EP012 Comparison of preoperative MRI findings and histopathological data in bladder cancer staging: Preliminary data from a prospective study

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Introduction & Objectives: Management of bladder cancer is primarily driven by stage, grade, and biological potential. Knowledge of each is derived using clinical, histopathological, and radiological investigations. In bladder cancer patients, staging and postoperative follow-up depends on CT scan data. However, the sensitivity and specificity of CT imaging in detecting lymph node metastasis are relatively low, and regular CT scans result in an accumulation of radiation. Multiparametric magnetic resonance imaging (mpMRI) may improve patient care through imaging of the bladder with better resolution of the tissue planes than computed tomography and without radiation exposure. Here we present our initial experience using mpMRI imaging in staging bladder cancer.

Materials & Methods: Patients first diagnosed with bladder cancer were addressed to trans-urethral resection (TURB). Before TURB, all patients underwent mpMRI of the bladder and pelvis. Histopathological findings were compared with radiological findings, in order to evaluate mpMRI accurancy in staging bladder cancer. The tumor with the largest burden was selected in those patients with multi-focal tumors. All mpMRIs were read by a single expert uroradiologist and histopathological specimens were also read by a single expert uropathologist. Receiver operating characteristics curves were used to evaluate the performance of mpMRI

Results: Twelve consecutive men diagnosed with badder cancer were enrolled in this prospective study, 11 of which with non muscle invasive bladder cancer and 1 with muscle invasive bladder cancer. Median age was 64.0 years (57.0-87.0 years). All the patients underwent preoperatively bladder mpRMN; subsequently, all patients underwent complete TURB with separate dispatch for histological exam of the underlying bladder wall. Histopatological findings were compared to preoperative radiological findings in order to assess the diagnostic accuracy of RMN in predicting the “T stage” of the tumor. Of twelve evaluated patients, in 9 cases (75%) radiological findings corresponded to histopathological findings, with no invasion of the muscolaris propria of the bladder wall. In 1 case mpMRI underestimated the T stage (cT1 that resulted in pT2); this case was confirmed at radical cystectomy specimen. Finally, in 2 cases (16%), mpMRI overestimated the T stage.

Conclusions: In our initial experience, our preliminary results indicate that mpMRI is suitable as a comprehensive tool for appropriate treatment planning for patients with bladder cancer. A drawing of an exact “bladder map” should be the goal of further studies, that are necessary in order to confirm and strengthen our preliminary data.