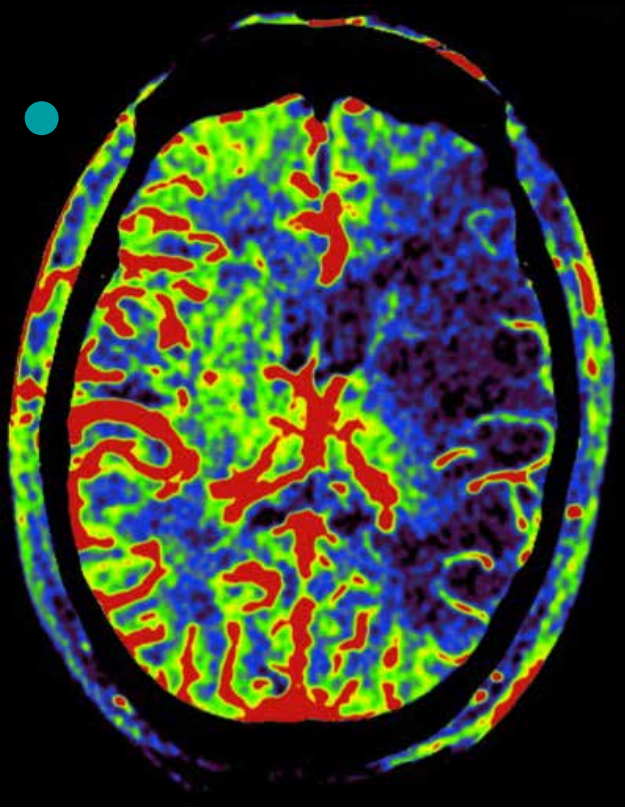
Study Protocol

# Mechanical thrombectomy of left MCA occlusion

Interventional Neuroradiology



The individual X-ray delay for *syngo* Neuro PBV IR can be analyzed by *syngo* iFlow.

**Courtesy of**
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**Supported by**
*syngo* DynaCT
*syngo* Neuro PBV IR
*syngo* iFlow

**System & Software**
Artis zee biplane VC14
*syngo* X Workplace VB15

## Case Description

**Patient history**
A 67-year-old man presented with symptoms of acute right hemiplegia of less than 6 hours duration since onset. The patient was taken to CT immediately to exclude hemorrhage with native CT.

**Diagnosis**
Left middle cerebral artery (MCA) occlusion. Noncontrast CT demonstrated a hyperdense MCA sign and excluded intracranial hemorrhage. Flat-detector CT (FDCT) angiography demonstrated the total occlusion of left MCA. A parenchymal cerebral blood volume (*syngo* Neuro PBV IR) map depicted a large area of hypoperfusion in the corresponding left MCA territory, which was similar to the results of multidetector CT perfusion imaging (not shown). After intra-arterial mechanical thrombectomy, recanalization of the left MCA was demonstrated by FDCT angiography. A *syngo* Neuro PBV IR map depicted the recovery of CBV values in part of the hypoperfused parenchyma after revascularization.

**Treatment**
Revascularization with intra-arterial approach. MCA occlusion could be successfully reopened.

**General comments**
By combining C-arm rotational acquisition with intraarterial contrast medium injection from the aortic arch, we can obtain
(1) non-contrast *syngo* DynaCT,
(2) a three-dimensional volume of intracranial vasculature (*syngo* DynaCT reconstruction of fill run), and
(3) a *syngo* Neuro PBV IR map.

**Related publication**
BioMed Research International
Volume 2013, Article ID 873614,
7 pages
http://dx.doi.org/10.1155/2013/873614

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| Acquisition protocol | 8s Neuro PBV IR |
|---|---|

| Injection protocol | |
|---|---|
| Catheter position | Aortic arch 4 F pigtail catheter |
| Contrast medium (CM) | 340 mg iodine/mL |
| Dilution | 50 % |
| Injection volume | 85 mL |
| Injection rate | 5 mL/s |
| Duration of injection | 17 s |
| X-ray delay | Individually analyzed with *syngo* iFlow Tmax = 9 seconds for this patient in the superior sagittal sinus |
| Power injector used | Yes |

| Reconstructions | Primary | Secondary |
|---|---|---|
| Name | Neuro PBV HU Smooth | DynaCT Head Nat Fill HU[1] |
| VOI size | Full | |
| Slice matrix | 512 × 512 | |
| Kernel type | HU | HU |
| Image characteristics | Smooth | Normal |
| Reconstruction mode | Neuro PBV | Nat fill |
| Viewing preset | Neuro PBV | DynaCT Head |

## Clinical Images

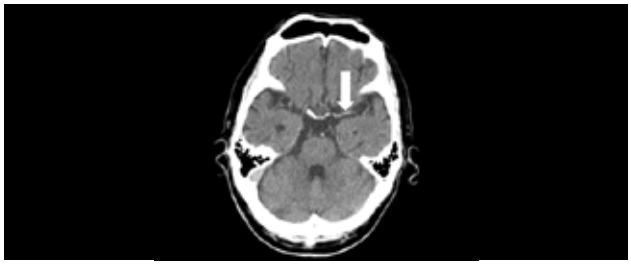

Figure 1: Noncontrast CT demonstrated a hyperdense MCA sign (arrow) and excluded intracranial hemorrhage

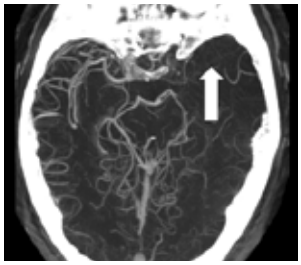

Figure 2: Thick MIP FDCT angiography demonstrated the total occlusion of left MCA (arrow)

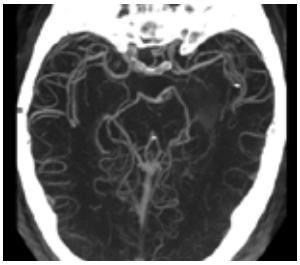

Figure 3: Thick MIP After intra-arterial mechanical thrombectomy, recanalization of the left MCA was demonstrated by FDCT

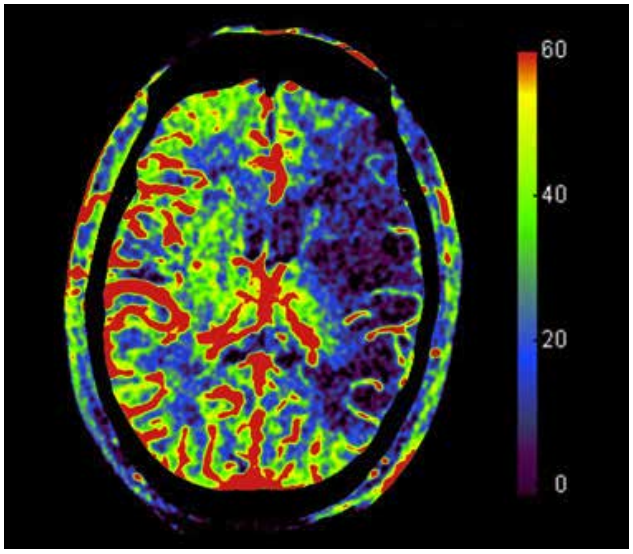


Figure 4: A parenchymal cerebral blood volume (*syngo* Neuro PBV IR) map depicted a large area of hypoperfusion in the corresponding left MCA territory

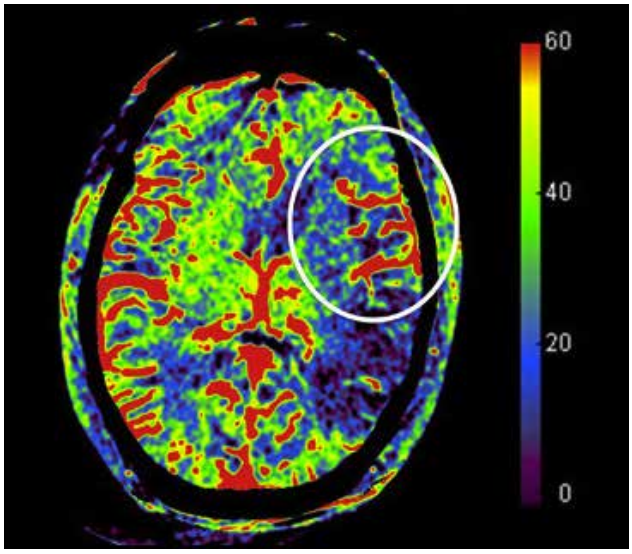


Figure 5: A *syngo* Neuro PBV IR map depicted the recovery of CBV values (circle) in part of the hypoperfused parenchyma after revascularization

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