Patient with right sided weakness and aphasia

**PATIENT PRESENTATION**

- 85 year old female with history of atrial fibrillation brought in by ambulance after being found sitting slumped in driver’s seat of car for 1.5 hours. On evaluation, the patient had right sided weakness, mutism and visual disturbance. The NIHSS* was 17 on arrival in the emergency room. The patient is urgently taken to CT scanner for further evaluation.

*National Institute of Health Stroke Scale

**EVALUATION AND IMAGING**

- Non-contrast head CT and CT angiogram (CTA) (Figure 1), CT perfusion (CTP) (Figure 2) show no significant hypodensity with MCA* proximal occlusion and with perfusion showing a large volume (58ml) of at risk tissue.

*Middle Cerebral Artery

**INTERVENTION PERFORMED**

- Given the large volume of tissue at risk, intervention was deemed warranted. Angiogram of the left internal carotid artery (ICA) confirmed middle cerebral artery (MCA) occlusion (Figure 3). The Solitaire Flow Restoration device (Figure 4) was deployed in the left MCA for clot retrieval.

*Non-contrast CT scan of the head (A) shows no bleeding and no significant hypodensity in the left hemisphere. CT angiogram study of the brain (B) shows left MCA occlusion (arrow).

*CT perfusion study evaluated with automated software shows injured brain tissue volume of less than 1 ml with at risk tissue volume of 58 ml.
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**INTERVENTION PERFORMED (CONTINUED)**

- Post retrieval angiogram of the left ICA shows complete recanalization of the MCA vessels (Figure 3B). The time interval from arrival in the emergency room to recanalization was 100 min.

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**PATIENT OUTCOME**

- Neurologic examination the following day was back to baseline with the NIHSS=0. The patient was discharged home after 4 days of hospitalization.

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**DISCUSSION**

In 2015, five randomized trials showed efficacy of endovascular thrombectomy over standard medical care in patients with acute ischemic stroke caused by occlusion of arteries of the proximal anterior circulation. Furthermore, pooled analysis of the five trials showed that endovascular thrombectomy more than doubles the odds of an independent outcome compared with best medical therapy alone in this patient population. The American Heart Association guidelines now recommend endovascular therapy for selected patients with acute ischemic stroke*. Time to treatment is critical and as is often said “time is brain.” Multiple studies have shown a correlation between early recanalization and functional independence. Establishing target time intervals is paramount as it can lead to improved outcomes in ischemic stroke patients as it already has in patients undergoing percutaneous coronary intervention after myocardial infarction. Current societal recommendations are patient arrival at hospital to recanalization time less than 90 minutes**.

*Stroke. 2015; 46: 3020-3035 Published online before print June 29, 2015,

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Procedures provided by DINR for adult and pediatric patients

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- Acute Thrombectomy/Thrombolysis
- Extra/Intracranial Angioplasty/Stenting
- Brain Hemorrhage, Aneurysm/AVM/fistulae
- Aneurysm coiling
- Stent/balloon assisted aneurysm coiling
- Flow diverter stent device embolization
- AVM/Dural fistulae embolization
- Venous Sinus Thrombectomy/Thrombolysis
- Direct transcatheter embolization

Chronic Occlusive Cerebrovascular Disease

- Extra/Intracranial Angioplasty/Stenting
- Venous Sinus Angioplasty/Stenting
- Head/neck/orbit tumors & vascular malformations, epistaxis
- Endovascular embolization
- Direct percutaneous embolization

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Division of Interventional Neuroradiology – A Leader in Neurovascular Care and Research

- Invented the Merci retriever – the 1st endovascular device for acute stroke therapy
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