Clinical evaluation of synthetic aperture harmonic imaging for scanning focal malignant liver lesions - DTU Orbit (07/01/2019)

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The purpose of the study was to perform a clinical comparison of synthetic aperture sequential beamforming tissue harmonic imaging (SASB-THI) sequences with a conventional imaging technique, dynamic receive focusing with THI (DRF-THI). Both techniques used pulse inversion and were recorded interleaved using a commercial ultrasound system (UltraView 800, BK Medical, Herlev, Denmark). Thirty-one patients with malignant focal liver lesions (confirmed by biopsy or computed tomography/magnetic resonance) were scanned. Detection of malignant focal liver lesions and preference of image quality were evaluated blinded off-line by eight radiologists. In total, 2,032 evaluations of 127 image sequences were completed. The sensitivity (77% SASB-THI, 76% DRF-THI, p = 0.54) and specificity (71% SASB-THI, 72% DRF-THI, p = 0.67) of detection of liver lesions and the evaluation of image quality (p = 0.63) did not differ between SASB-THI and DRF-THI. This study indicates the ability of SASB-THI in a true clinical setting.

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