

Lymphovascular invasion as a predictive factor for muscle-invasive bladder cancer and its importance in a bladder-conservation treatment group

KEY WORDS

Lymphovascular invasion, urinary bladder, neoplasms

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Re: Rene NJ, Cury FB, Souhami L. Conservative treatment of invasive bladder cancer. *Curr Oncol* 2009;16:36–47.

I read the article by Drs. Rene, Cury, and Souhami with interest. They reviewed the literature on radiochemotherapy treatments for muscle-invasive bladder cancer and concluded that bladder preservation might be a safe approach.

In a recent paper from the same clinic, Tran *et al.* retrospectively reviewed their experience in the conservative treatment of elderly patients with a histologic diagnosis of T2a–4 N0 M0 transitional-cell carcinoma of the bladder and evaluated certain parameters affecting patient survival in 39 patients [1]. In 2007, we had designed a similar study in cystectomized muscle-invasive bladder tumour patients [2]. We evaluated whether a difference could be detected in the clinical outcomes of patients with progressive and primary muscle-invasive bladder cancer, and we investigated certain parameters as possible predictors of cancer-specific survival. Despite the unfavourable study population, 5-year cancer-specific survival rates in the Tran *et al.* study were comparable to the outcomes in ours. On univariate analysis for cause-specific survival in the study by Tran *et al.,* no parameter was found to be a statistically significant prognostic factor. Conversely, in our study, lymphovascular invasion (LVI) and pathologic T stage of the primary tumour remained significant independent prognostic factors for cancer-specific survival. Detection of local or distant metastasis, or both, during follow-up dramatically shortened the life of cystectomized bladder cancer patients.

Currently, the role of LVI, especially as a prognostic factor for progression and survival, is a controversial issue. Last year, an interesting study was published revealing significant agreement of LVI status at transurethral bladder tumour resection (TUR-TM) and at subsequent cystectomy [3]. In our opinion, histologic evaluation of TUR-TM and of cystectomy specimens in terms of the appearance of LVI should provide valuable prognostic data during follow-up. This can also be true for patients undergoing bladder-conservation treatment strategies.

Nevertheless, there is a limitation of this pathologic datum in clinical practice. When lymphovascular invasion is identified in a transurethral bladder tumour resection sample, it will be present in the cystectomy sample in 65% of cases and associated with nodal metastasis in 41% [3]. It is not surprising that LVI is identified more frequently in cystectomy specimens, because a far greater amount of tumour is available for examination. The limitation arises only in clinical T2 tumours from the presence of statistical concordance between matched TUR-TM and cystectomy specimens; it was not the case for clinical T1 tumours. Lotan *et al.* evaluated a large series of patients and concluded that LVI was independently associated with cause-specific survival in cases with negative lymph nodes [4].

Only a small fraction of clinical T1 tumours have detectable LVI in the TUR-TM specimen, despite a significant presence in matched cystectomy cases. These data suggest low sensitivity for predicting LVI in the cystectomy specimen. The presence of LVI still implies a high-risk tumour in this clinical T1 population in view of its association with nodal metastasis. These findings suggest that LVI detection in the TUR-TM specimen can potentially be used to risk-stratify patients. Lymphovascular invasion is therefore a valuable histologic tool in the evaluation of transurethral bladder tumour resection samples, particularly clinical T2 cancers, because there is significant agreement of LVI status at TUR-TM and at subsequent cystectomy.

In conclusion, the prognostic value of LVI in either clinical T1 or T2 patients needs to be better clarified. But, for the prediction of survival in patients after radical cystectomy or a bladder-preserving treatment protocol, appearance of LVI in cystectomy or TUR-TM

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specimens might be helpful in current practice and can aid in decision-making and timing of an adjuvant chemoradiotherapy treatment strategy in a bladder tumour patient.

In the paper, Dr. Rene already emphasized the importance of concomitant chemotherapy. This is especially important in elderly patients with poor prognosis.

We thank Dr. Rene and associates for this interesting and insightful article.

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REPLY FROM DR. LUIS SOUHAMI

We thank Drs. Tokgöz and Erol for their interest in our review paper on the conservative management of invasive bladder cancer and for their comments. They specifically refer to the potential prognostic value of lymphovascular space invasion for cancer-specific survival in patients undergoing radical cystectomy [1]. Lymphovascular space invasion has been shown to be of prognostic value in other malignancies, and we agree with the authors that it is likely to be predictive of survival in bladder cancer and that further studies are needed to better clarify its potential role as a stratification factor.

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