. We evaluated degree of HN (none/mild vs. moderate/severe), pathological findings, and oncologic outcomes.

**Results:** HG UTUC was present in 113 (80%) patients, muscle-invasive disease ( $\geq$ pT2) in 49 (35%), and non-organ-confined disease ( $\geq$ pT3) in 41 (29%). At a median follow-up of 34 months, 49 (35%) patients experienced intravesical recurrence, 28 (20%) developed local/systemic recurrence, and 24 (17%) died of UTUC. HN was graded as none/mild in 77 (55%) patients and moderate/severe in 64 (45%). In patients with HG UTUC, but not LG, degree of HN was associated with advanced pathological stage ( $P < 0.001$ ), positive lymph nodes ( $P = 0.01$ ), local/systemic recurrence-free survival (hazard ratio [HR] = 5.5,  $P = 0.02$ ), and cancer-specific survival (HR = 5.2,  $P = 0.02$ ). On multivariable analysis of preoperative factors, degree of HN in patients with HG UTUC was associated with muscle invasion (HR = 9.3; 95% CI: 3.08–28.32;  $P < 0.001$ ), non-organ-confined disease (HR = 4.5; 95% CI: 1.66–12.06;  $P = 0.003$ ), local/systemic recurrence-free survival (HR = 2.5; 95% CI: 1.07–5.64;  $P = 0.04$ ), and cancer-specific survival (HR = 2.6; 95% CI: 1.05–6.22;  $P = 0.04$ ).

**Conclusions:** Degree of HN can serve as a surrogate for advanced disease and predict worse oncologic outcomes in HG UTUC. Degree of HN was not predictive of intravesical or local/systemic recurrence in LG UTUC. © 2014 Elsevier Inc. All rights reserved.

**Keywords:** Upper tract urothelial carcinoma; Hydronephrosis; Nephroureterectomy; Outcome; Chemotherapy

## 1. Introduction

Upper tract urothelial carcinoma (UTUC) is a rare disease and represents 5% to 8% of all urothelial malignancies [1]. The gold standard of treatment for patients with UTUC is radical nephroureterectomy (RNU) [2]. Patients

subjected to RNU may be overtreated if they have low-grade (LG) disease or low-stage disease or both and undertreated if they have advanced and non-organ-confined disease. The latter patients may benefit from perioperative chemotherapy; however, it is challenging to identify these patients correctly with preoperative staging [3]. Upper tract tissue sampling and radiographic imaging alone are not reliable in accurately predicting stage, therefore other preoperative surrogates are needed to help identify which

\* Corresponding author. Tel.: +1-214-648-0567; fax: +1-214-648-4789.  
E-mail address: vitaly.margulis@utsouthwestern.edu (V. Margulis).

patients have advanced disease associated with poor prognosis. These patients should be considered for neoadjuvant chemotherapy, as many patients who undergo extirpative surgery do not have sufficient renal reserve to receive platinum-based adjuvant chemotherapy [4]. The theoretical advantages of neoadjuvant compared with adjuvant chemotherapy include eradication of micrometastases, improved patient tolerability before surgery, and ability to deliver higher doses before loss of renal function after surgery [5].

Common preoperative factors used to predict muscle-invasive or non-organ-confined disease include tumor grade, tumor architecture, tumor location, and radiographic imaging [6]. In urothelial carcinoma of the bladder, presence of hydronephrosis (HN) before radical cystectomy is a surrogate for higher pathological stage and worse oncologic outcomes [7]. Presence of HN in UTUC has also been suggested to be associated with advanced pathological stage on final specimen and has been linked to development of cancer metastasis and survival [8–12]. However, confounding studies have identified the contrary [13–15]. All prior HN studies evaluated patients with LG and high-grade (HG) UTUCs as 1 cohort. Furthermore, several of these studies included intravesical recurrence (IVR) in their assessment of local/systemic recurrence. This study uniquely explores the associations of degree of HN and its effects on local/systemic and bladder recurrences separately in LG and HG groups. It is possible that the implications of HN in LG tumors are significantly different from that in HG tumors, and these patients should not undergo neoadjuvant chemotherapy if that is the case.

## 2. Methods

With institutional review board approval, a retrospective review was conducted of patients who underwent RNU or distal ureterectomy for UTUC from July 1998 to July 2013. Patients with metastatic or unresectable UTUC were excluded. Patients undergoing conservative management with endoscopic ablation were also excluded. Patients with a history of bladder cancer were included in this study; however, patients with prior muscle-invasive bladder cancer, prior cystectomy, or cystectomy at time of RNU were excluded. Patients did not receive a postoperative dose of adjuvant mitomycin C as previously described in the One Dose Mitomycin-C trial [16]. Pathological characteristics (primary tumor and nodal stage, tumor grade, location, focality, and architecture [papillary vs. sessile]), lymphovascular invasion, and presence of carcinoma in situ were assessed by a genitourinary pathologist using the 2010 American Joint Committee in Cancer-Union for International Cancer Control staging criteria and the 2004 World Health Organization/International Society of Urological Pathology consensus classification [17].

Patients were required to have available preoperative imaging to assess presence and degree of ipsilateral HN.

Imaging conducted within 6 months before surgery was reviewed. Ipsilateral HN was graded by O.M.D. using preoperative computer tomography with or without contrast, intravenous pyelogram, or renal ultrasound imaging. If more than 1 imaging modality was available for a patient, preference was given to computer tomography before intravenous pyelogram and ultrasound. Degree of HN was assigned as follows: none (no calyx or pelvic dilation), mild (pelvic dilatation alone), moderate (mild calyx dilation), or severe (severe calyx dilation or calyx dilation accompanied by renal parenchyma atrophy).

Patients were followed up every 3 to 4 months for the first year, semiannually for the second through fifth year, and then annually thereafter. Follow-up included physical examination, routine blood work, urine cytology, chest radiography, cystoscopy, and upper tract imaging. Further workup was obtained when clinically indicated. Local recurrence was defined as recurrence in the renal fossa or retroperitoneal disease, whereas systemic recurrence was defined as any distant recurrence. IVR was assessed separately from local and systemic recurrence. Death and cause of death were assessed by the treating physician and death certificate or death certificate alone.

### 2.1. Statistical analysis

The associations between HN and clinical and pathological parameters were assessed using Fisher exact test or chi-square analysis. Kaplan-Meier analysis was used to evaluate oncologic survival data. To identify risk factors for muscle invasion and non-organ-confined disease, preoperative and postoperative parameters were evaluated with univariate (UVA) and multivariate (MVA) binary logistic regression analyses. UVA and MVA Cox regression analyses were conducted to assess intravesical recurrence-free survival (RFS), local/systemic RFS, and cancer-specific survival (CSS). Statistical significance was defined as 2-sided  $P < 0.05$ . All statistics were conducted using SPSS (Version 19, IBM, Armonk, NY).

## 3. Results

Clinical and pathological characteristics of the 141 patients who met inclusion criteria are presented in Table 1. Median age at the time of surgery was 70 years (range: 35–92), and 91 patients (64%) were male. A total of 50 patients (35%) had a history of bladder cancer. Perioperative chemotherapy was administered to 23 patients: neoadjuvant chemotherapy ( $n = 10$ , 7%), adjuvant chemotherapy ( $n = 10$ , 7%) or both ( $n = 3$ , 2%). Patients underwent laparoscopic or open RNU ( $n = 129$ , 91%) according to the surgeon's preference. All distal ureterectomy procedures ( $n = 12$ , 9%) were conducted as open procedures. Lymph node (LN) dissection was conducted to the surgeon's preference in 46 patients (33%) and did not follow a predefined template.

Download English Version:

<https://daneshyari.com/en/article/3999815>

Download Persian Version:

<https://daneshyari.com/article/3999815>

[Daneshyari.com](https://daneshyari.com)