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

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Angiosome-guided RV

- Proven anatomical base
- In cadavers without arterial occlusions
- No RCT comparing direct vs. indirect RV
- Significant number of lesions overlapping angiosomes
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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
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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?