

## عنوان مقاله:

Is correction for metallic artefacts mandatory in cardiac SPECT/CT imaging in the presence of pacemaker and implantable cardioverter defibrillator leads

## محل انتشار:

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## خلاصه مقاله:

Introduction: Metallic artifacts due to pacemaker/ implantable cardioverter defibrillator (ICD) leads in CT images can produce artifactual uptake in cardiac SPECT/CT images. The aim of this study was to determine the influence of the metallic artifacts due to pacemaker and ICD leads on myocardial SPECT/CT imaging. Methods: The study included 9 patients who underwent myocardial perfusion imaging (MPI). A cardiac phantom with an inserted solid defect was used. The SPECT images were corrected for attenuation using both artifactual CT and CT corrected using metal artifact reduction (MAR). VOI-based analysis was performed in artifactual regions. Results: In phantom studies, mean-of-relative-difference in white-region, between artifact-free attenuation-map without/with MAR were changed from 9.2 and 2.1 to 3.7 and 1.2 for ICD and pacemaker lead, respectively. However, these values for typical patient were  $9.7 \pm 7.0$  and  $3.8 \pm 2.4$  for ICD and pacemaker leads respectively, in white-region. MAR effectively reduces the artifacts in white-regions while this reduction is not significant in black-regions. Conclusion: Following application of MAR, visual and quantification analyses revealed that while quality of CT images were significantly improved, the improvements in the SPECT/CT images were not as pronounced or significant. Therefore cardiac SPECT images corrected for attenuation using CT in the presence of metallic-leads can be interpreted without correction for metal artifacts.

## کلمات کلیدی:

Cardiac SPECT/CT, Metal artifact reduction, Virtual sonogram, Pacemaker, ICD

لینک ثابت مقاله در پایگاه سیویلیکا:

