

Combined Curative Treatment of Large Brain AVMs

Vitor Mendes Pereira MD MSc

Timo Krings MD PhD

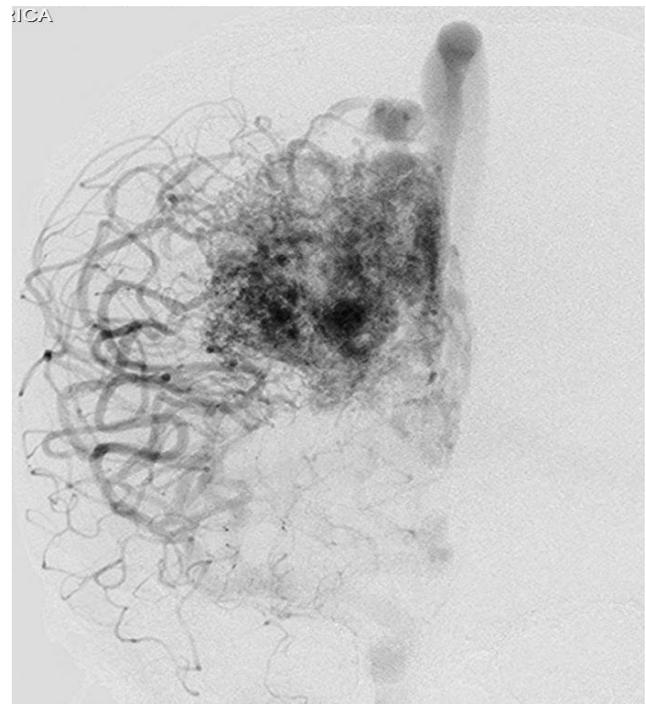
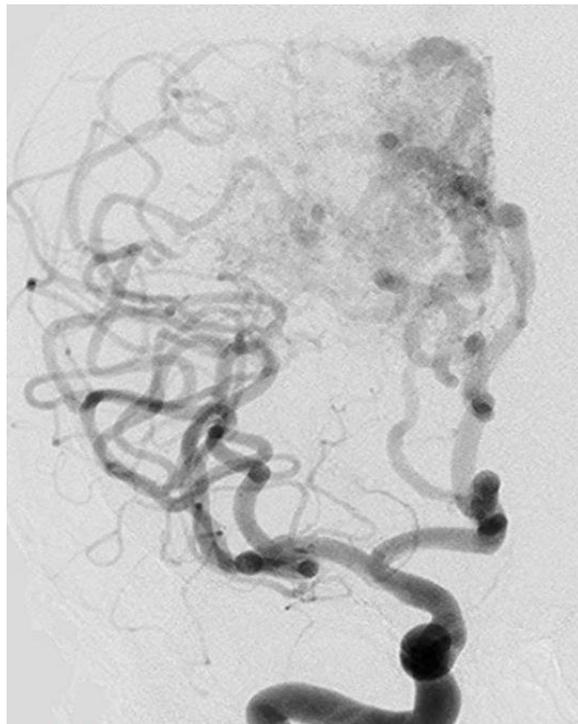
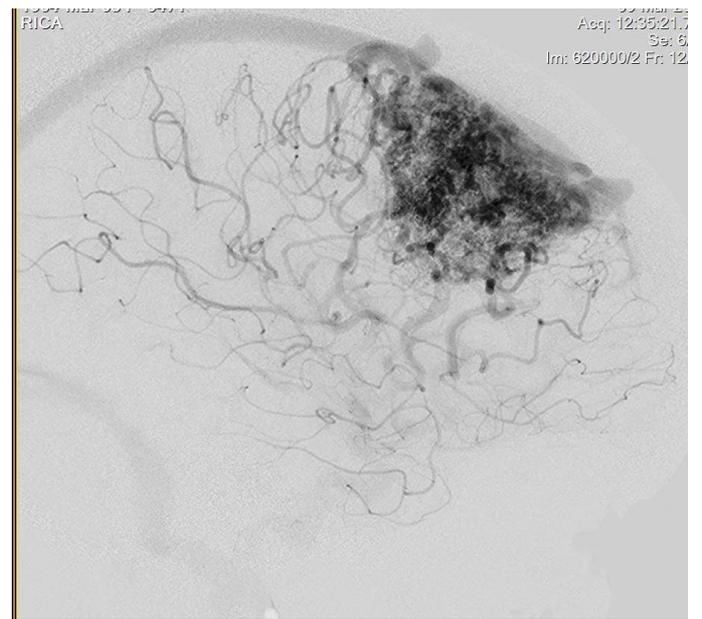
Ivan Radovanovic MD PhD

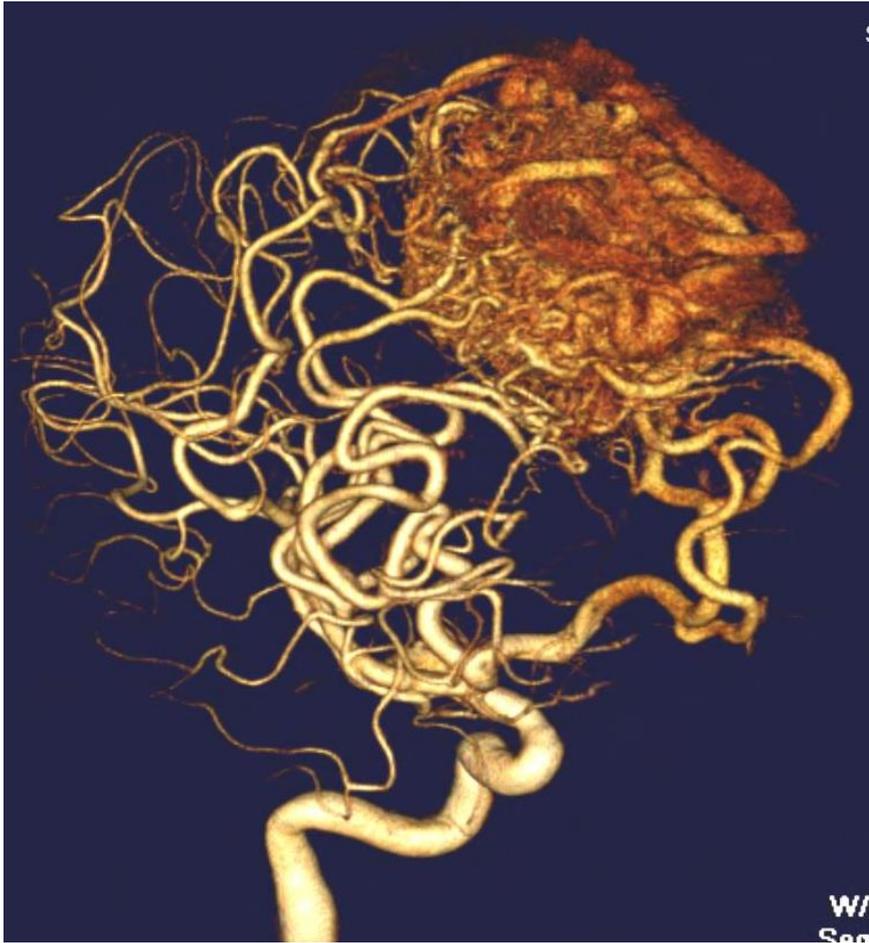
Associate Professor of Radiology and Surgery
Division of Neuroradiology and Neurosurgery
University Health Network – University of Toronto, Canada

- 52 year old female

PMH:

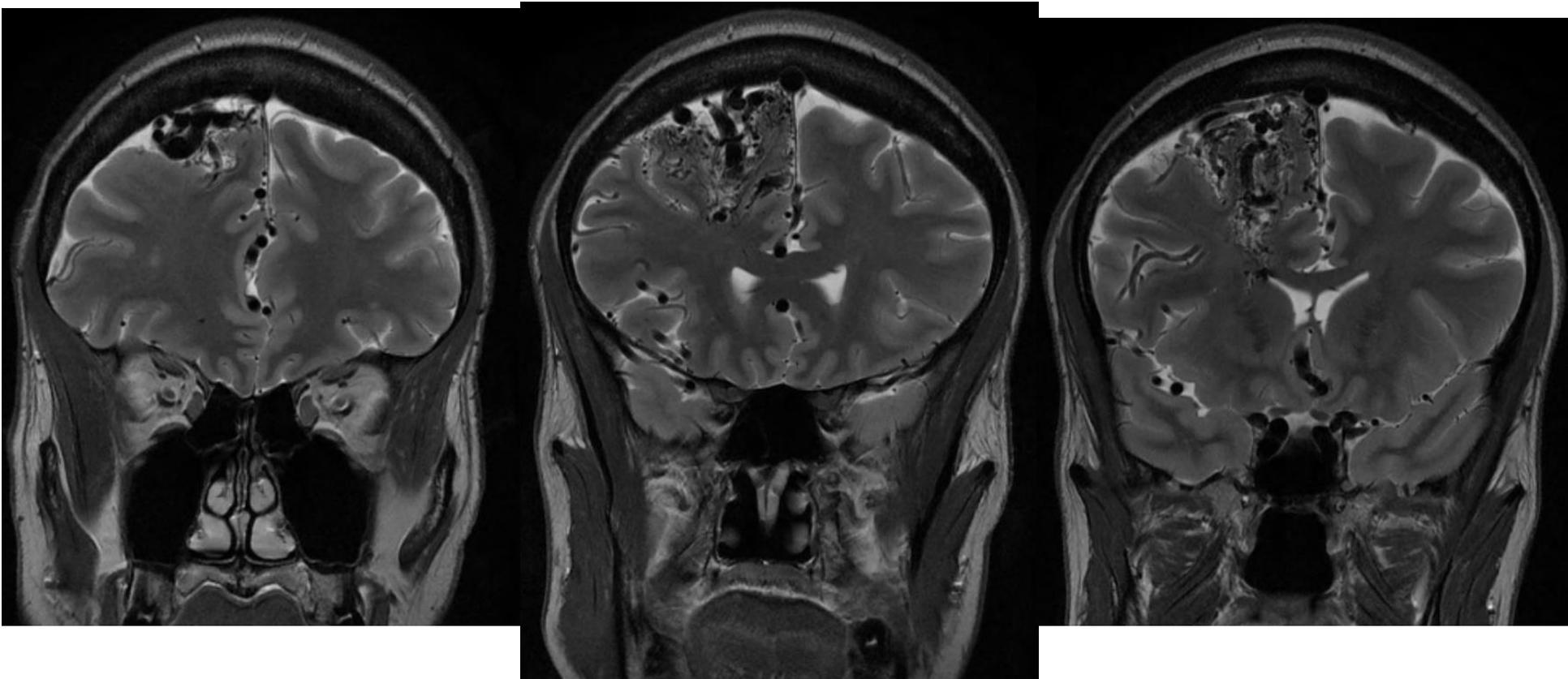
- Known right Frontal AVM diagnosed in Nov 2010 after bleeding (France)
- Good recovery. Conservatively managed
- Received a diagnosis of Proliferative Angiopathy
- Breast Cancer, diagnosed in June 2013. post right lumpectomy and radiotherapy



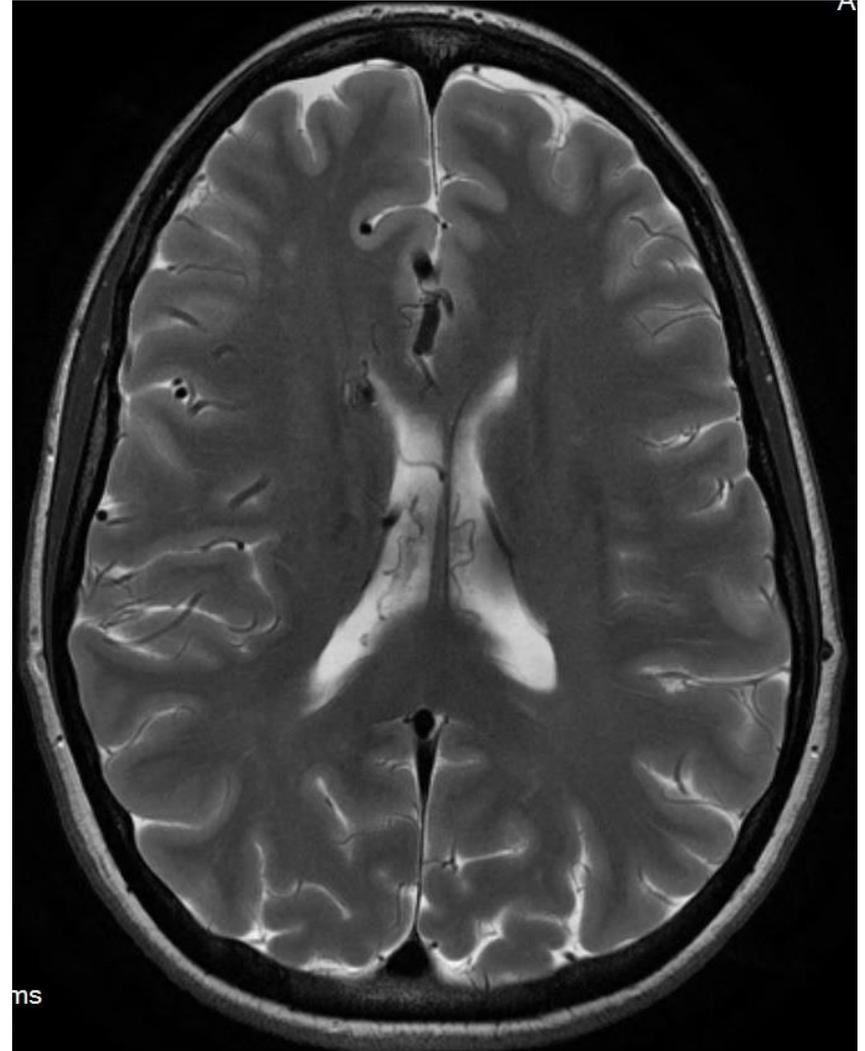


- 2011
 - Seizures
 - She had history of on/off left face, arm and leg numbness
 - Seeing at our clinic at TWH Toronto.
 - She was GCS 15 with no motor or sensory deficits
 - She was discussed in the AVM conference and the plan was to continue to follow clinically and with imaging.

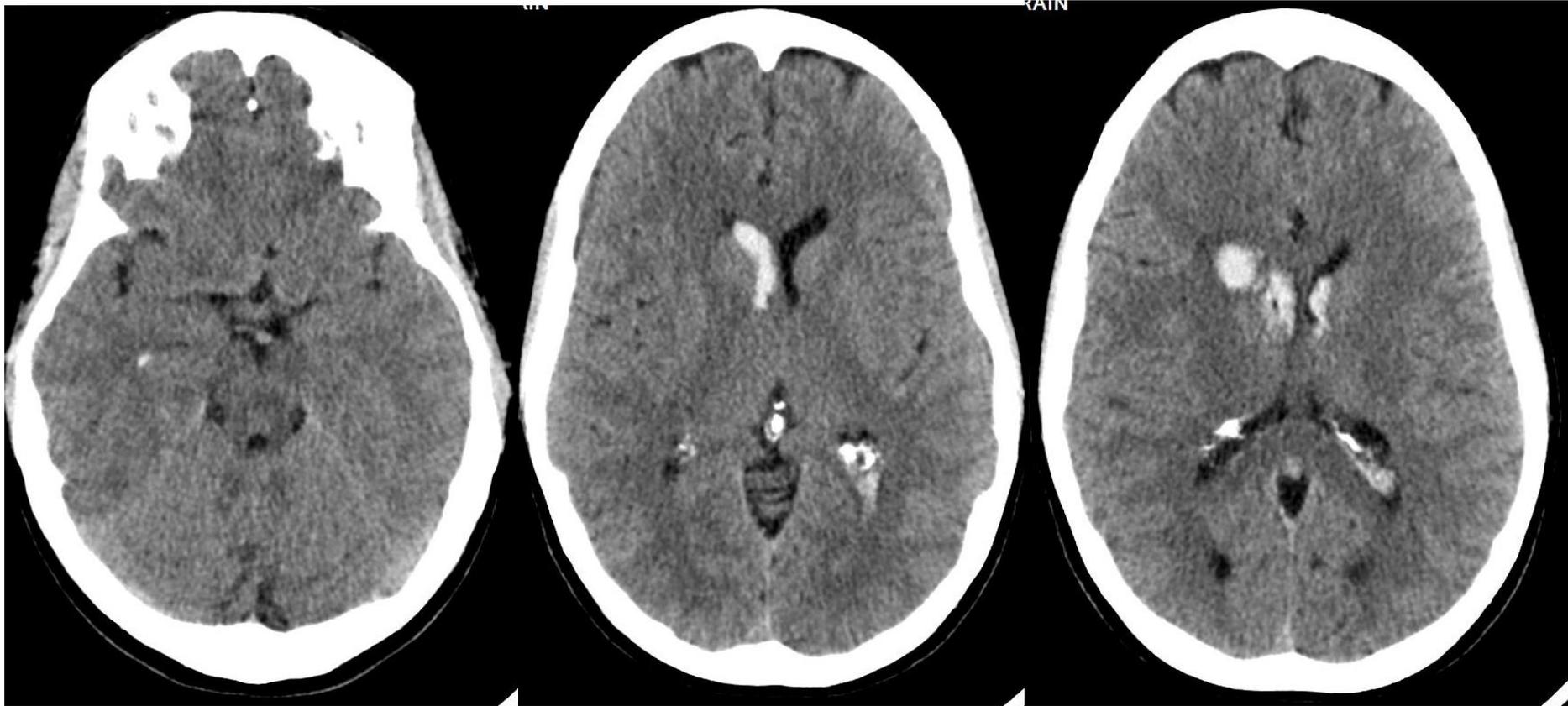
Follow up imaging

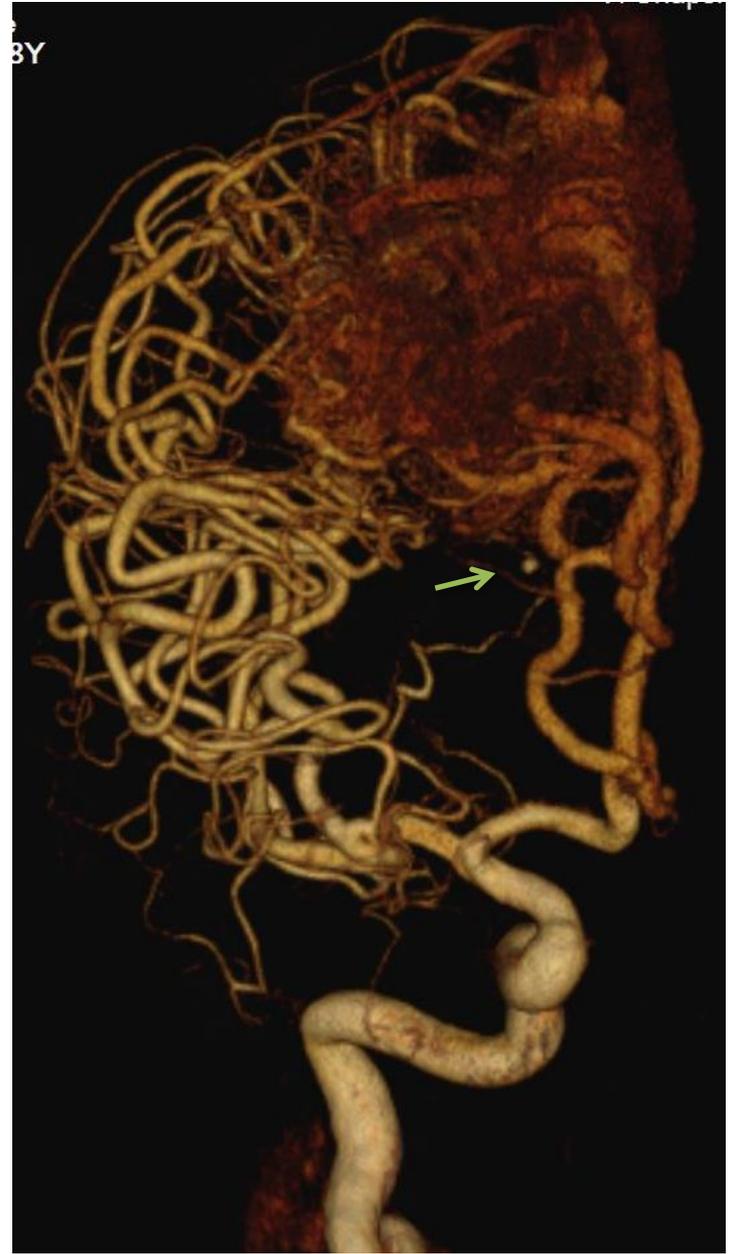
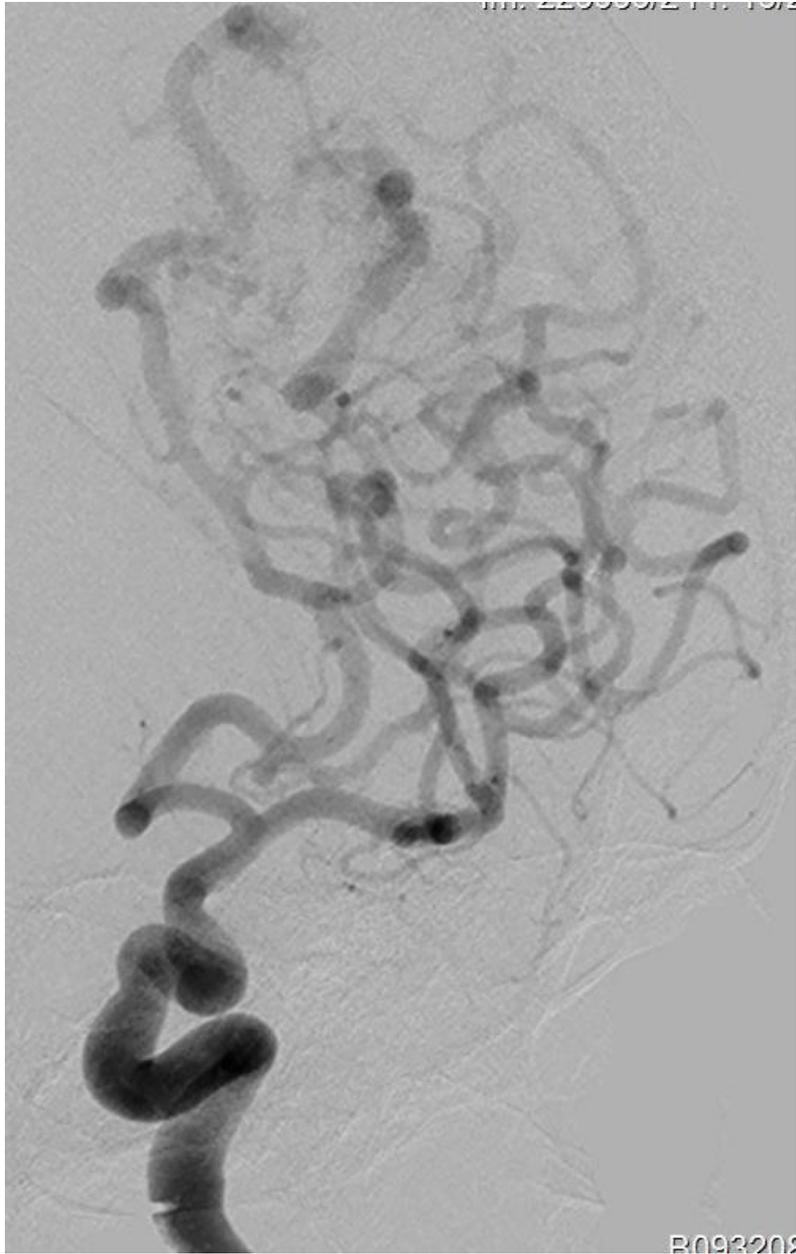


Follow up imaging



- In Feb 2013, She presented with sudden onset of headache and mild left sided weakness
- Repeat CT and angiogram were done





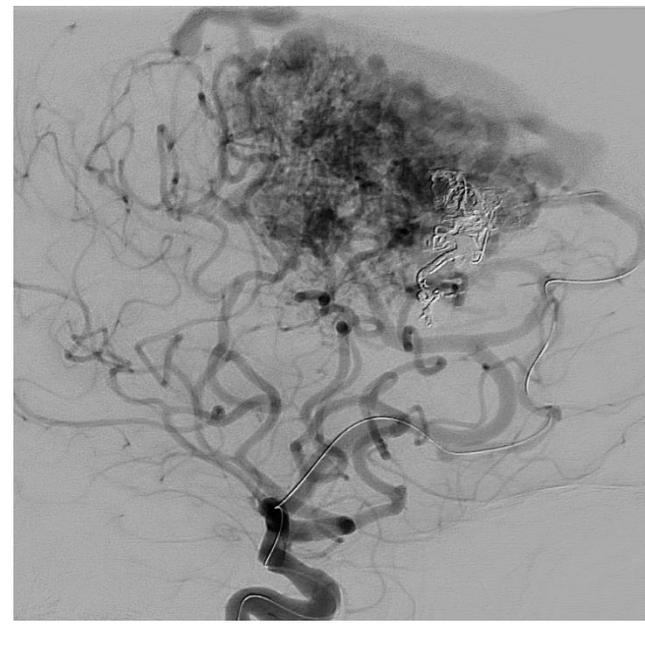
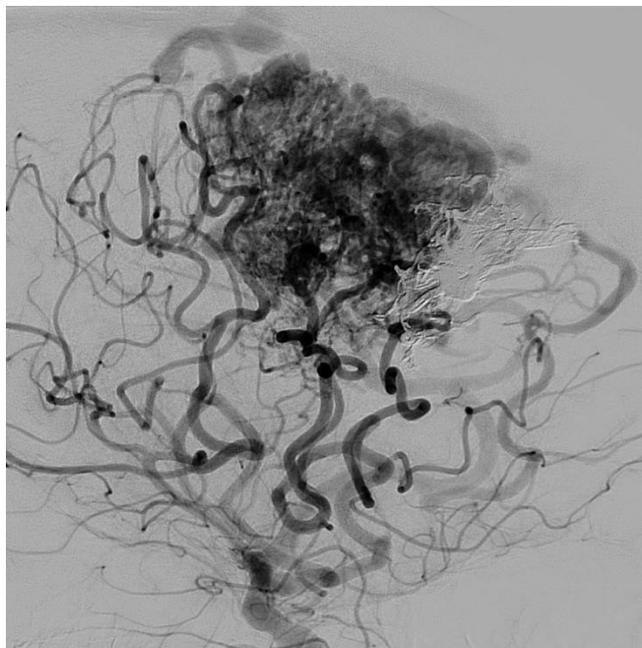
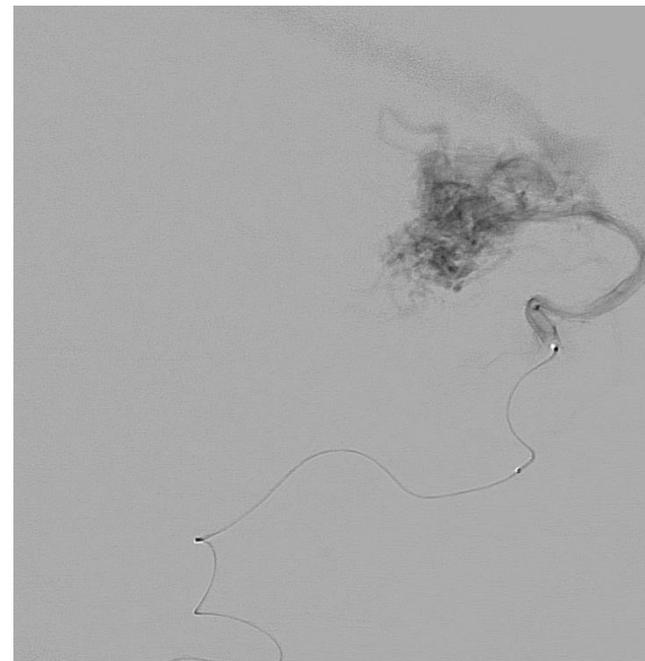
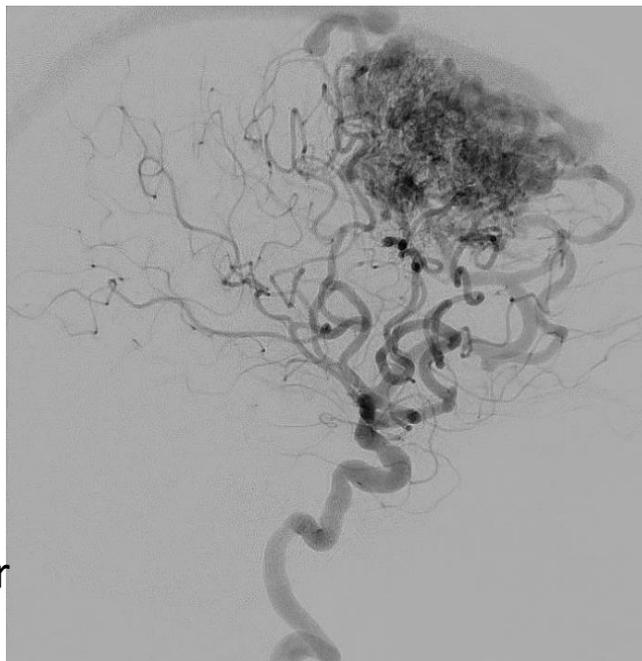
Angiogram +/- E - 3 days later

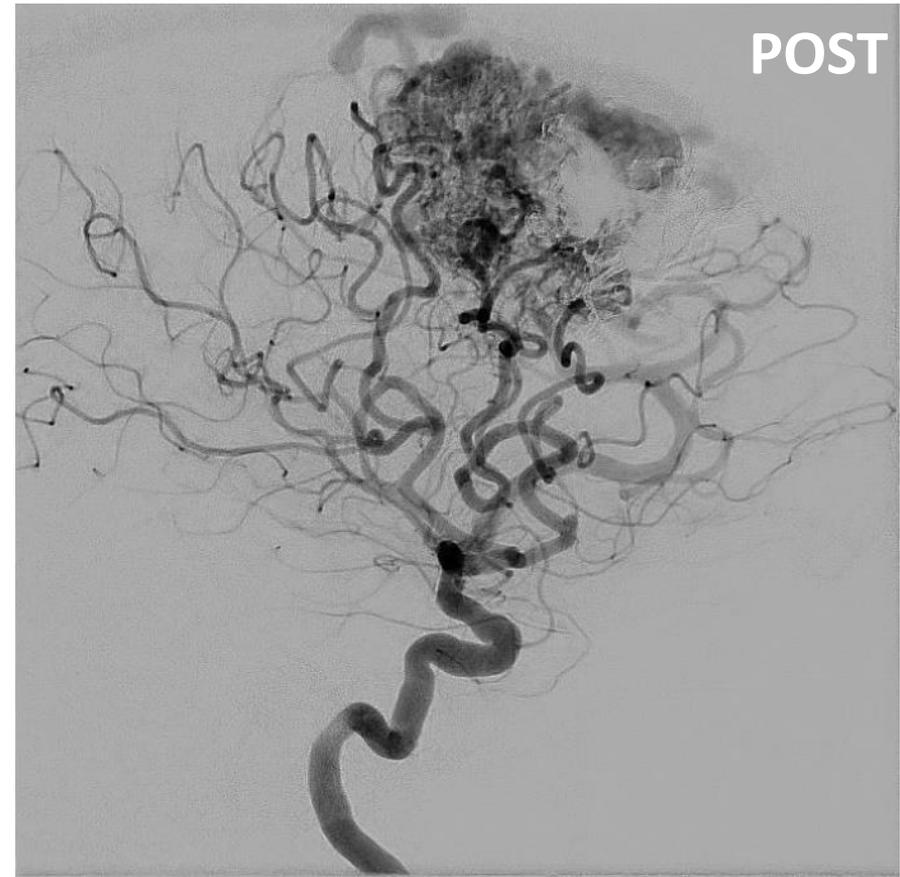
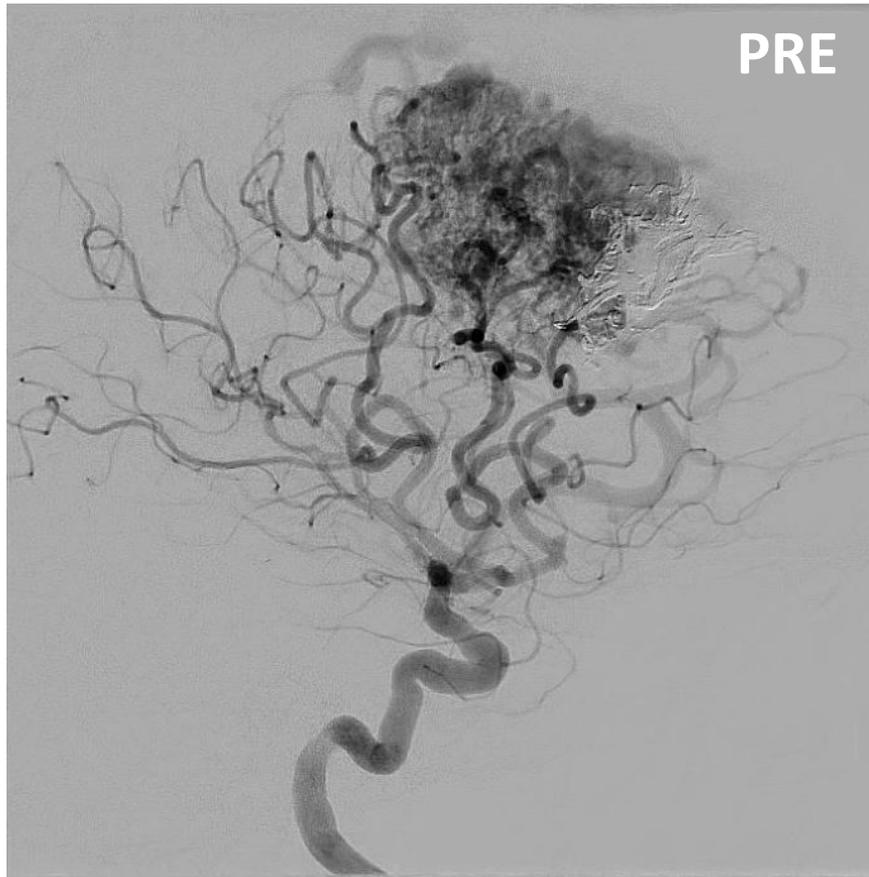


Evolution

- Severe headaches
- Seizures
- Diagnosis: AVM with intranidal fistulas and perinidal angiogenesis
- Patient could potentially benefit from staged embolization and possible surgical resection.

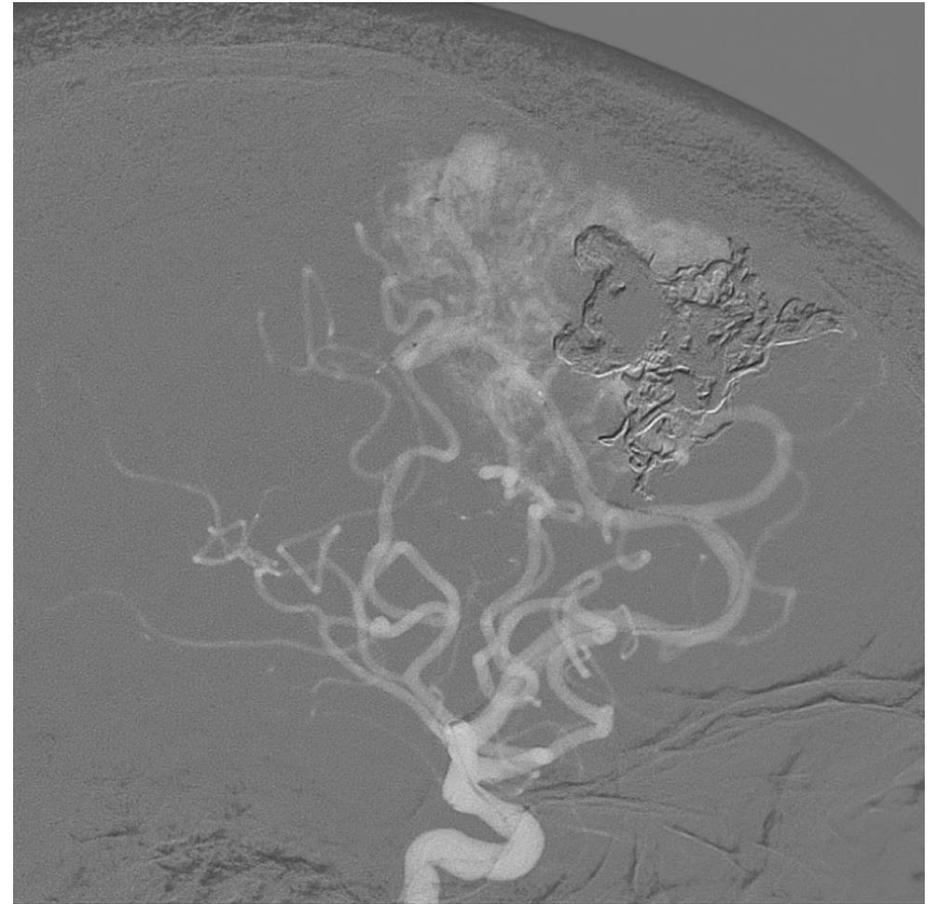
- First embolization
 - Targeting the anterior and the deep ACA feeders (Onyx)
 - Procedure was uneventful



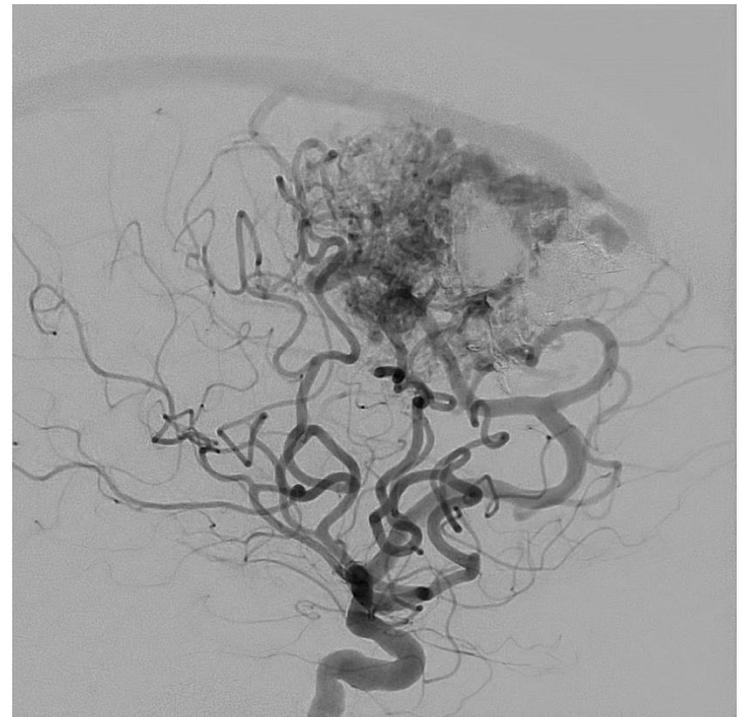
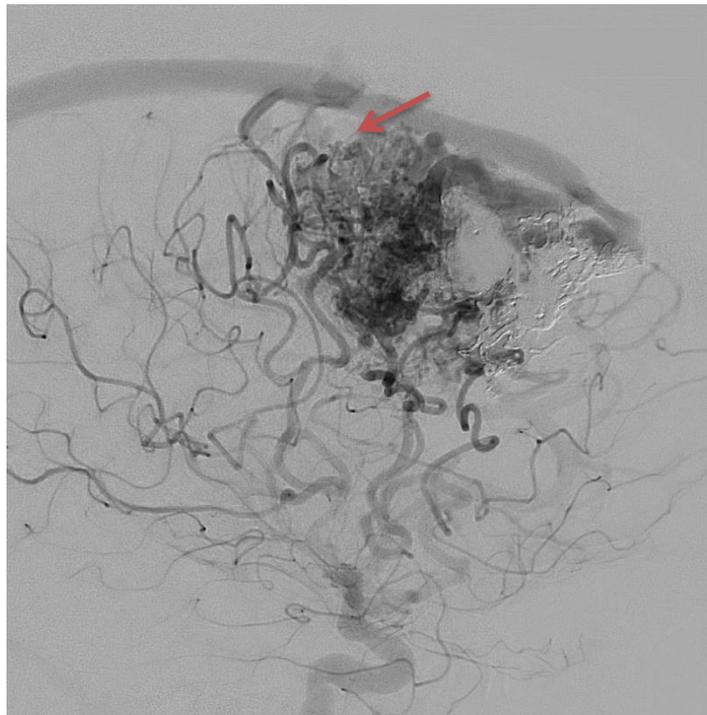


- Second embolization
 - Targeting the anterior and the deep ACA feeders (Onyx)
 - Procedure was uneventful

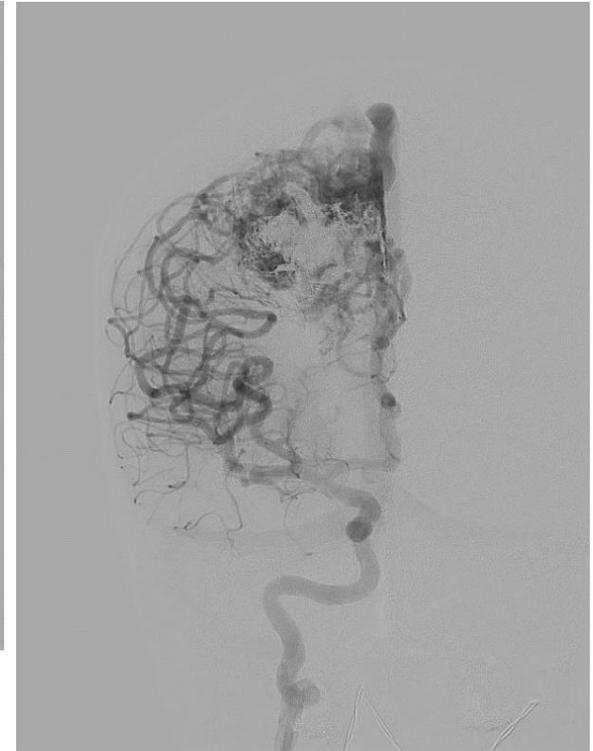
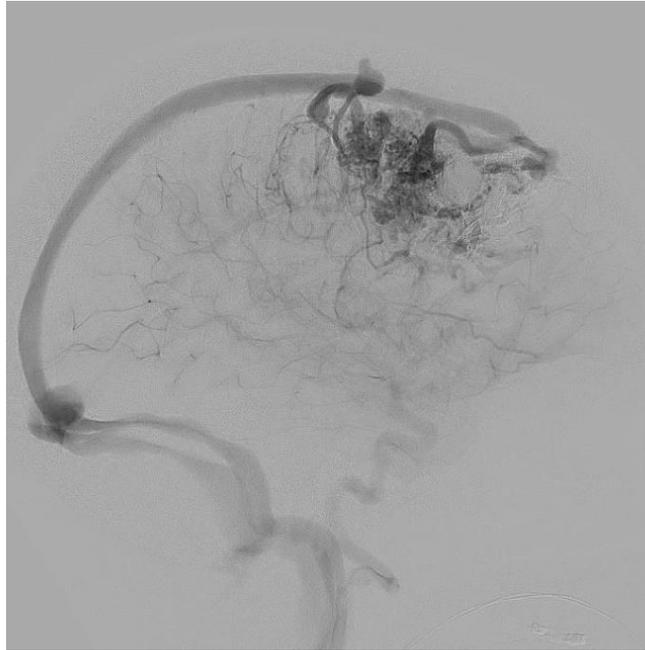
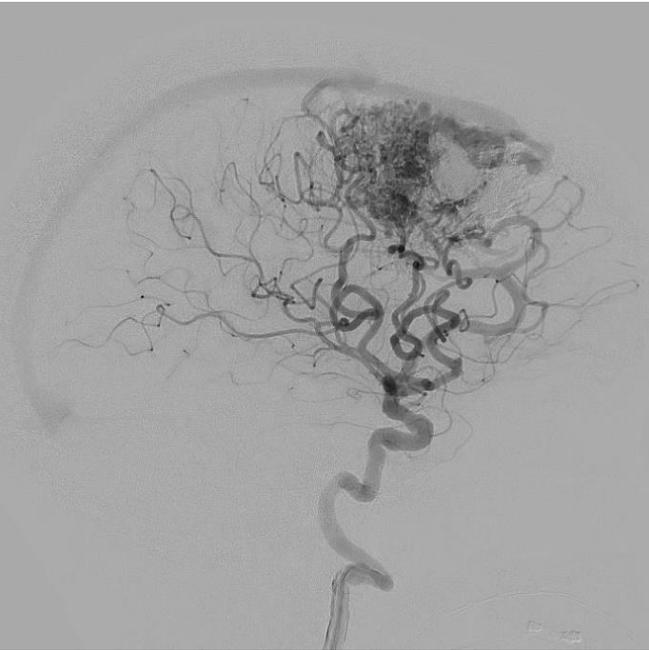
Evolution



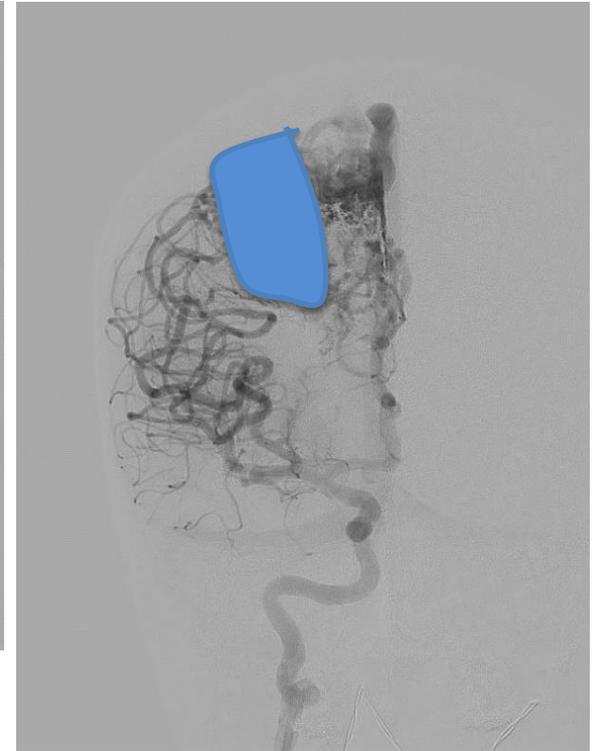
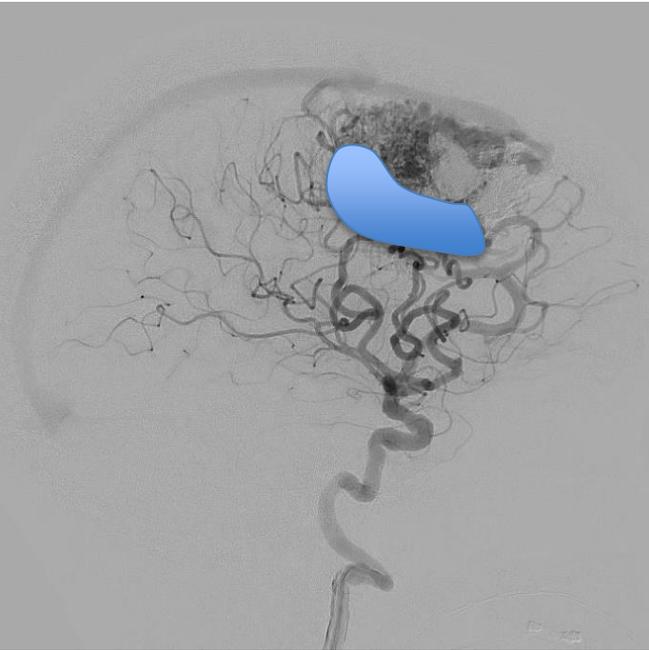
- Third embolization – April 2016
- Targeting the fistulous component supplied by the ACA (Glue)
- Procedure was uneventful
- Patient was discharged home POD#3



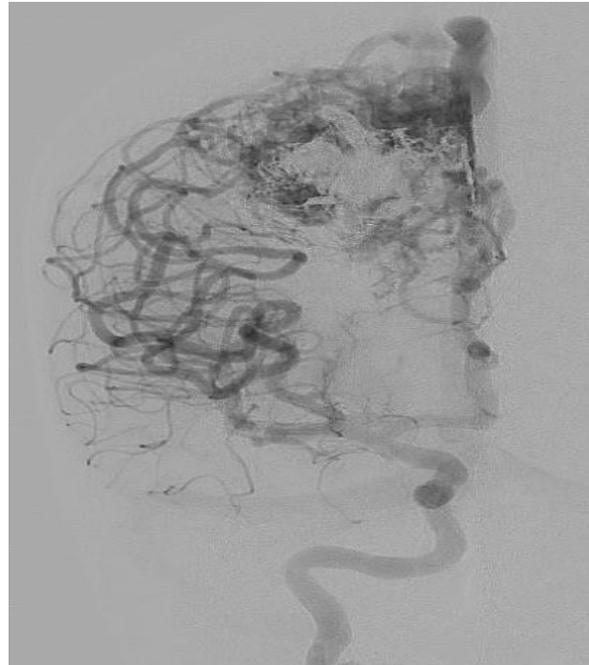
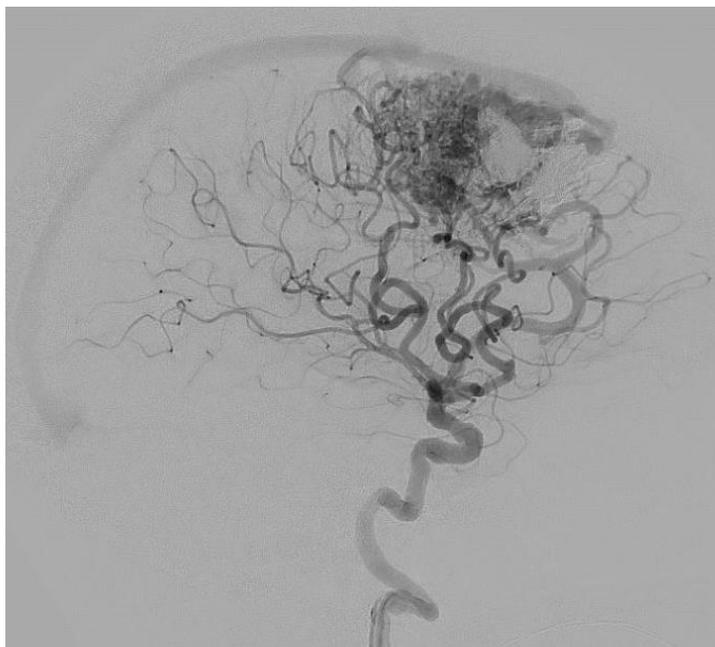
Final treatment strategy



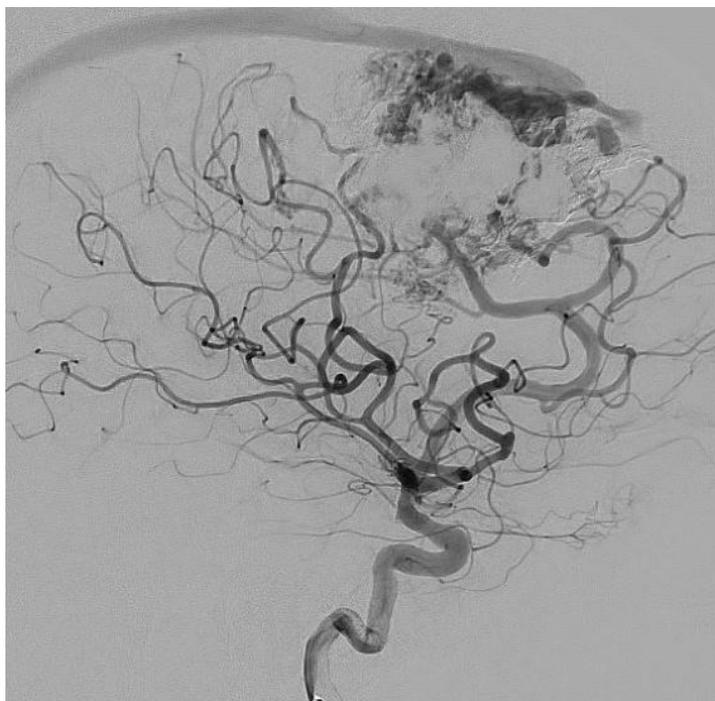
Treatment strategy

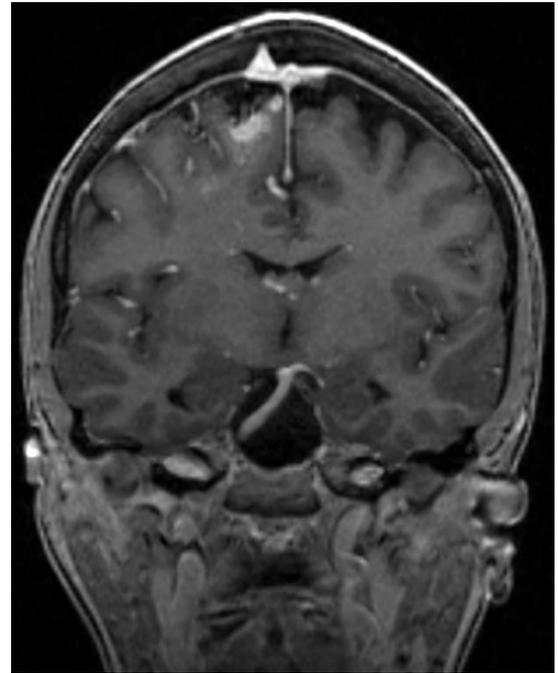
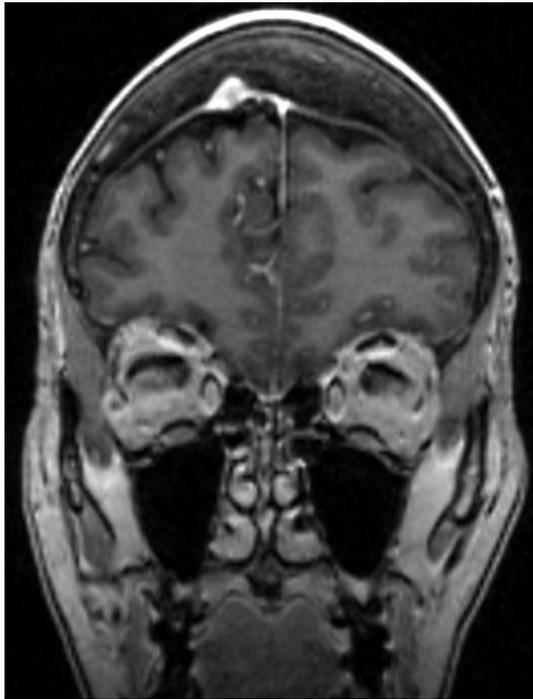
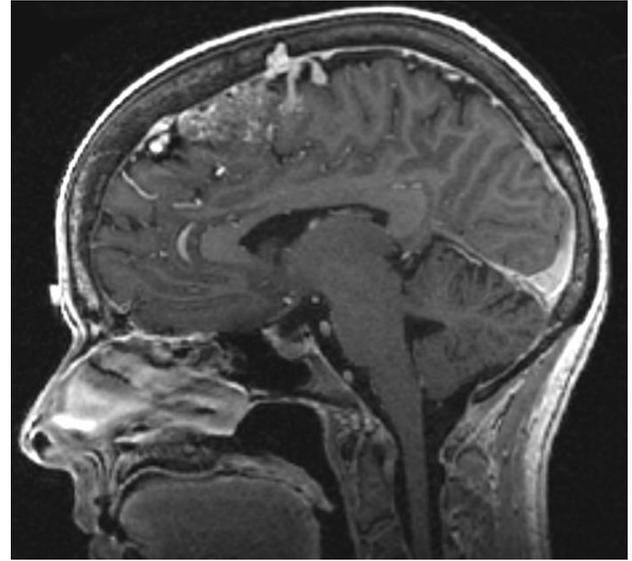
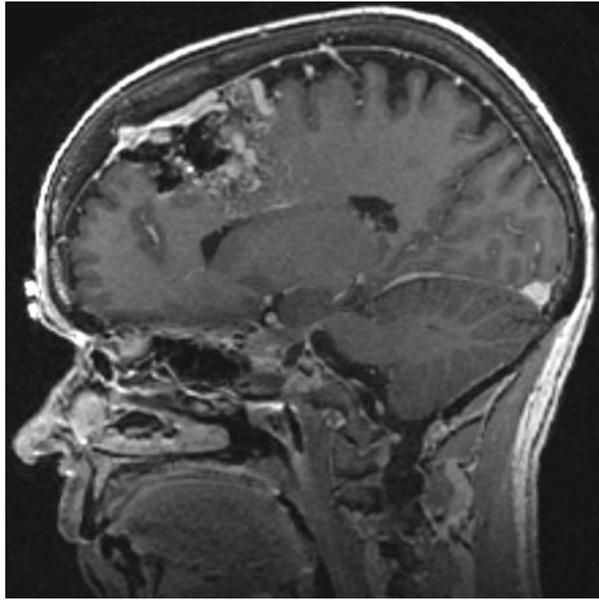


Pre

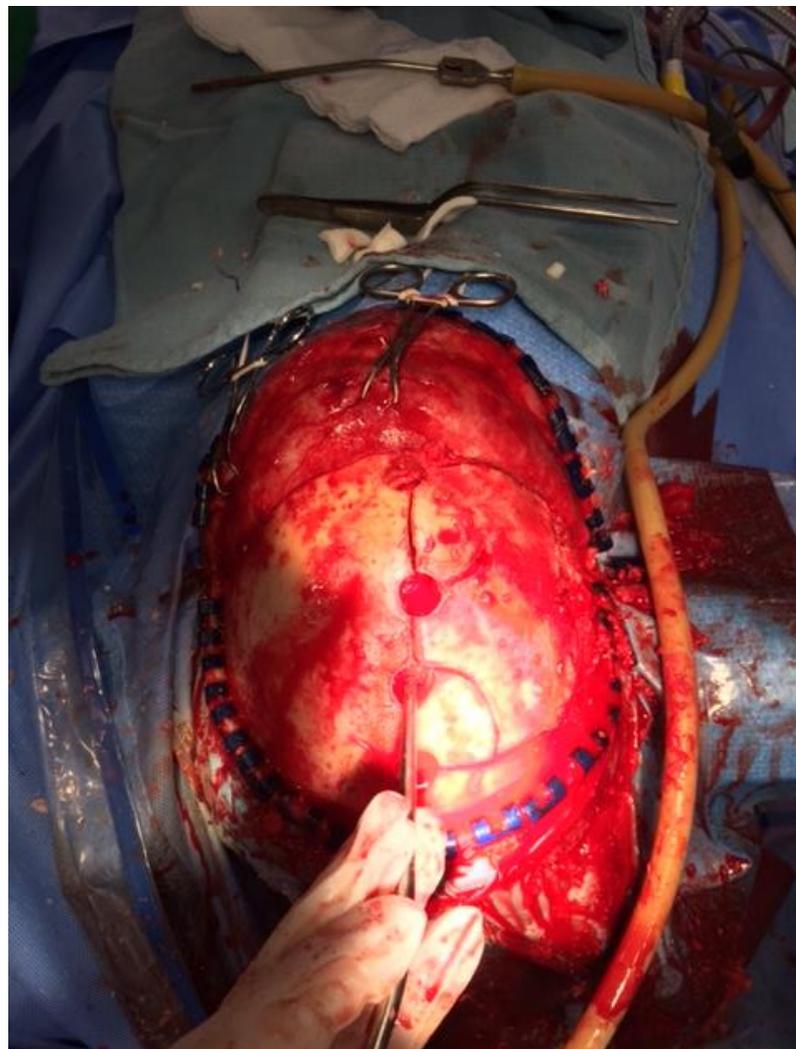


Post



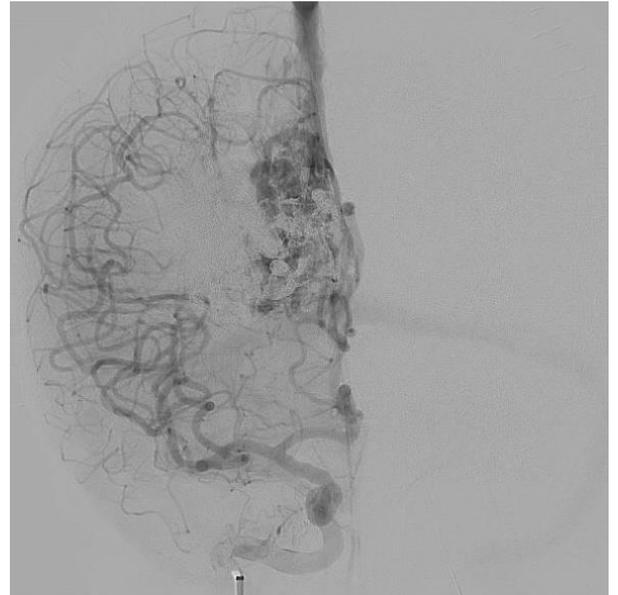
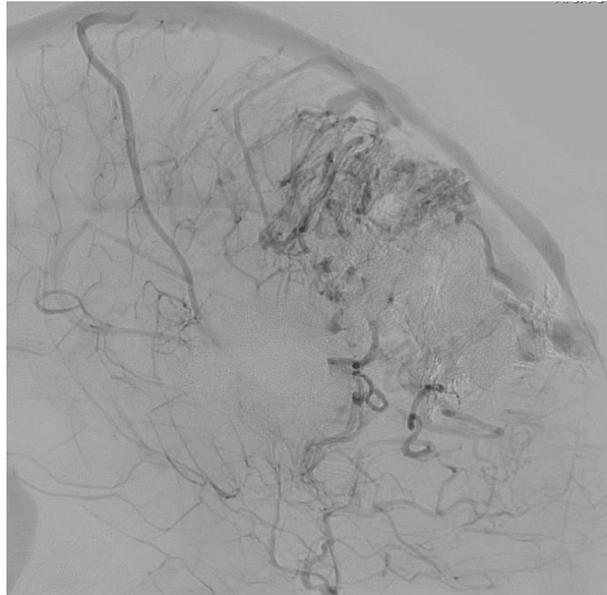
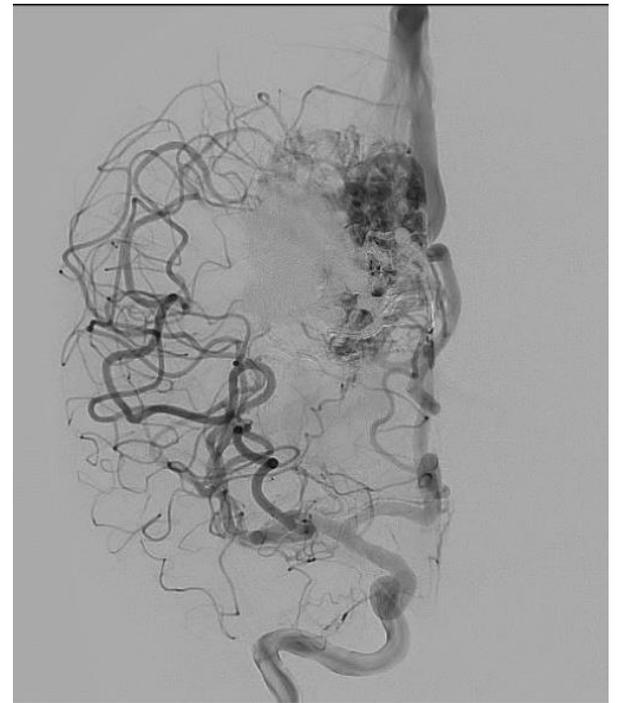
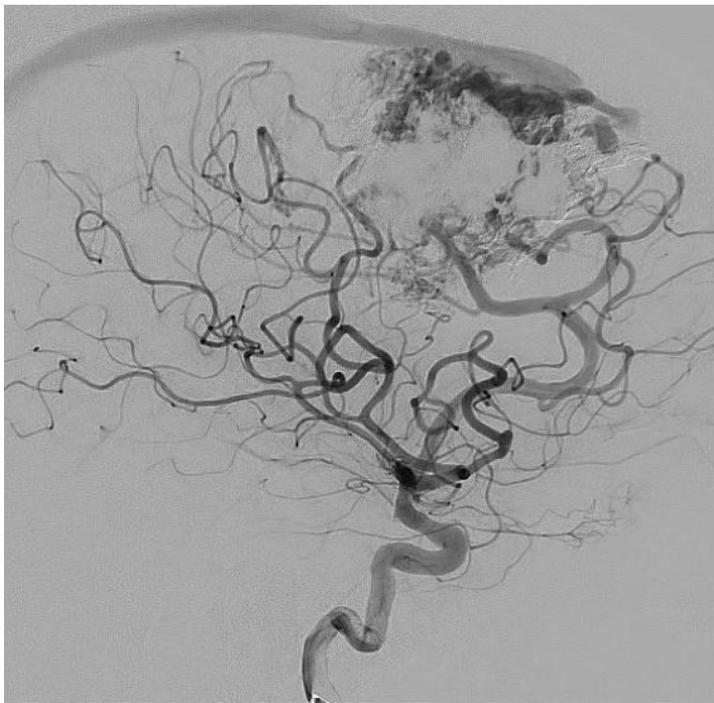


- The patient was positioned and the neuronavigation was registered.
- The plan for the craniotomy was to leave bone on the anterior and posterior venous pouches till the end of the case



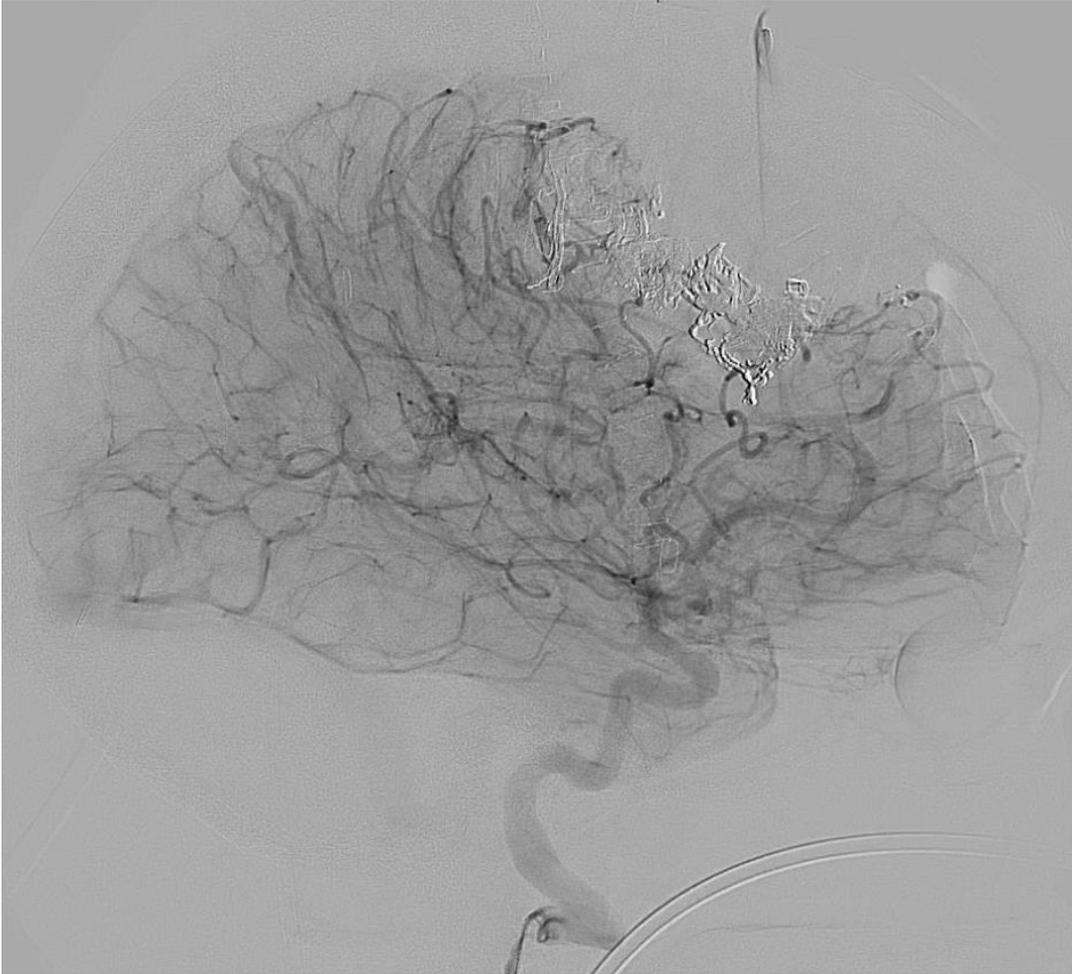
- During the craniotomy, significant bleeding was encountered that was thought to from the anterior and the posterior venous pouches
- The bone flap was then removed and 2 pieces of muscles were sutured to the dura to patch the venous pouches





Per operative control
angiogram
Hybrid room

Final angiogram



Thanks for your attention

[vitor.pereira@uhn.ca](mailto: ritor.pereira@uhn.ca)

[vitormpbr@hotmail.com](mailto: vitormpbr@hotmail.com)

I. Radovanovic M. Tymianski K. terBrugge T. Krings R. Agid M Schwartz

