New hybrid reformations of peripheral CT angiography: do we still need axial images?

Ruediger Egbert Schernthaner, Florian Wolf, Gabriel Mistelbauer, Michael Weber, Milos Sramek, Eduard Groeller, Christian Loewe

Abstract

Purpose
To quantify the detectability of peripheral artery stenosis on hybrid CT angiography (CTA) reformations.

Methods
Hybrid reformations were developed by combining multipath curved planar reformations (mpCPR) and maximum intensity projections (MIP). Fifty peripheral CTAs were evaluated twice: either with MIP, mpCPR and axial images or with hybrid reformations only. Digital subtraction angiography served as gold standard.

Results
Using hybrid reformations, two independent readers detected 88.0% and 81.3% of significant stenosis, respectively. However, CTA including axial images detected statistically significant more lesions (98%).

Conclusion
Peripheral CTA reading including axial images is still recommended. Further improvement of these hybrid reformations is necessary.

Keywords
Peripheral arterial occlusive disease; CT angiography; Three-dimensional reformations; Postprocessing

Corresponding author. Section of Cardiovascular and Interventional Radiology, Department of Biomedical Imaging and Image-guided Therapy, Medical University of Vienna, Währinger Gürtel 18-20, 1090 Vienna, Austria. Tel.: +43-1-40400-58020; fax: +43-1-40400-58300. Copyright © 2015 Elsevier Inc. All rights reserved.
New hybrid reformations of peripheral CT angiography: do we still nee...