# **Stroke: MCA occlusion**



Prof. Robert W. Tarr, University Hospitals Case Medical Center Cleveland - OH - USA

## **Patient history**

This patient is a 54 year old African American man with a past medical history significant for hypertension, diabetes (non compliant with medical care), renal failure (GFR 30), obesity, and hepatitis A and C who was found laying on his couch with dense left hemiparesis and dysarthria.

The patient was taken to an outside hospital and received a noncontrast CT of the head prior to transfer to our hospital. Upon presentation, the patient was noted to have a NIH stroke scale of 17 with partial gaze palsy, complete homonymous hemianopsia, left upper and lower neuron facial droop, dense left hemiparesis with no significant movement against gravity, dysarthria, and partial neglect.



Non contrast CT prior to transfer

### **Imaging Findings**

On initial inspection of the DWI sequence, there was concern about the size of the core infarct. The Olea Medical® software assisted in quickly quantifying the size of the core infarct, and the lesion definition, coupled with the delayed perfusion imaging helped to determine the ischemic penumbra. These were readily interpretable in real time with the CBF, CBV, and MTT maps to provide some certainty to the results.

The Olea Medical<sup>®</sup> software helped to determine that a significant amount of brain tissue was still potentially salvageable. Therefore, in light of the size of the mismatch and despite the length of time since onset, the patient was taken for angiography and mechanical intervention with the MERCI retrieval system and the Penumbra reperfusion system 10 hours after last seen normal; Metformin 850 mg po TID, and Simvastatin 40 mg po daily.



DWI and MRA series



PWI series



Determination of ischemic penumbra



Processing version #2

PRE

POST



Pre and Post MRA

## Discussion

Recanalization of the middle cerebral artery was achieved with a single focal M4 branch residual occlusion. The patient made a significant recovery during his hospitalization of 7 days and was eventually discharged to an acute rehabilitation facility with a NIH stroke scale of 5 (mild left upper extremity and lower extremity drift, mild facial droop). Discharge medications: Aspirin 81mg po daily, Celexa 10 mg po daily, Glipizide 5mg po TID, Heparin 5000 units SQ q8h, Lisinopril 10mg po daily, Metformin 850 mg po TID, and Simvastatin 40 mg po daily.

#### OLEA MEDICAL®

#### www.olea-medical.com

Olea Sphere<sup>®</sup> v3.0, medical imaging post-processing software, is a medical device manufactured and marketed by Olea Medical<sup>®</sup>. This medical device is reserved for health professionals. The software has been designed and manufactured according to the EN ISO 13485 quality management system. Read the instructions in the notice carefully before any use.

Instructions for Use are available on http://www.olea-medical.com/en/ Manufacturer: Olea Medical®S.A.S. (France). Medical devices Class IIa / Notified body: CE 0459 GMED.

