Dokumenttyp: journal article

Autor(en) des Beitrags: Vag, T; Baltzer, PA; Dietzel, M; Zoubi, R; Gajda, M; Camara, O; Kaiser, WA

Titel des Beitrags: Kinetic analysis of lesions without mass effect on breast MRI using manual and computer-assisted methods.

Abstract: To analyse the kinetic characteristics of lesions without mass effect in dynamic breast MRI using manual and computer assisted methods. The enhancement pattern of 82 histopathologically verified lesions without mass effect (36 malignant, 46 benign) was evaluated on breast MRI using manual placement of a region of interest. Commercially available computer analysis software automatically assessed volume enhancement characteristics of a lesion voxelwise. Kinetic features evaluated included classification of the signal-intensity time curve as washout, plateau or persistent enhancement. Unlike manual ROI placement, computer-aided analysis demonstrated a significant difference in enhancement pattern between benign (washout: 32.6%, plateau: 32.6%, persistent: 34.8%) and malignant lesions without mass effect (77.1%, 8.6%, 14.3% respectively, $P<0.01$, two-sided Chi-squared test) following initial rapid signal increase. Mean percentage of washout voxel volumes within a lesion was significantly higher in malignant lesions than in benign lesions (11.9% +/-12.7 (SD) vs. 6.9% +/-11.3 (SD), $P<0.01$, Mann-Whitney U Test). Conversely, the mean percentage of persistent voxel volumes was significantly lower in malignant lesions than in benign lesions (60.1% +/-21.1 (SD) vs. 79% +/-23 (SD), $P<0.01$, Mann-Whitney U Test).
enhancement pattern analysis might have diagnostic benefit in the evaluation of lesions without mass effect.