Study Protocol

Follow-up of aneurysm clipping using *syngo* DynaCT with IV injection

Neuro Interventions

The *syngo* Dyna4D clearly showed how slow the inflow of blood into the aneurysmal structure had become after flow diverter placement, confirming the expected effect.

Courtesy of
Prof. Peter Mitchell, MD,
Department of Radiology,
The Royal Melbourne Hospital,
Melbourne, Australia

Supported by
syngo DynaCT DSA
syngo DualVolume

System & Software
Artis Q biplane VD11,
syngo X Workplace with
syngo Application Software
VD11

Case Description

Patient history
Past history of anterior communicating artery clipping (13 years ago), with subsequent elective middle cerebral artery embolization. Small bleb-like aneurysm adjacent to tip of aneurysm clips on DSA.

Diagnosis
Intracranial aneurysms at both the anterior communicating and middle cerebral arteries. Small bleb-like aneurysm for assessment.

Treatment
Clip occlusion > 10 years ago, routine follow-up showed small new bleblike aneurysm on DSA. Difficult to identify on MRA. *syngo* DynaCT with intravenous contrast injection in DualVolume mode offered less invasive imaging, able to exclude growth into a true saccular aneurysm, and allowed ongoing surveillance without repeat DSA.

Tips & Tricks
- Once the injector is armed, set the 3D protocol to manual mode (injection starts automatically after returning from mask spin)
- Start acquiring the fill run when the carotid artery is displayed on the bolus watch (approx. 8–15 sec)
- Head positioning: symmetrical patient head positioning with strap fixing to reduce patient movement during both spins

General comments
When alternative non-invasive arterial imaging is limited, due to dense coil and stent packing, or certain types and numbers of clips, *syngo* DynaCT with intravenous contrast injection in DualVolume mode offers a technique that is less impacted by these artifacts, particularly when the clinical area of sus-picion is at the base of the previously treated aneurysm.

SIEMENS Healthineers

Follow-up of aneurysm clipping using *syngo* DynaCT with IV injection

Acquisition protocol	**10s DSA DCT Head**

Injection protocol	
Catheter position	IV injection antecubital vein 18 g cannula
Contrast medium (CM)	350 mg iodine/mL
Test bolus	No
Dilution	No
Injection volume	96 mL
Injection rate	8 mL/s
Duration of injection	12 s
X-ray delay	DSA bolus tracking
Power injector used	Yes

Reconstructions	**Primary**	**Secondary**
Name	DynaCT DSA Dual Head (reconstructs nat fill, nat mask + sub volume)	DynaCT DSA Dual Head
VOI size	Full (nat fill volume)	Medium (nat mask + sub volume)
Slice matrix	512 × 512	512 × 512
Kernel type	HU (nat fill + nat mask volume)	EE (sub volume)
Image characteristics	Auto	Auto
Reconstruction mode	Vasc head	Vasc head
Viewing preset	Dual Volume 2	Dual Volume 2

Clinical Images

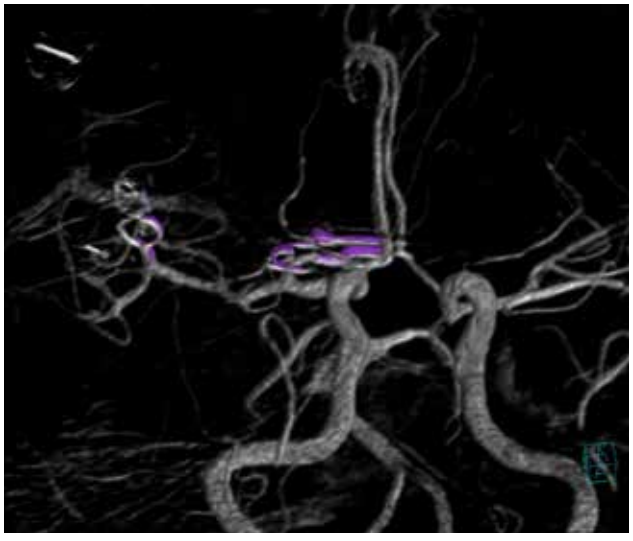

Figure 1: *syngo* DualVolume visualization of vessels and clips

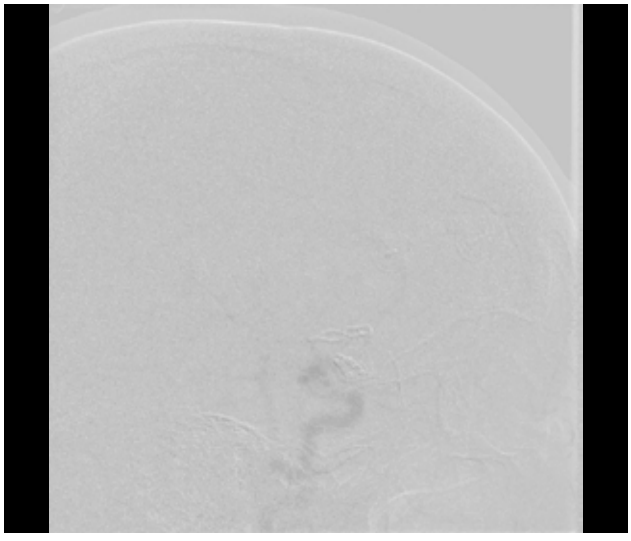

Figure 2: Bolus watching phase for second spin

Clinical Images

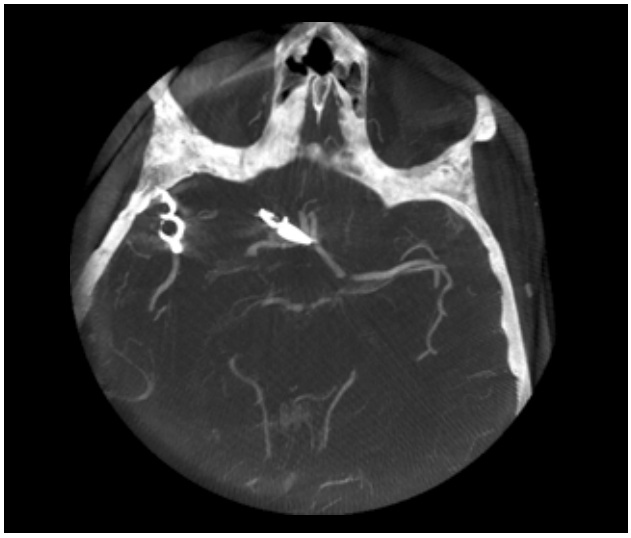

Figure 3: Transversal MIP 5 mm

Siemens Healthineers Headquarters
Siemens Healthcare GmbH
Henkestr. 127
91052 Erlangen, Germany
Phone: +49 9131 84-0
siemens-healthineers.com

Published by Siemens Healthcare GmbH · AT 4672-04 0720 digital · ©Siemens Healthcare GmbH, 2020