

Editorial

Editorial Concerning “Impact of the Level of Urothelial Carcinoma Involvement of the Prostate on Survival after Radical Cystectomy”

Prostatic involvement by urothelial carcinoma in patients with bladder cancer is a frequent finding and their prognostic significance and implication for the management of these patients has been the subject of study for many years. In one of the largest series of radical cystoprostatectomy with 995 patients with bladder cancer, Moschini M et al have shown that prostatic involvement by urothelial carcinoma was identified in 307 patients with an incidence of 30.9%. The authors provided further evidence to confirm that prostatic stromal invasion is associated with significantly worse outcome when compare to prostatic involvement by carcinoma *in-situ* (urethra or prostatic duct/acini) or subepithelial (lamina propria) invasion of prostatic urethra. Multifocality of bladder tumor and presence of CIS was found to be associated with a higher probability of prostatic involvement by urothelial carcinoma [1]. It has becomes clear that careful clinical and pathologic evaluation of the prostate before and post-surgery are helpful in the planning and management of male patients with bladder cancer. Over the last few decades, many studies have shown that the incidence of prostatic urothelial carcinoma is quite variable, ranging from 15% to 48% [2]. However, the more contemporary series with large number of cases and when the prostate is evaluated by whole mount section, demonstrate that the incidence is consistently around 30%–35% [3, 4]. It has also been long recognized that there are variable levels or patterns of involvement of prostate in patients with bladder cancer. The involvement of the prostate by urothelial carcinoma can be divided by the topographic distribution, presence or absence of

invasion, extend or level of prostatic stromal invasion, contiguous (bladder origin) or non-contiguous (prostate origin). Many studies have addressed the prognostic significance of each type or levels of prostatic involvement by urothelial carcinoma and attempts have been made to best incorporate these findings into the anatomic staging of bladder cancer. These have resulted in revisions of staging scheme in the last two AJCC staging manuals in 2010 and 2017. It is the recognition that prostatic involvement by CIS or subepithelial invasion of prostatic urethra has a significantly more favorable outcome than that of prostatic stromal invasion, AJCC 2010 specified that for bladder tumor with only established prostatic stromal invasion regardless of contiguous (bladder origin) or non-contiguous (prostate origin), be considered pT4a disease. It has also been recognized that there are two distinct pathways of prostatic stromal invasion, i.e. invasion of prostate by primary invasive bladder tumor penetrating through the entire bladder wall into prostate or through the extraprostatic soft tissue, or invasion of prostate stroma by urothelial carcinoma arising from either prostatic urethra prostatic duct/acini without direct invasion of prostate from bladder cancer. Unfortunately, this issue was not addressed in the study of Moschini et al. due to lack of this pathologic information [1]. However, the results have been inconclusive with regard to the prognostic significance of these two pathways of stromal invasion. While some studies showed that contiguous invasion (bladder origin) of prostate is associated with a worse prognosis compared to prostatic stromal invasion arising from prostatic urethra,

prostatic duct/acini, others showed no difference. These discrepant results may be due to a number of factors, most notably the study population with different bladder tumor stages, and methodology of pathologic examination of prostate. It is therefore somewhat confusing for clinicians and pathologists to assign a composite bladder tumor staging based on tumor involvement in both bladder and prostate. Some investigators have proposed that the bladder carcinoma with prostatic involvement be staged according to the origin of urothelial carcinoma [4]. If the prostate is involved by contiguous invasive bladder carcinoma, the bladder tumor is properly staged as pT4a; if the prostatic urothelial carcinoma is arising from the prostatic urethra, prostatic duct or acini, the bladder and prostate be staged separately, i.e. bladder tumor is staged according to the depth of invasion, whereas the prostate (urethra) is staged according to the levels and extent of prostate involvement by urothelial carcinoma. This proposal has been accepted by the recent 2017 AJCC staging system and is also in line with staging of multifocal tumor in renal pelvis and ureter, or bladder tumor and ureteral tumor [5].

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