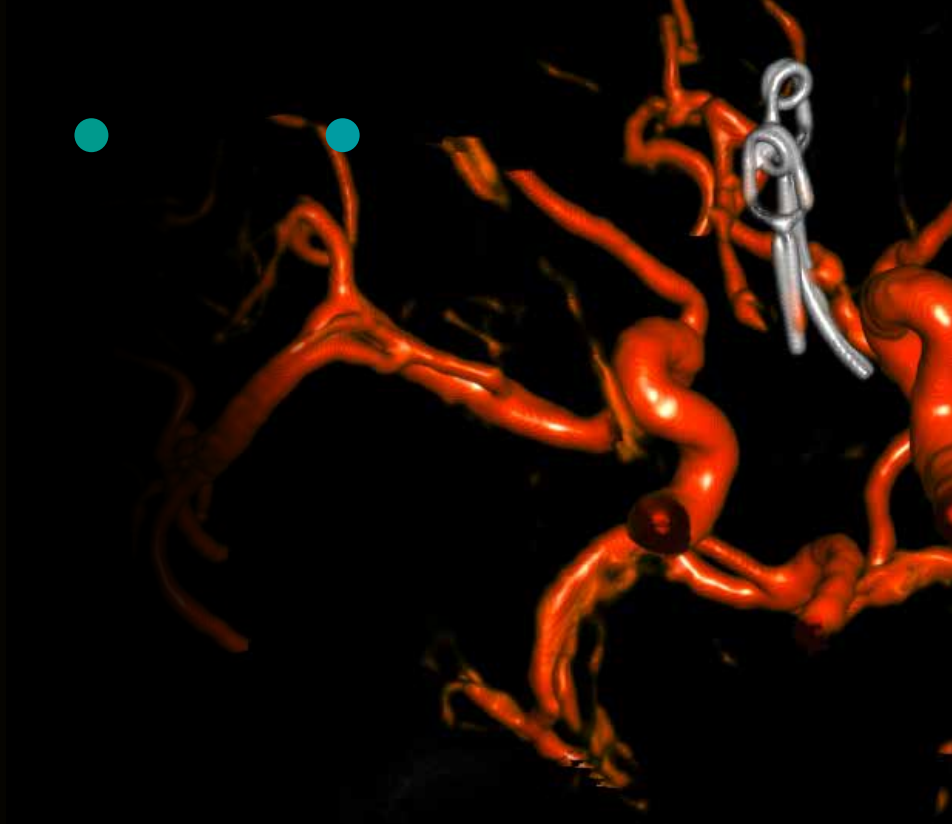

Study Protocol

Visualization of clipped aneurysm

Neuro Interventions

DynaCT with intravenous contrast injection is a fast and easy procedure for non-invasive arterial imaging.

Courtesy of
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Supported by
syngo DualVolume
syngo DynaCT DSA

System & Software
Artis zeego, VC21
syngo X-Workplace, VB21

Case Description

Patient history
Patient hemorrhaged from a giant ACom aneurysm. Urgent admission and surgery was performed the next day.

Diagnosis
Giant aneurysm of the ACom artery. Acute subarachnoid hemorrhage from the aneurysm, Hunt-Hess II.

Treatment
Acute craniotomy with intra-intracranial anastomosis A2-A2 and aneurysm clipping.

General comments
DynaCT with intravenous contrast injection is a fast and easy procedure for non-invasive arterial imaging. Intraoperative imaging of cerebral vessels allows neurosurgeons to visualize the effectiveness of clipped aneurysms and patency of bypasses immediately after the surgery.

Tips and tricks
The injection of the iodine contrast takes place directly after the mask run. We observe the contrast bolus using DSA. As soon as the carotid artery is filled with contrast, we start the robotic C-arm rotation around the patient's head. The head is held in position with fixing straps to reduce patient movement during 3D acquisition. *syngo* DynaCT acquired in Zoom 1 (42 cm) delivers better resolution due to the smaller voxel size compared to *syngo* DynaCT in Zoom 0 (48 cm), and results in better and more detailed visualization of the clips and vessels.

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Visualization of clipped aneurysm

Acquisition protocol	10s DSA DCT Head, zoom 42 cm

Injection protocol	
Catheter position	Cubital vein 18 g
Contrast medium (CM)	370 mg iodine/mL
Dilution (CM/Saline):	No
Injection volume	100 mL
Injection rate	5 mL/s
Duration of injection	20 s
X-ray delay	DSA bolus tracking
Power injector used	Yes

Reconstructions	Primary	Secondary
Name	DynaCT Head NatFill HU Normal HU	DynaCT Head Sub MoCo HU Very smooth
VOI size	Full	Full
Slice matrix	512 × 512	512 × 512
Kernel type	HU	HU
Image characteristics	Auto	Very smooth
Reconstruction mode	NatFill	Sub with MoCo (motion correction algorithm)
Viewing preset	Dual Volume 2	Dual Volume 2

Clinical Images

Figure 1: Clipped aneurysm. Intra-intracranial anastomosis A2-A2 with retrograde filling of right A2 vessel (secondary reconstruction)

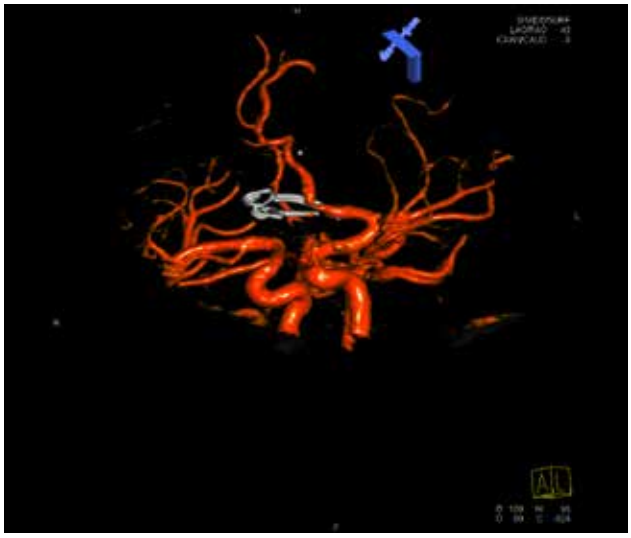

Figure 2: 3D visualization of the clipped aneurysm (secondary reconstruction)

Figure 3: Transversal MIP with vessels and clips (primary reconstruction)

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