INTRODUCTION AND OBJECTIVES: Extra nodal extension (ENE) is associated with poor outcomes in lymph node (LN) positive bladder cancer patients treated with radical cystectomy (RC). In addition, variant histologies of urothelial carcinoma of the bladder (UCB) seem to be associated with unfavorable outcomes after RC. The impact of variant UCB histologies on ENE, however, remains unclear. To investigate the association of variant UCB histologies and ENE as well as their predictive value on outcomes.

METHODS: We collected data of 517 UCB patients treated with RC without neoadjuvant chemotherapy at our academic center between 1996 and 2011. All pathologic bladder and LN specimen were meticulously reviewed for presence and extent of variant UCB histologies as well as presence and extent of ENE by dedicated uro-pathologists. For analyses we used the following subgroups: Pure UCB vs. UCB and squamous cell carcinoma vs. UCB and non-squamous cell carcinoma, respectively. Cox regression models evaluated the association with disease recurrence and cancer-specific survival, respectively.

RESULTS: Overall, 138 patients had LN metastasis (27%). The median number of removed LNs was 15 (IQR 9; 18). 43 LN positive patients (31%) had ENE with a median length of 1cm. UCB with variant histology was present in 96 patients (20%) with squamous cell (12.4%) and sarcomatoid (2.7%) differentiation being most common. The general presence of variant histology and any variant histology subtype were neither associated with lymph node metastasis nor ENE (all p-values >0.05). Compared to pure UCB, variant histology of non-squamous cell differentiation, but not squamous cell differentiation, was associated with disease recurrence and cancer-specific mortality, respectively (pairwise p-values =0.016) in Kaplan-Meier analyses. In LN positive patients, the presence and any subgroup did not influence outcomes (p=n.s.). The presence of LN metastasis and ENE in LN positive patients were significantly associated with disease recurrence and cancer-specific mortality, respectively (all p<0.001). An ENE >1cm length was also associated with disease recurrence (p=0.049). In multivariable analyses that adjusted for standard UCB prognosticators, ENE, but not variant histology, was an independent predictor for disease recurrence (HR 1.55; p=0.016) and cancer-specific mortality (HR 1.50; p=0.008).

CONCLUSIONS: ENE is a strong predictor for disease recurrence and cancer-specific mortality in node positive pure UCB and UCB with variant histology. Presence of variant histology does not seem to increase the likelihood of ENE.

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AN EASILY APPLICABLE MORTALITY INDEX FOR PATIENTS SELECTED FOR RADICAL CYSTECTOMY OR RADICAL PROSTATECTOMY

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INTRODUCTION AND OBJECTIVES: To determine which single comorbid conditions are independently associated with competing mortality after radical cystectomy or radical prostatectomy in order to develop a mortality index.

METHODS: The study samples consisted of 932 consecutive patients who underwent radical cystectomy between 1993 and 2012 for high risk non-muscle-invasive or muscle-invasive urothelial or undifferentiated bladder cancer and of 2961 consecutive patients who underwent radical prostatectomy between 1992 and 2007 for clinically localized prostate cancer. Competing mortality was the study endpoint. Cox proportional hazard models for competing risks were used to study combined effects of the variables.

RESULTS: Age (hazard ratio, HR, per year 1.05; p<0.0001), angina pectoris (HR 1.68, p=0.0030), chronic lung disease (HR 1.39, p=0.0483), diabetes mellitus (1.36, p=0.0468), current smoking (HR 1.48, p=0.0119), American Society of Anesthesiologists (ASA) physical status class 3-4 (HR 1.74, p=0.0004) and male sex (HR 1.51, p=0.0314) were independent predictors of competing mortality after radical cystectomy. After radical prostatectomy, age, angina pectoris, chronic lung disease, peripheral vascular disease, cerebrovascular disease, diabetes mellitus, moderate or severe renal disease, current smoking and ASA class 3-4 were independent predictors of competing mortality, respectively (all p<0.01).

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