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Prostate Cancer: Localized II
Podium
none
505: "Index lesion" mapping by 3D image-guided TRUS biopsy: Correlation with step-sectioned radical prostatectomy (RP) specimens

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Introduction and Objectives

Cancer mapping by real-time 3D TRUS tracking of each biopsy trajectory (Urostation®, Koelis, France) provides a novel opportunity to pre-operatively document the actual geographic location of biopsy-proven cancer within the prostate (J Urol 2012 in press). The objective of this study is to determine the accuracy of such 3D TRUS biopsy-based cancer mapping by comparing it with step-sectioned analyses of RP specimens. Index lesion was defined as the lesion with the largest volume or highest Gleason score on RP specimen.

Methods

Of 113 consecutive patients undergoing outpatient real-time 3D TRUS-tracking biopsy, 25 were diagnosed with cancer and underwent robotic radical prostatectomy. In the 25 patients, morphometry and volumetry of each cancer focus was performed from 3 mm step-sectioned RP specimens. Data were collected prospectively: median age (63.2yrs), PSA (7.7 ng/ml), clinical stage T1c/T2 (20/5), biopsy Gleason score 6/7/8/9/10 (8/11/1/4/1), and number of systematic vs. image-targeted biopsy cores per each biopsy session (12 vs. 2.8). For all biopsies and RP specimens, we designated cancer location per 27 regions-of-interest schema of prostate anatomy (Eur Urol 59: 477, 2011)

Results

For index/2nd/3rd cancer foci in the RP specimens, morphometrically-calculated median volume was 1.57cc (0.03-7.4), 0.42cc (0.02-1.13), and 0.22cc (0.03-0.49) (p

Conclusions

Mapping of index cancer lesion by 3D-TRUS tracking biopsy had high accuracy as confirmed by step-sectioned RP specimens. Needle biopsy accurately provided 3D location and Gleason score of the index lesion in 84% and 100% of patients, respectively. Image-guided biopsy strategies appear to provide superior precision as compared to current systematic (image-blind) biopsies. These data have implications for lesion-targeted active surveillance and focal therapy protocols.