Abstract Title:	Comprehensive assessment of peripheral arteries using multi-path curved planar reformation of CTA datasets
Author Block:	A. <u>Koechl</u>, A. Kanitsar, F. Lomoschitz, E. Groeller, D. Fleischmann; *Vienna/AT*
Presentation#/Poster#:	B-0635
Presentation Start/End Time:	Monday, Mar 10, 2003, 9:06 AM -

Purpose: To assess the diagnostic efficiency of multi-path curved planar reformations (mpCPR), a new image post-processing technique for peripheral CT angiography.

Methods and Materials: Five patients with peripheral arterial occlusive disease underwent lower extremity CT angiography (3 mm section thickness, 1 mm reconstruction interval). mpCPRs were generated by semi-automated vessel-tracking through the peripheral arterial tree (one aortic start point, six peripheral end points) and the subsequent automated generation of 21 composite views (over a 180° range), which simultaneously display curved planar reformations through each of the multiple paths, respectively. For comparison, 21 MIP images were also generated. For each vascular segment (aorta, iliac, femoro-poplitel, crural), the assessability of the flow lumen was determined by two readers in consensus, and compared to the visibility of the flow lumen in MIP images.

Results: The generation of mpCPRs required 5 to 15 minutes of user interaction. Multi-path CPRs displayed unobstructed views of the wall and flow-channels of the aorta, the iliac, and the femoro-popliteal arteries. Despite the crural arteries being partially obscured in extreme viewing angles, the flow lumen was always assessable in mpCPR series. The flow channel could not be reliably assessed with MIP images alone in 3/10 iliac arteries, in 4/10 femoro-popliteal arteries, and in 8/30 crural arteries.

Conclusion: Multi-path CPR allows a complete assessment of the peripheral arterial tree without the need to additionally analyze the original thin-collimation transverse images. This may substantially reduce the enormous volume of data for image networking and archiving in the future.