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Titel des Beitrags:
Novel Metal Artifact Reduction Techniques with Use of Slice-Encoding Metal Artifact Correction and View-Angle Tilting MR Imaging for Improved Visualization of Brain Tissue near Intracranial Aneurysm Clips.

Abstract:
The MR image quality after intracranial aneurysm clipping is often impaired because of artifacts induced by metal implants. The purpose of the present study was to evaluate the benefit of a new WARP sequence with slice-encoding metal artifact correction (SEMAC) and view-angle tilting (VAT) MR imaging as novel artifact reduction techniques. A new WARP TSE (a work-in-progress software package provided by Siemens Healthcare) sequence was implemented for cranial applications based on a turbo spin echo (TSE) sequence. T1- and T2-weighted images with standard and WARP TSE sequences were acquired from 6 patients with 11 clipping sites, and the images were compared based on artifact size and general image quality. T2- and T1-weighted WARP TSE sequences resulted in a highly significant reduction of metal artifacts compared with standard sequences (T2w-WARP TSE: 89.8 ± 1.4 %; T1w-WARP TSE: 84.9 ± 2.9 %; p < 0.001) without a substantial loss of image quality. The use of a new WARP TSE sequence after aneurysm clipping is highly beneficial for increasing the diagnostic MR image quality due to a striking reduction of metal artifacts.

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