

P013 MR-targeted high frequency TRUS guided biopsies: An alternative to fusion biopsy?

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Comud F.¹, Lefevre A.¹, Camparo P.²¹Clinique de l'Alma, Dept. of Radiology, Paris, France, ²Centre de Pathologie, Dept. of Pathology, Amiens, France

Introduction & Objectives: Clinically significant prostate cancer (csPCa) detection rate is improved by pre-biopsy MRI. MRI/ultrasound fusion biopsy shows some limitations in terms of procedure duration and lack of precision. In-bore MR-guided biopsy is not widely available. Very high frequency transrectal ultrasound (micro-ultrasound) could therefore compensate for these limitations.

Materials & Methods: 56 consecutive patients, average age 64+/-12yo with elevated PSA (range 2-200, median 8 ng/mL) presenting with biparametric MRI (bp-MRI) with PIRADS>2 focal lesions were included. Micro-ultrasound biopsy was performed using 29 MHz ExactVu system (Exact Imaging, Markham, Canada). MRI lesions visualized with micro-ultrasound (MRI+/MUS+ lesions) were targeted with micro-ultrasound guidance without any fusion. Fusion imaging was used to target MRI lesions that could not be visualized with micro-ultrasound (MRI+/MUS- lesions). Micro-ultrasound lesions not seen on MRI (MRI-/MUS+ lesions) were targeted using micro-ultrasound guidance. Any cancer with Gleason score ≥ 7 or cancer length >3 mm was considered csPCa.

Results: 58 MRI lesions were found in 56 patients including 52/58 (90%) of MRI+/MUS+ lesions. 19% (10/52) lesions had a PIRADS score of 3 and 20% (2/10) showed csPCa. 60% (31/52) were PIRADS 4 lesions and 68% of them were positive for csPCa. 21% (11/52) were PIRADS 5 lesions and csPCa was found in 91% of them. Among the MRI+/MUS- lesions, 4 were located in the peripheral zone and 5 had a PIRADS score of 3. csPCa was not found in the MRI+/MUS- group. 13 MRI-/MUS+ lesions were visualized. 31% (4/13) of them demonstrated csPCa, including 1 contralateral extension of index lesion and 3 remote nodules.

Conclusions: Micro-ultrasound showed ability to locate PIRADS>2 focal lesions suggesting it may be a reliable alternative to MRI/US fusion. MRI+/MUS- PIRADS 3 lesions being all negative for csPCa, micro-ultrasound may play a role in postponing biopsy in that case.