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Editorial Comments

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MR-US fusion biopsy unblinds the blind biopsy, and in this study Sonn et al have continued the process of validating image fusion for TRUS biopsy. MR ultrasound fusion guided biopsies provide more accurate needle localization than “blind” TRUS alone, and do not require the physical presence of a MR gantry. The MR-US fusion biopsy could soon become an important tool for certain patient populations. Clearly defined indications remain speculative, but could include T1c lesions, prior negative TRUS biopsy in the setting of an increasing PSA or lesions identified on MRI. However, standardization and reporting criteria for MR-US fusion are needed, especially to determine whether old criteria validated during the era of TRUS will remain true for MR-US.

However, significant hurdles remain to broad adoption. Reproducibility, indications, throughput, standardization and cost remain to be defined. MRI itself can be subjective and more standardized interpretations are needed. The system described by Sonn et al relies on a mechanical arm attached to ultrasound, while others have electromagnetic tracking, optical tracking and image based fusion. The best approach is yet to be determined.

Our group performed our first fusion guided biopsies on outpatients in the office setting in 2005 with optional mild oral sedation in approximately 15 minutes using electromagnetic tracking.^{1,2} Since then, we have performed MR-US fusion guided biopsy in more than 650 outpatients with more than 11,000 needle core locations. Although monitored anesthesia was used in an early cohort (101 patients), the majority have been outpatients without anesthesia, and with only lidocaine nerve blocks. The cancer detection rate markedly increased with the addition of MR-US fusion biopsy (reference 9 in article). MR-US fusion guided biopsy has great potential to supplement or replace “blind” TRUS prostate biopsies.

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