Value of C-arm perfusion CT to validate angiosom-guided revascularization
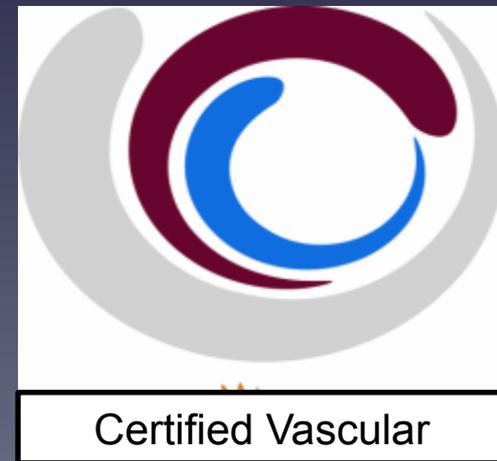
Peter Huppert

Prof. of Radiology and Neuroradiology
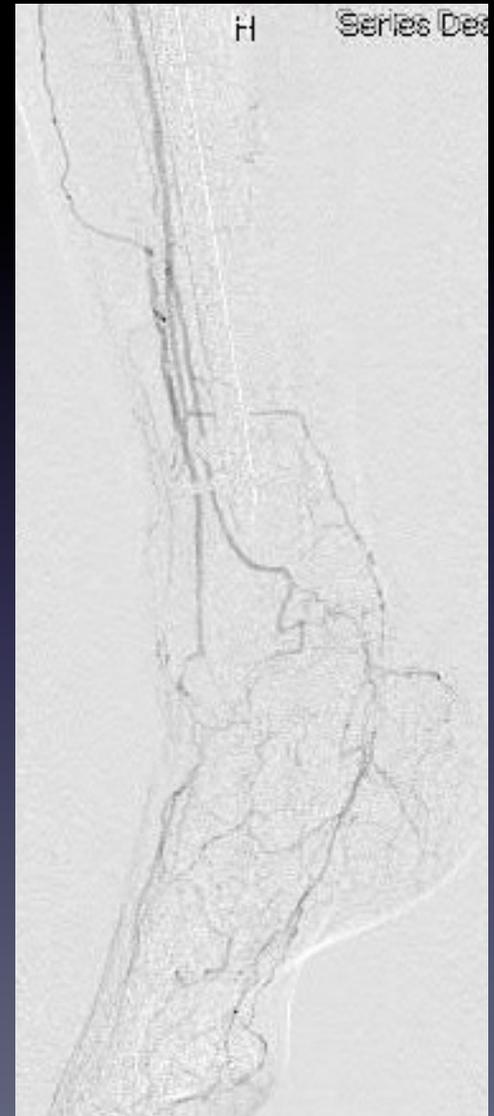
Klinikum Darmstadt

Certified Vascular

Angiosome-guided RV

- Proven anatominal base

- In cadavers without arterial occlusions

- No RCT comparing direct vs. indirect RV

- Significant number of lesions overlapping angiosomes
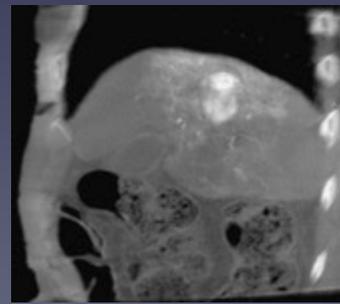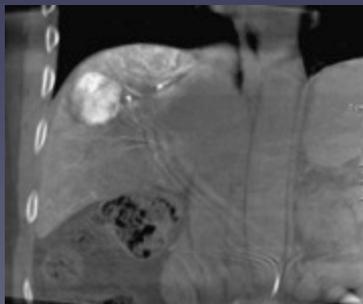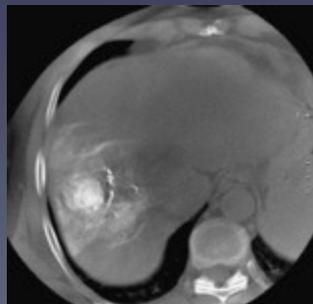
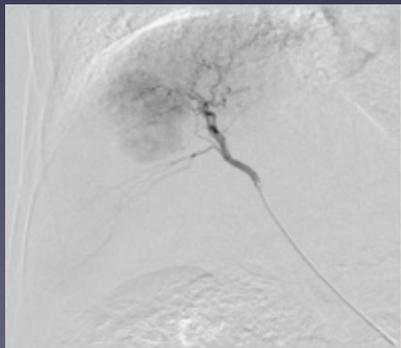# Angiosome-guided RV

- Proven anatominal base
- In cadavers without arterial occlusions

- No RCT comparing direct vs. indirect RV

- Significant number of lesions overlapping angiosomes

C-Arm-CT („Dyna-CT")

- Based on FP-technology

- Digital 3d Image acquisition

- 270-dgr rotation (8 sec)

- Reconstr. of CT images

- 3 D images and MPR

- Perfusion imaging with CM

Applications:
- interv. oncol.
- interv. neuro.

Aims of Work in Progress-Study

- Perfusion imaging of the foot before and after interventional revascularization in pts. with Rutherford 4 and 5 lesions

- Visual and semiquantitative analysis of tissue perfusion

Methods

- Catheter position in popliteal artery

- Contrast injection 4-6 cc/sec

- Imaging delay 8-12 sec

- Acquisition parameters adapted to small volumes
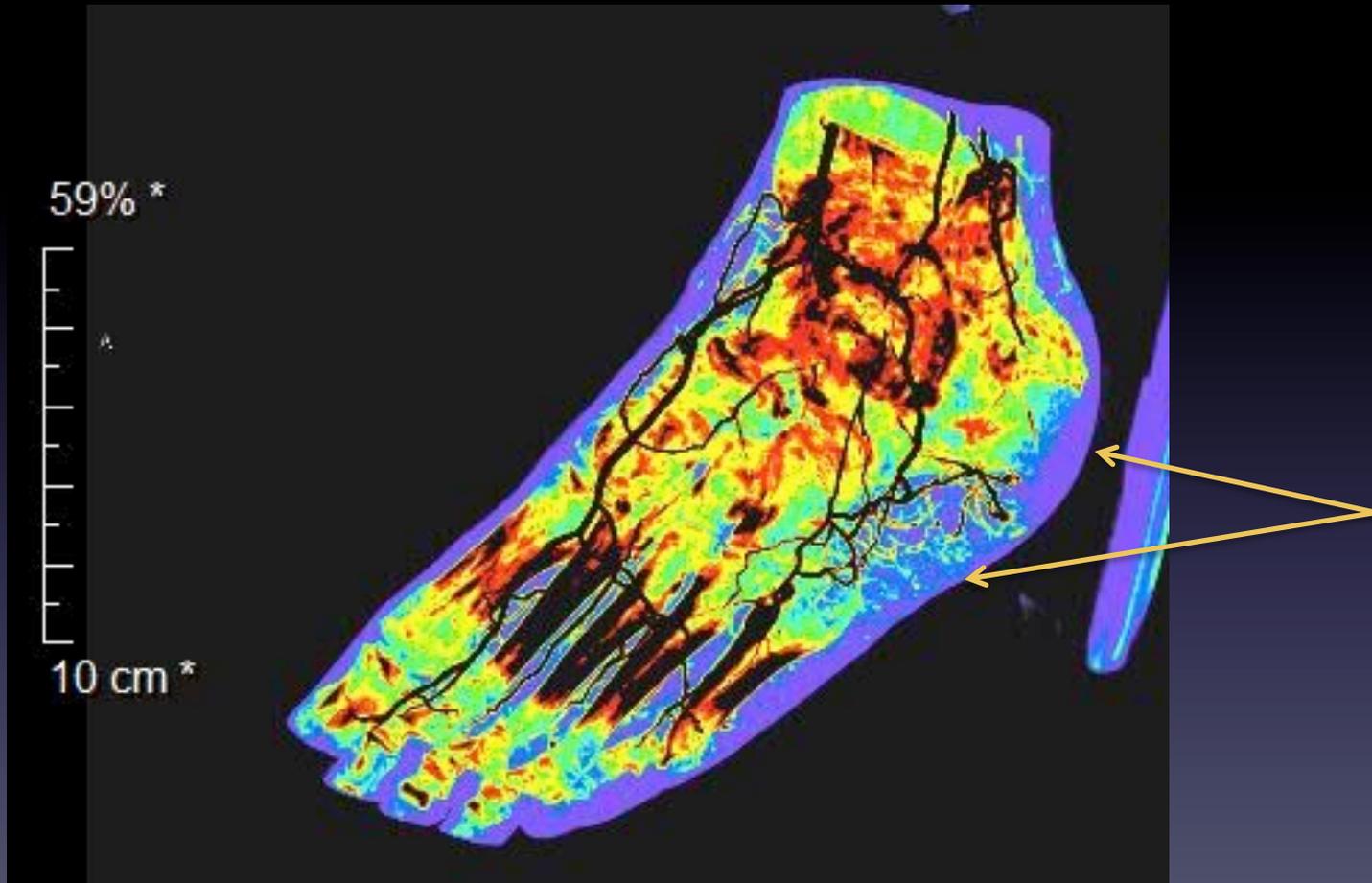
- 6 patients

Results
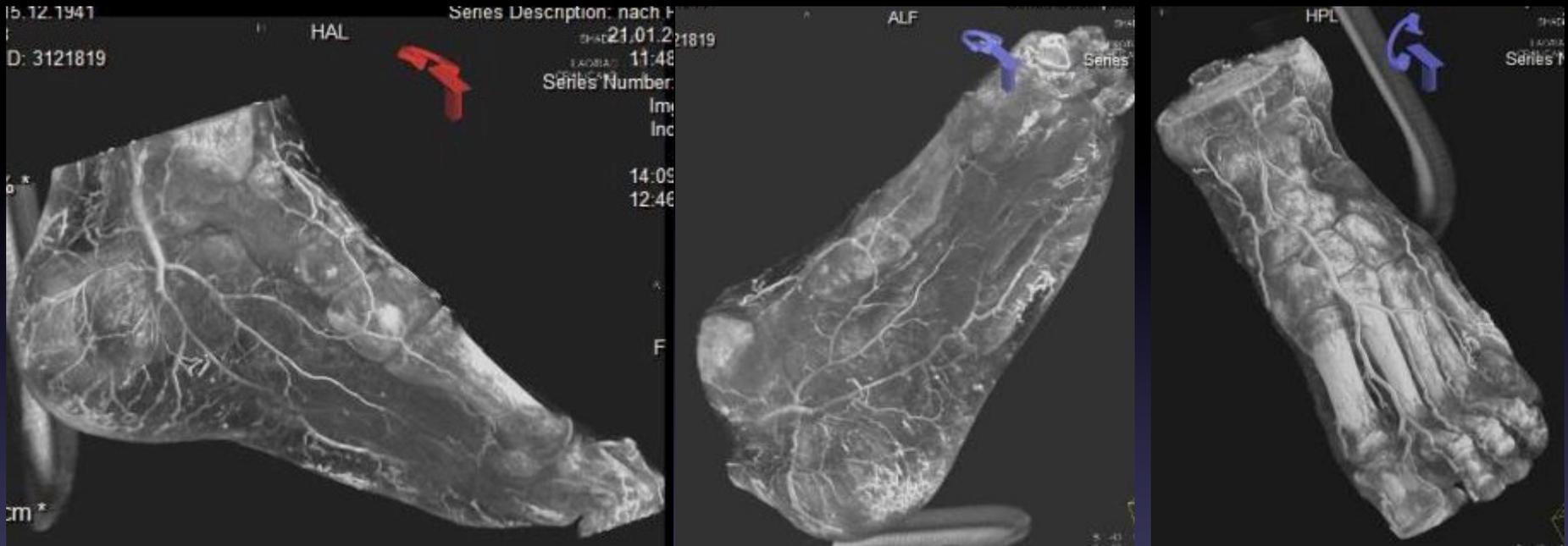
- 3 D Perfusion Imaging of the foot is possible
- Variable reconstructions in all planes
- Tissue imaging and artery imaging can be matched
- High resolution imaging of small arteries
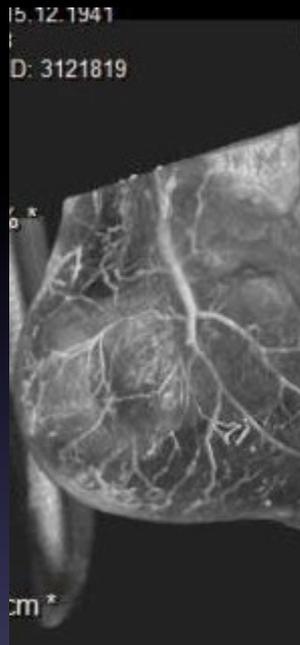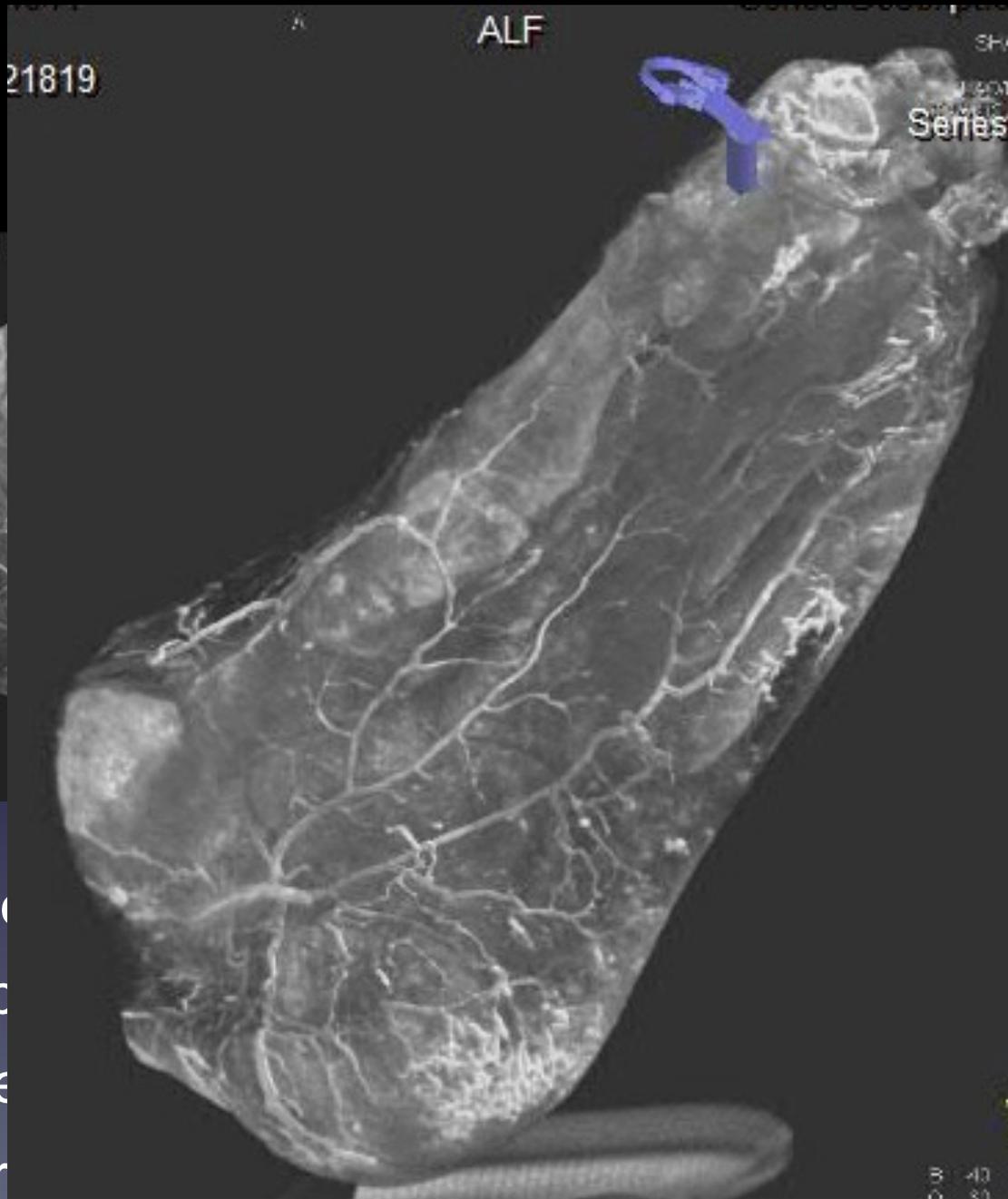
- 3 D Po
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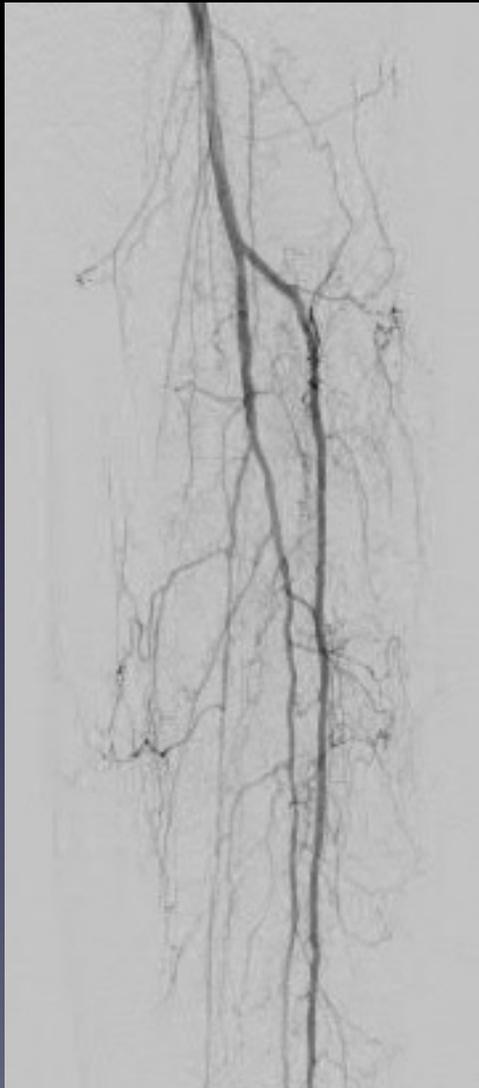- Tissue   atched
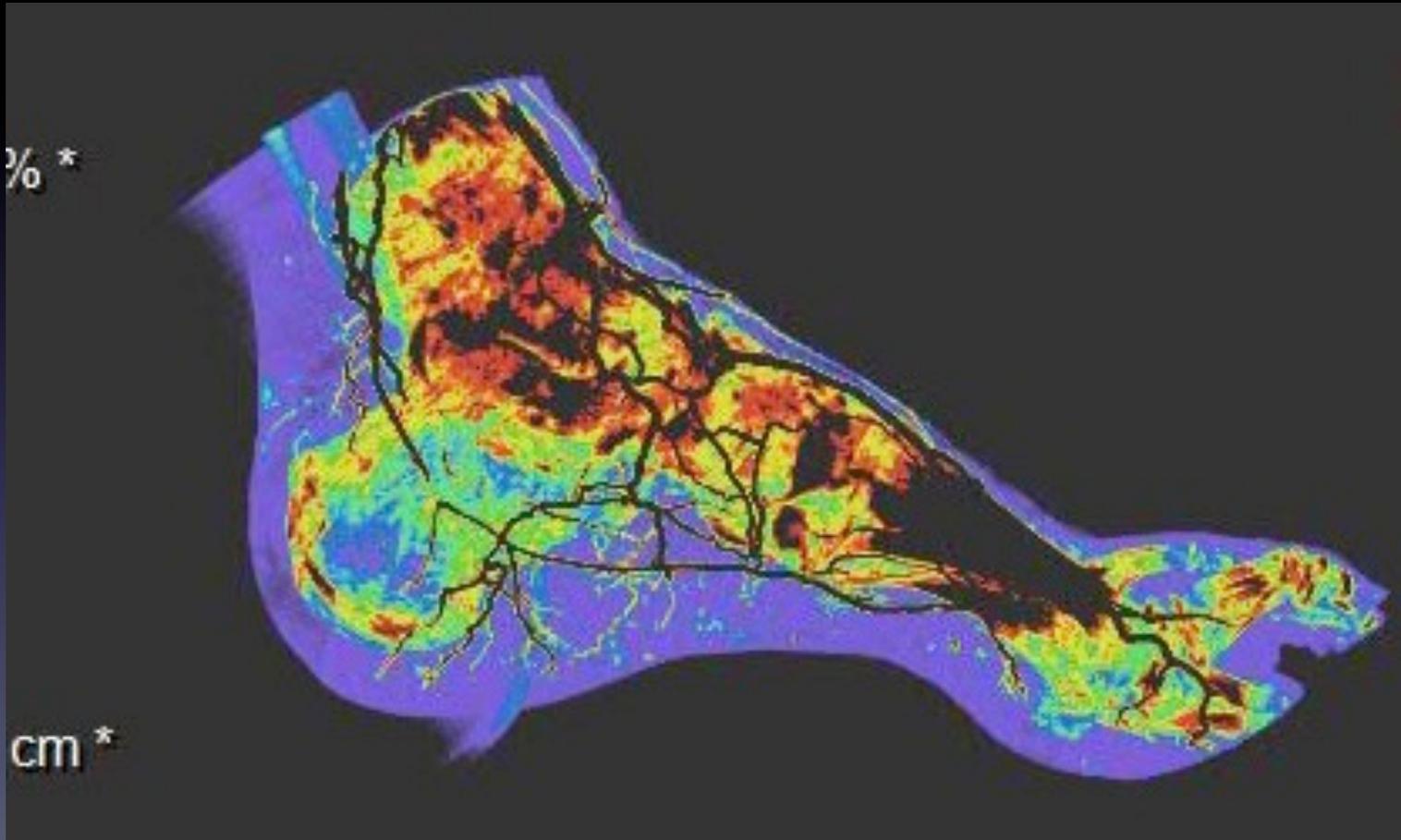- High r

Results

- Colour-coded semiquantification of perfusion possible
- Correlation of perfusion deficit and related artery is visualized
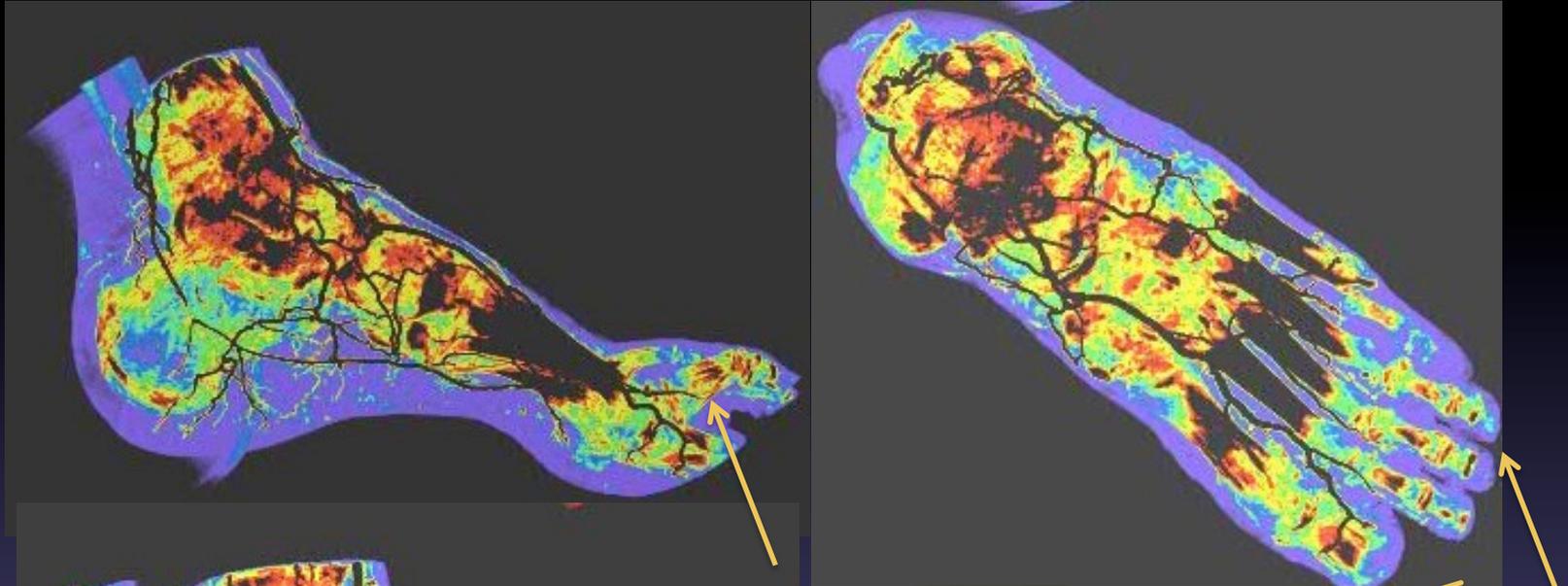
Rutherford V lesion D1-3

Recanalization of ATA or PTA?

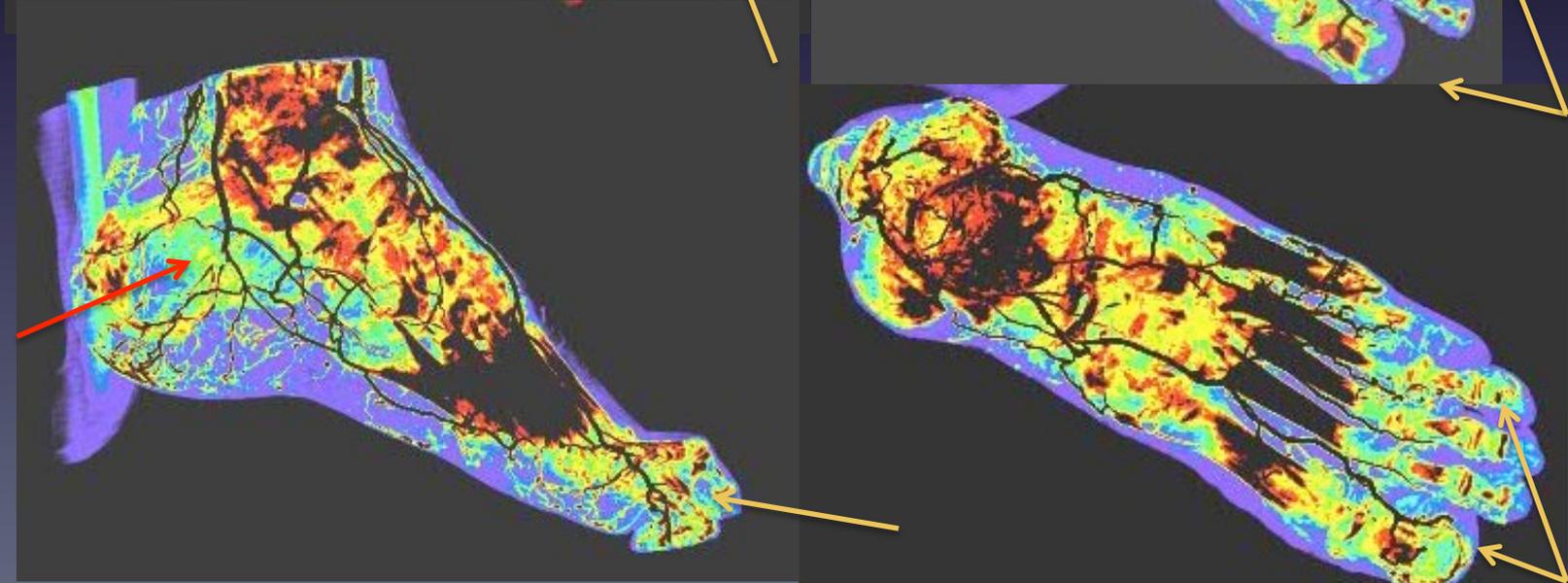# Rutherford V lesion D1-3

Rutherford V lesion D1-3

before

after

Preliminary conclusions

- 3D perfusion imaging of the pedal tissue and pedal arteries by C-arm CT is feasible.

- Potential role during RV in selected cases:
  - look behind the surface into deep tissue
  - correlation of target artery and target tissue
  - is improvement after recanalization of the 1st artery sufficient?