
Approaches for overcoming challenges of MRI-guided biopsy of prostate

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Introduction: Transrectal ultrasound-guided biopsy (TRUS) is characterized by low sensitivity (39-52%), particularly for second (15-20%) and third (8%) biopsy attempts. MRI-guided prostate biopsy has been proven to yield much higher tumor detection rate in this group of patients (59% as compared to 8-20% by repeated TRUS biopsy). Although the procedure is usually performed without difficulty, we have encountered various challenges during the procedure. The purpose of the poster is to describe approaches for overcoming challenges of MRI-guided prostate biopsy.

Materials and Methods: We present a gamut of patients with the combination of a negative ultrasound guided biopsy, persistently elevated or increasing PSA levels and suspicious findings at multiparametric prostate MRI who subsequently underwent MRI-guided prostate biopsy. Important approaches for overcoming challenges encountered during performance of the biopsies will be explained in detail and illustrated.

Result: Challenges include difficult patient positioning resulting in performing biopsy without the software support from the device, needle guide positioning, rectal stenosis, small lesion or difficult location of lesion in a large prostate, and lesion not depicted on T2WI at biopsy.

Conclusion: MRI-guided prostate biopsy is an effective, safe and well tolerated procedure for diagnosing prostate cancer, even though challenges during the procedure are encountered. Familiarity with the approaches for overcoming these challenges will help to improve positive yield at biopsy and to decrease procedure-related complications.