[12]Department of Urology, Fundaciò Puigvert, Barcelona, Spain;
[13]Department of Urology, OLV Clinic, Aalst, Belgium;
[14]Roland Van Velthoven Department of Urology, Jules Bordet Institute, Bruxelles, Belgium

Introduction/Aim: Current guidelines consider a positive prostate biopsy (Bx) result as an important requirement in men seeking to undergo salvage radical prostatectomy (sRP) after biochemical recurrence (BCR). However, results of confirmatory pre-sRP biopsy (cBx) have never been reported in large contemporary cohorts. Our aim was to evaluate the detection rate of pre-sRP prostate Bx; to establish the Gleason score (GS) concordance (Conc) of cBx and first diagnostic biopsy (fBx) with the final sRP specimen GS, respectively; to analyse the GS Conc between the fBx and cBx GS. *Materials and Methods:* We retrospectively collected data of 209 men who underwent sRP after BCR at 10 European high-volume centres between 1991 and 2015. Clinical and pathological features, including age, prostate-specific antigen (PSA), TNM, imaging and previous treatments were recorded. FBx, cBx and sRP GS sums were categorised in ≤6, 7, 8, 9 and 10. Men without appropriate information or undergoing sRP without an available cBx result were excluded. Cohen's Kappa coefficient was used for Conc to consider inter-rater agreement. Detection rate and Conc, upgrading (UpGr) and downgrading (DownGr) are reported as number of events and percentages. *Results:* One hundred and sixty six men were included. Mean age, initial and pre-sRP PSA were 64.8±6.1 years, 19.6 and 8.7 ng/ml, respectively. Pathological stage of the sRP specimen was pT2 in 43.7% and pT3 in 54.4%. Two cases were pT0 and no pT4 were present. All had negative imaging for extra-nodal metastasis. Sixty percent of the patients had hormone therapy before sRP. CBx Detection rate was 89.8% (n=149) with the remaining 10.24% (n=17) having no prostate cancer diagnosis due to radiation injury or absence of tumour being detected. Conc, UpGr and DownGr between cBx and sRP specimens were 61.1% (n=88, k=0.208), 28.5% (n=41) and 10.4% (n=15). Five sRP specimens were not evaluable due to radiation injury or had no tumour. Conc, UpGr and DownGr between fBx and cBx were 48.9 (n=45, k=0.284), 43.8 (n=40) and 7.61 (n=7) (fBx missing n=57). Conc, UpGr and DownGr between fBx and sRP specimens were 36.7% (n=32, k=0.105), 55.1% (n=48) and 8.0% (n=7), respectively. *Conclusion:* Pre-sRP confirmatory biopsy has an appropriate ability of confirming the presence of tumour. However, it underestimates GS in a significant proportion of men, having a higher GS at the final histology of the sRP specimen. The original diagnostic biopsy is not a reliable source of GS information when planning second-line treatment after BCR as it is upgraded in more than half of the cases.

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ANATOMICAL LANDMARKS AND SURGICAL TEMPLATES OF LYMPH NODE DISSECTION FOR UPPER TRACT UROTHELIAL CARCINOMA: A SYSTEMATIC REVIEW OF THE LITERATURE

Riccardo Campi[1], Andrea Minervini[1], Andrea Mari[1], Francesco Sessa[1], Tommaso Chini[1], Pietro Spatafora[1], Riccardo Tellini[1], Davide Facchiano[1], Alberto Lapini[1], Marco Roscigno[2], Sergio Serni[1] and Marco Carini[1]

[1]Department of Urology, University of Florence, Careggi Hospital, Florence, Italy, Firenze (FI), Italy;
[2]Department of Urology, AO Papa Giovanni XXIII, Bergamo, Italy

Introduction/Aim: Indications, techniques and outcomes of lymph node dissection (LND) for upper tract urothelial carcinoma (UTUC) are still debated. Although potential benefits of LND have been described in literature, hesitancy and lack of standardization still exists even among academic institutions. The aim of the study was to provide a comprehensive overview on anatomical landmarks of LND for UTUC and propose evidence-based templates according to the location of the primary tumor. *Materials and Methods:* A systematic review of the English-language literature up to June 1, 2015, was performed using the Medline, Scopus and Web of Sciences databases according to the PRISMA criteria. Cohort studies providing detailed data on the surgical template of LND were included and analyzed. *Results:* A total of 702 articles were identified. After study selection, 16 studies recruiting 1,705 patients were selected for review and critically analyzed. Among these, most were single-centre, retrospective cohort studies, of which 2 mapping studies. Sample size, tumor location and stage were highly variable across the published series. An open surgical approach was used in most cases. No standardized selection criteria for LND were followed, being LND performed at surgeon's discretion and/or based on pre/intraoperative suspicion of LN metastases. In most studies, the extent of LND was not standardized. An overview of the LND templates according to the current literature are shown in Figure 1, while the proposed standardized templates based on the available mapping studies in Figure 2 (A-C). *Discussion and Conclusion:* Indications and templates of LND for UTUC are still controversial. We have proposed standardized evidence-based templates to improve the quality of future clinical series. Further research is needed to validate these templates to understand the exact patterns of lymphatic drainage from UTUCs.

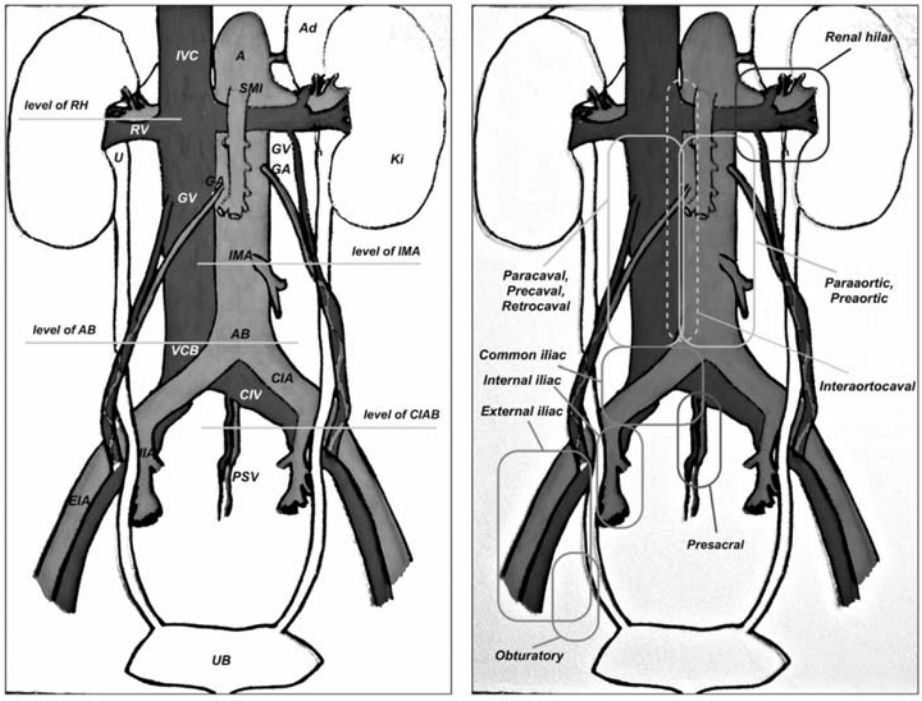


Figure 1. *Schematic view of surgical anatomy (left picture) and critical sites of lymph node dissection (right picture) for upper tract urothelial carcinoma. A, aorta; IVC, inferior vena cava; GV, gonadal vein; GA, gonadal artery; AB, aortic bifurcation; VCB, vena cava bifurcation; CIA, common iliac artery; EIA, external iliac artery; IIA, internal iliac artery; CIAB, common iliac artery bifurcation; RH, renal hilum; SMI, superior mesenteric artery; IMA, inferior mesenteric artery; Ki, kidney; Ad, adrenal; UB, urinary bladder.*

A **Proposed anatomical templates of LND for UTUCs of the Renal Pelvis and Upper third of the Ureter**

Right Side		Left Side	
Anatomical sites of the template	**Lower boundary of dissection**	**Anatomical sites of the template**	**Lower boundary of dissection**
1) renal hilar 2) paracaval (incl. precaval) 3) retrocaval 4) interaortocaval	For RP-UTUC: at least the level of IMA, possibly the level of AB; For UU-UTUC: the level of AB	1) renal hilar 2) paraaortic (inc. preaortic)	For RP-UTUC: at least the level of IMA, possibly the level of AB; For UU-UTUC: the level of AB

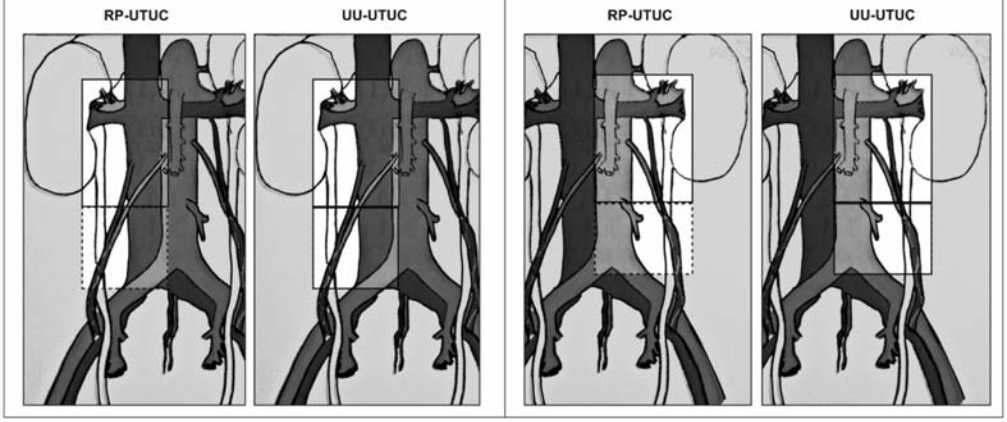
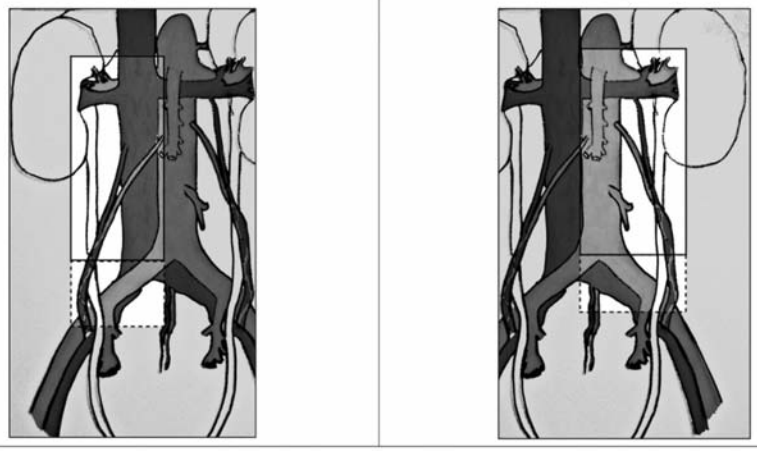


Figure 2. *A: Anatomical templates of lymph node dissection (LND) according to laterality and location of the primary tumor based on a critical analysis of the current literature: LND templates for tumors of the renal pelvis and upper third of the ureter. RP, renal pelvis; UU, upper third of the ureter; MU, middle third of the ureter; LU, lower third of the ureter; LN, lymph node.*

B **Proposed anatomical templates of LND for UTUCs of the Middle third of the Ureter**

Right Side		Left Side	
Anatomical sites of the template	**Lower boundary of dissection**	**Anatomical sites of the template**	**Lower boundary of dissection**
1) renal hilar 2) paracaval (incl. precaval) 3) retrocaval 4) interaortocaval 5) Possibly common iliac	At least the level of AB, possibly the level of CIAB	1) renal hilar 2) paraaortic (inc. Preaortic) 3) Possibly common iliac	At least the level of AB, possibly the level of CIAB



C **Proposed anatomical templates of LND for UTUCs of the Lower third of the Ureter**

Right Side		Left Side	
Anatomical sites of the template	**Upper and Lower boundaries of dissection**	**Anatomical sites of the template**	**Upper and Lower boundaries of dissection**
1) common iliac 2) external iliac 3) internal iliac 4) Obturatory 5) possibly presacral and paracaval [especially if suspected nodes]	From the level of the renal hilum to at least the level of inferior mesenteric artery, possibly to the level of aortic bifurcation	1) common iliac 2) external iliac 3) internal iliac 4) Obturatory 5) possibly presacral and paraaortic [especially if suspected nodes]	From the level of the renal hilum to at least the level of inferior mesenteric artery, possibly to the level of aortic bifurcation

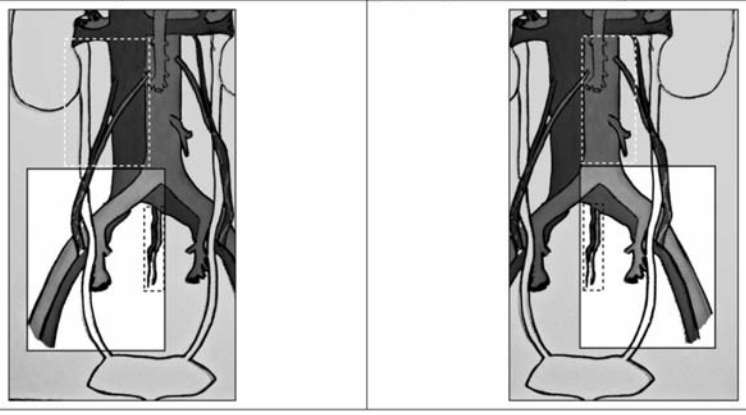


Figure 2. *B: Anatomical templates of lymph node dissection (LND) according to laterality and location of the primary tumor based on a critical analysis of the current literature: LND templates for tumors of the middle third of the ureter. RP, renal pelvis; UU, upper third of the ureter; MU, middle third of the ureter; LU, lower third of the ureter; LN, lymph node. C: Anatomical templates of lymph node dissection (LND) according to laterality and location of the primary tumor based on a critical analysis of the current literature: LND templates for tumors of the lower third of the ureter. RP, renal pelvis; UU, upper third of the ureter; MU, middle third of the ureter; LU, lower third of the ureter; LN, lymph node.*