**PP-06**

Initial experience of 2nd look biopsy in patients on surveillance for positive and/or suspicious for cancer in the 1st look biopsy using image-based 3D mapping biopsy technology


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**Introduction:** To report the initial experience of 2nd look biopsy in patients on surveillance for positive and/or suspicious for cancer in the pathology of 1st look biopsy using image-based 3D mapping biopsy technology.

**Methods:** Retrospective review of 3D-image based mapping biopsy reports of all consecutive patients who were on surveillance for positive or suspicious pathology in the initial 3D mapping biopsy and then underwent 2nd look biopsy for surveillance using 3D image-based mapping biopsy technology (Urostation®, Koelis, France) during 2.5 years period (between July 2010 and Dec 2012).

In the 3D image-based mapping biopsy, spatial locations of each biopsy were digitally documented using 3D TRUS-image-based tracking technique, to document accurate localization of the biopsy-proven cancer or suspicious pathology (HGPIN or ASAP), allowing per-lesion based follow-up. In the 2nd look biopsy, biopsy location were determined by referring the 3D image of 1st look biopsy trajectories, and the trajectory of the 2nd look biopsy were overlaid on the previously documented 1st-look biopsy trajectories to confirm re-visiting accuracy. The final pathology of 1st look biopsy and 2nd look biopsy were compared in order to evaluate the potential progression of disease as well as precision of the surveillance technique using 3D-image based mapping biopsy.

**Results:** During the 2.5 years period, we identified total 10 consecutive patients who had both 1st look biopsy with cancer and/or suspicious pathology and 2nd look biopsy for the purpose of surveillance of the previously identified cancer and/or suspicious pathology using 3D image-based 3D mapping biopsy in our institution. All pathology of 2nd look biopsy involved at least cancer (Gleason 6, n=6; Gleason 7, n=1) and/or ASAP (n=3) (100%) without the pathology which had only benign prostate tissue (0%) in the 2nd look biopsy pathology. Out of 6 patients with Gleason 6 cancer in 1st look biopsy, 5 (83%) were again diagnosed as cancer (upgrade to Gleason 7, n=1; greater cancer length, n=2; stable, n=1; less cancer length, n=1) and one (17%) was ASAP in 2nd look biopsy. Out of 4 patients with HGPIN or ASAP, 2 (50%) were ASAP, and 2 (50%) were diagnosed as Gleason 6 cancer, respectively.

**Conclusion:** Re-visiting accuracy of 2nd look biopsy toward the previous cancer and/or suspicious lesion using image-based 3D mapping biopsy technology was encouraging. Image-based 3D mapping biopsy technology to allow digitalized geographical documentation of cancer and/or suspicious pathology in 3D space of the prostate would enhance per-lesion based management of prostate cancer.