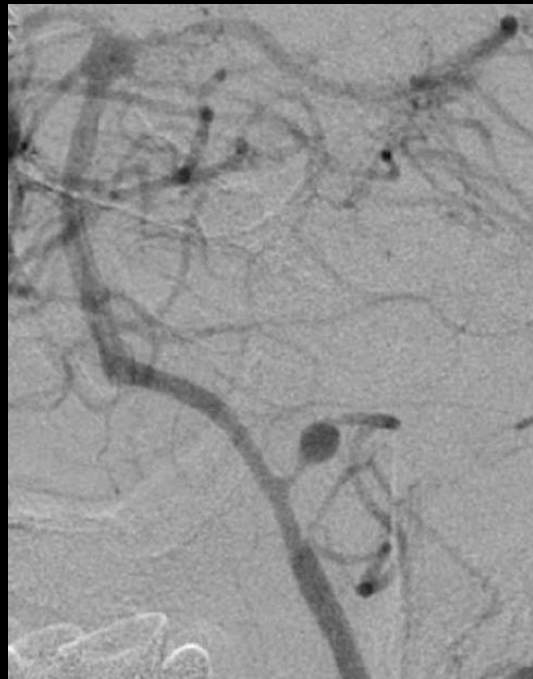
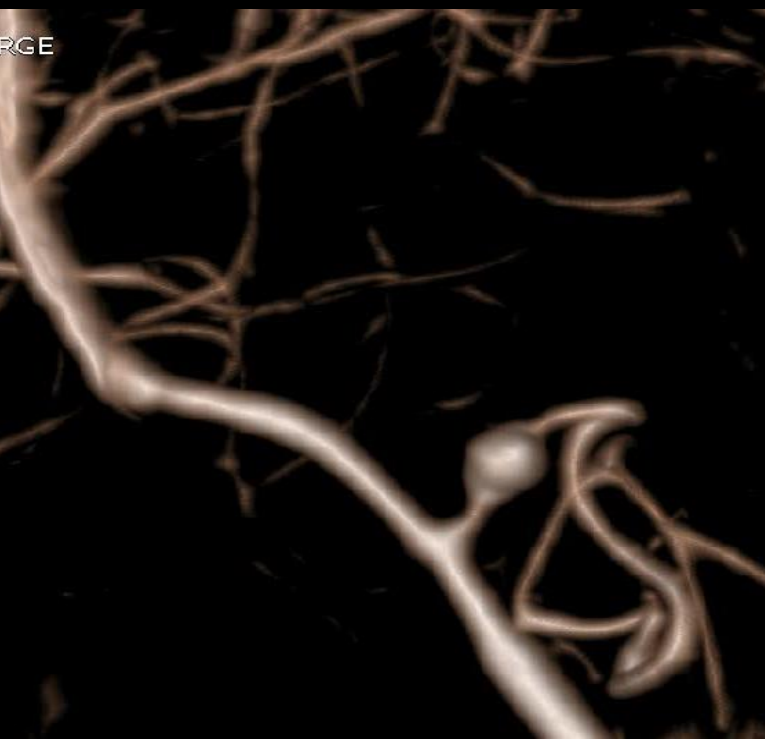
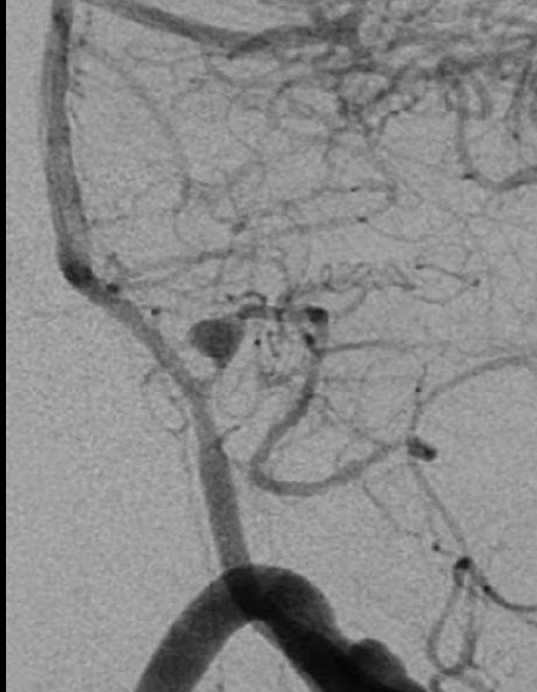
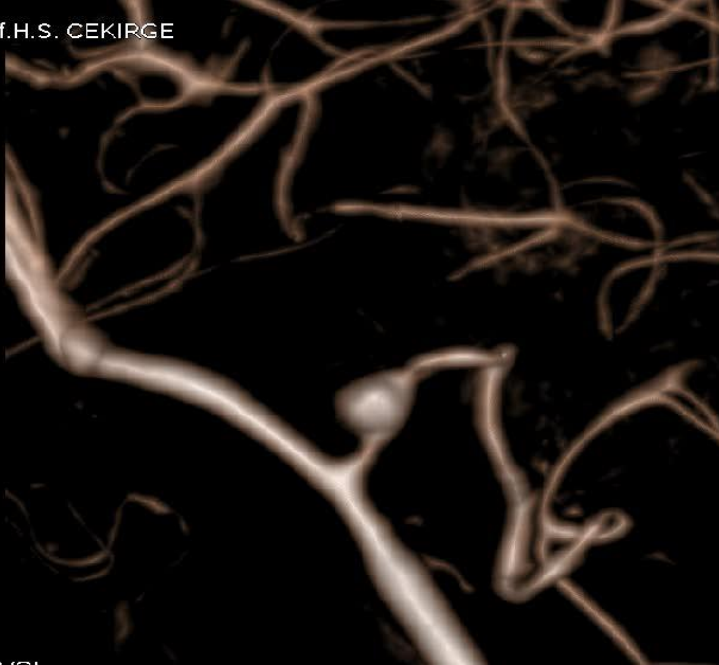


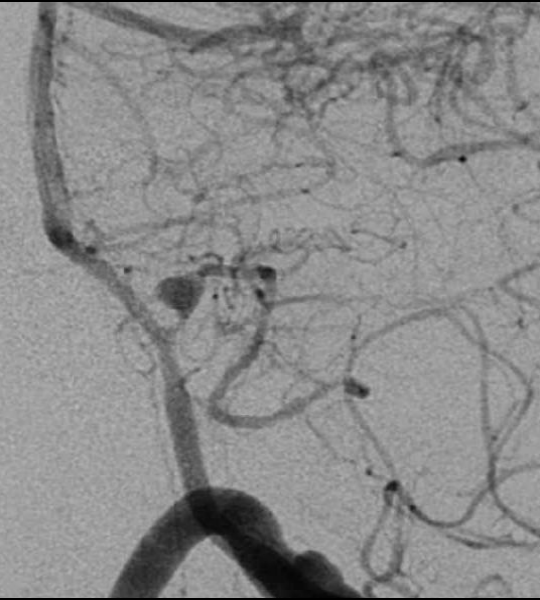
**38 yo female with SAH due to a com aneurysm that was treated with coiling. She was referred for the treatment of PICA aneurysm. The patient had a failed balloon test occlusion at the origin of PICA in the vert artery...**

# ***HOW DO YOU TREAT?***

- A. SURGERY/BYPASS SURGERY**
- B. STENT ASSISTED COILING**
- C. TELESCOPIC STENTING**
- D. FLOW DIVERTER PLACEMENT IN THE PICA  
ACROSS THE ANEURYSM**
- E. FLOW DIVERTER PLACEMENT IN VERTEBRAL  
ARTERY ACROSS THE PICA ORIGIN TO MODIFY  
THE FLOW**

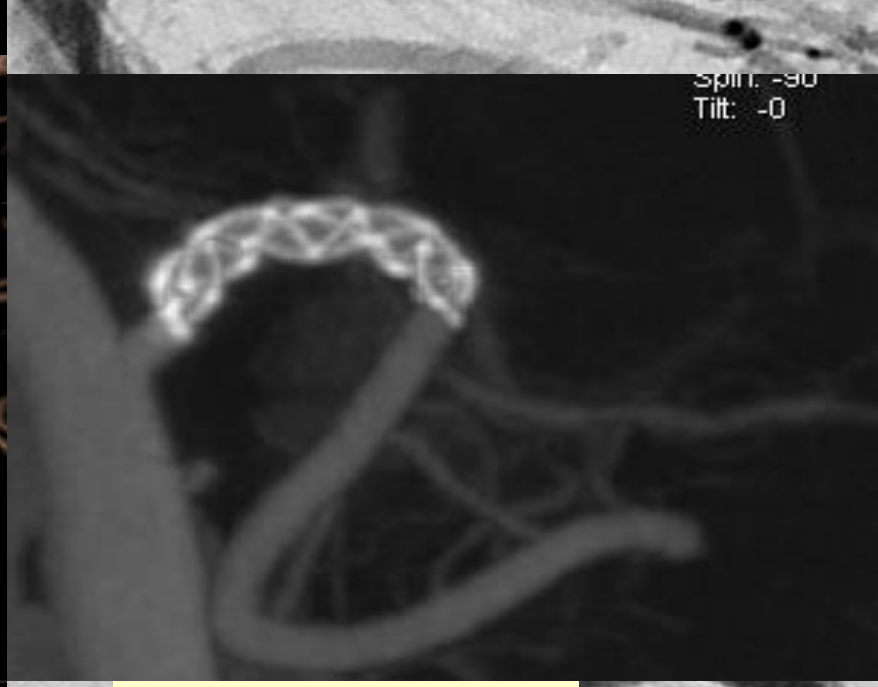


**38 yo female with SAH due to a com aneurysm that was treated with coiling. She was referred for the treatment of PICA aneurysm. The patient had a failed balloon test occlusion at the origin of PICA in the vert artery...**

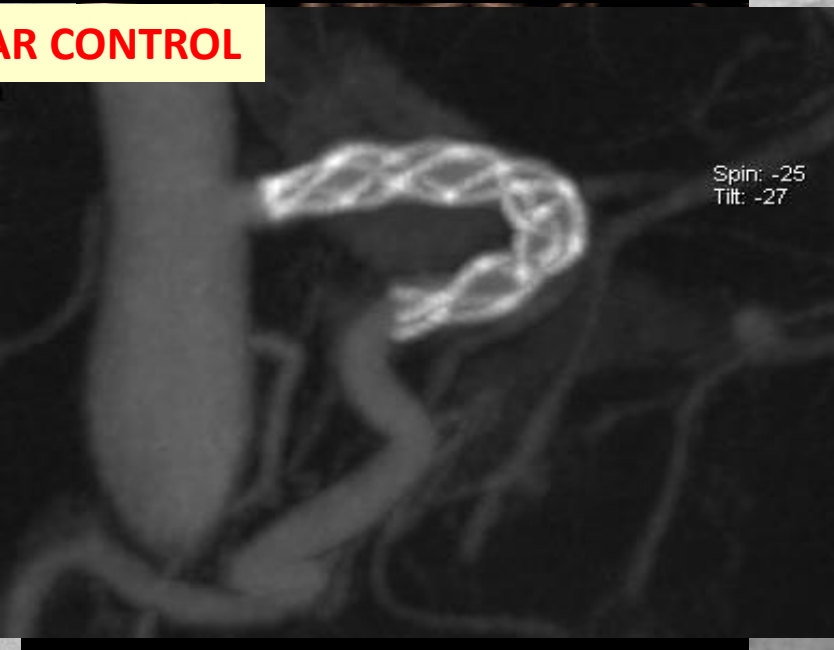


Prof.H.S. CEKIRGE

CTA



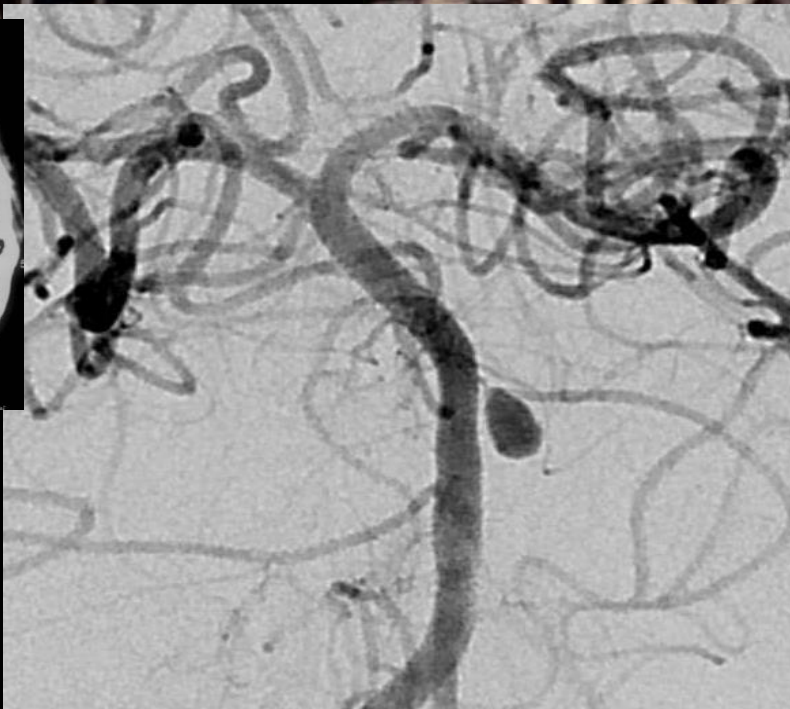
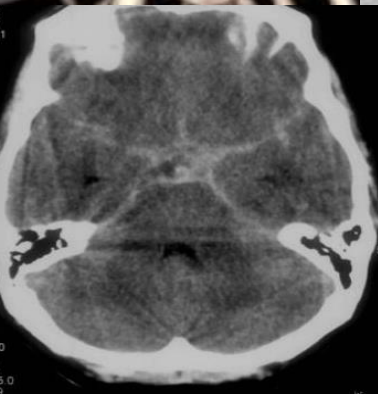
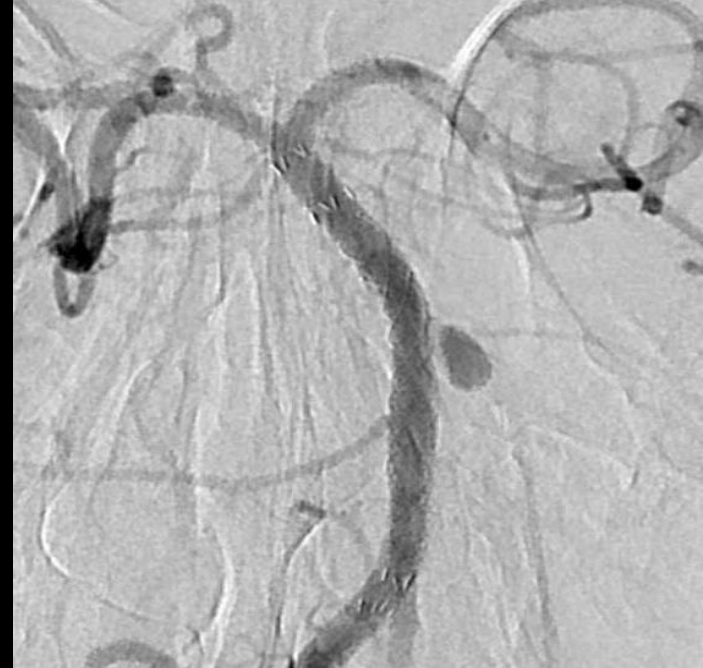
**1 YEAR CONTROL**



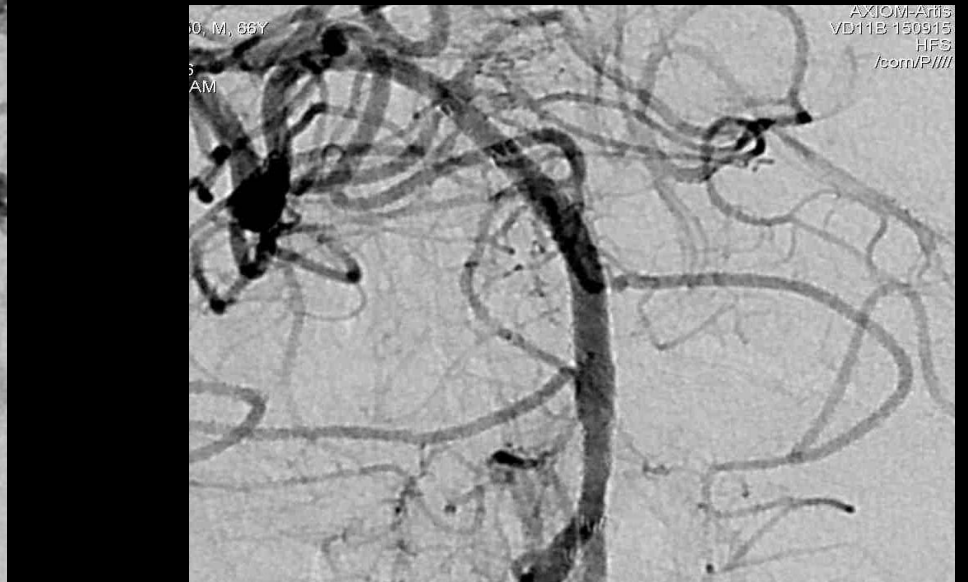
**POST FD PLACEMENT**



- ***BUT, WITH THE FLOW REMODELLING EXPERIENCE WE HAVE NOW, I WOULD DEFINITELY PLACE FLOW DIVERTER IN THE VERT ARTERY...***



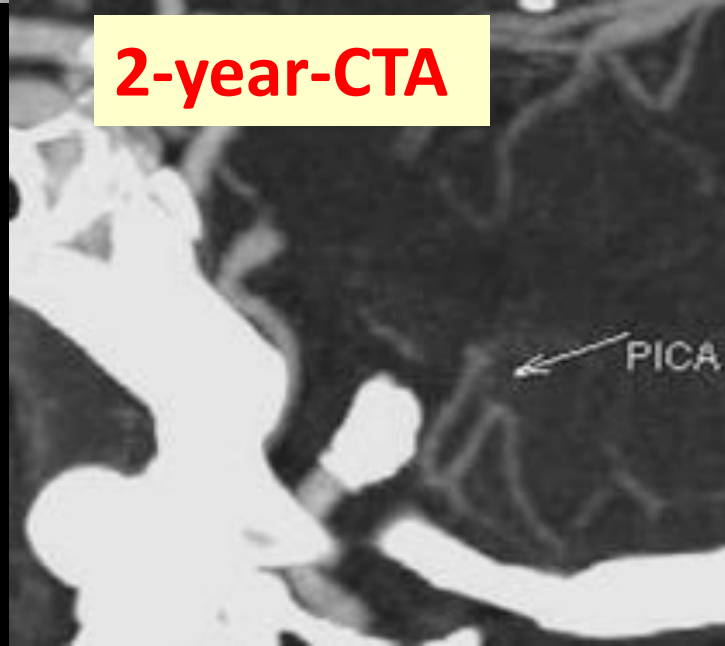
**1. YEAR CONTROL, CLASS 1A OCC**



11:55 AM  
13/36  
0 sec



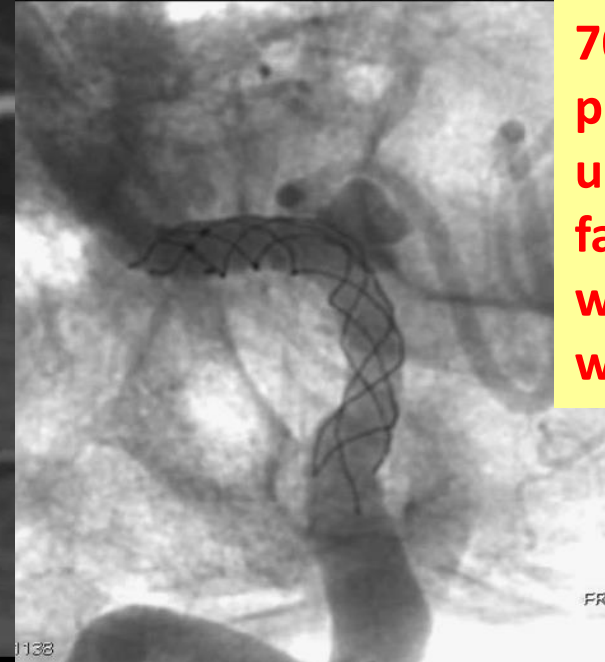
**6 months control**



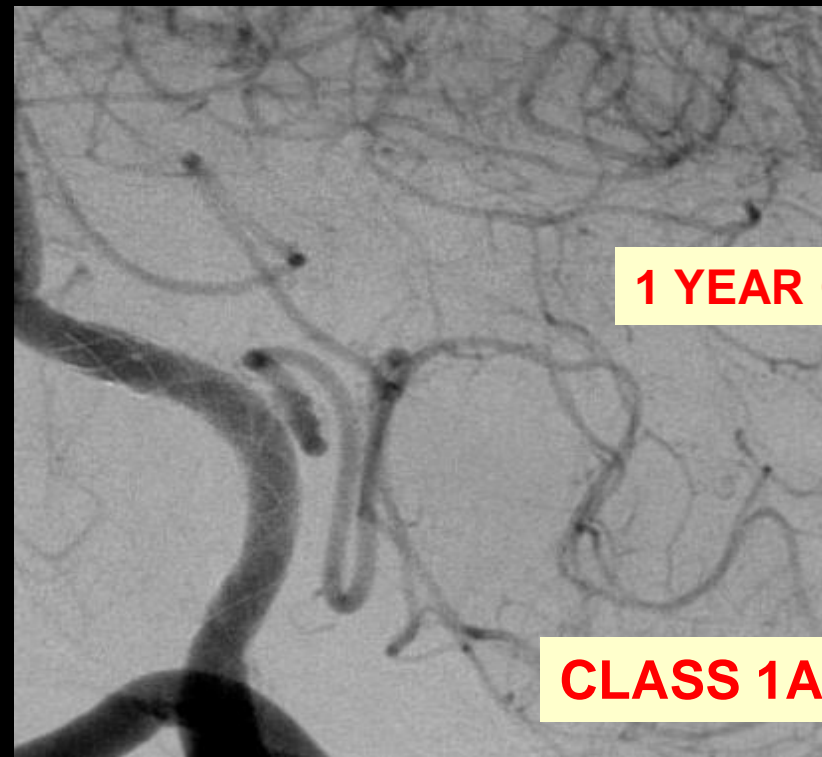
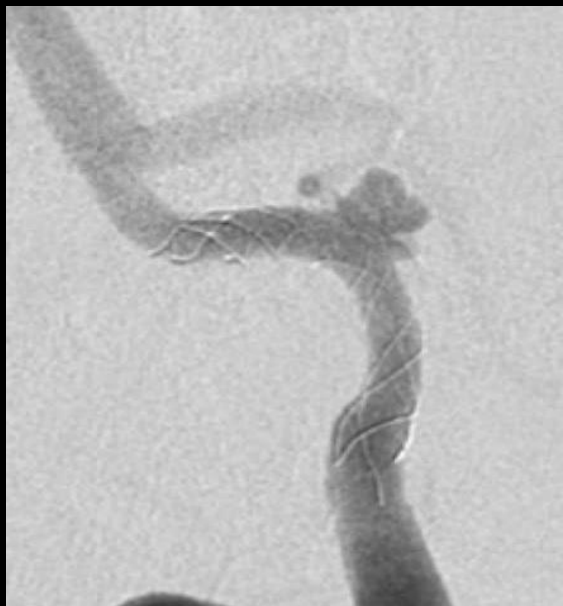
**2-year-CTA**



**2-year-CTA**



70 yo female presented w SAH, underwent surgery w failed clipping—wrapped. Referred 2 weeks after the bleed

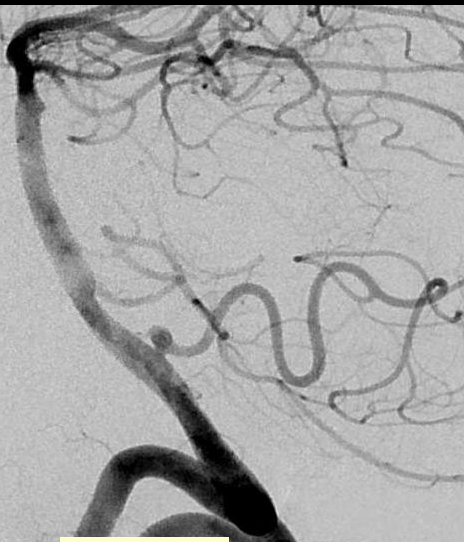


1 YEAR CONT

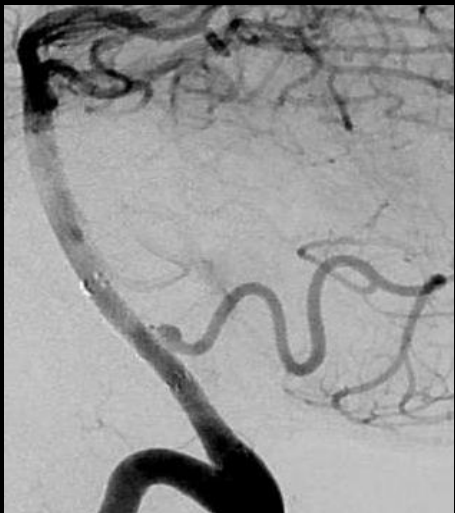
CLASS 1A occlusion



**Pre tx**



**6 months cont**



**Pre tx**



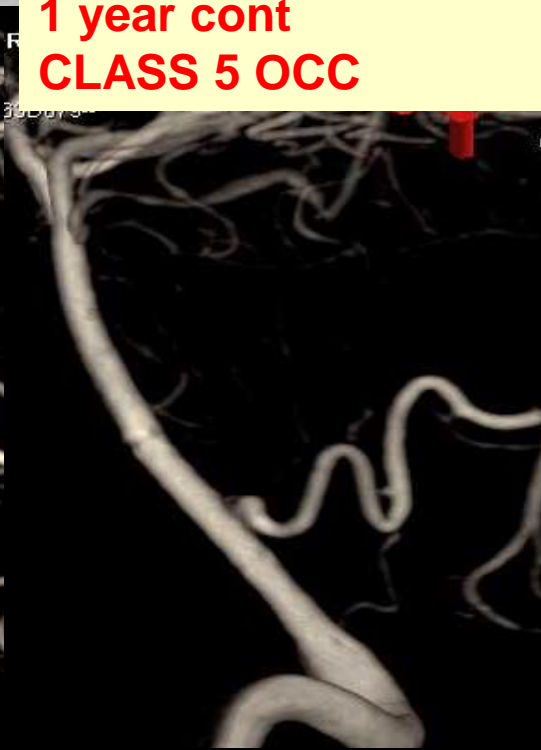
**1 year cont**



**Pre tx**

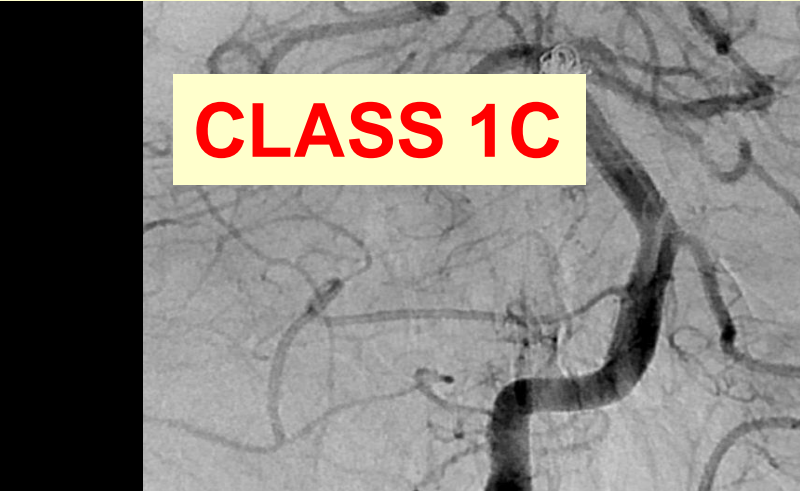


**1 year cont  
CLASS 5 OCC**





***If the Flow demand of particular vessel is not strong or exist, the remodelling process ends with progressive asymptomatic occlusion of that vessel coming off the aneurysm sac..But, it sometimes takes longer than expected needing retx...***

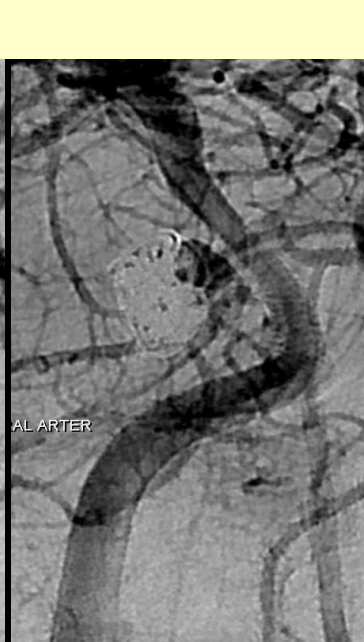
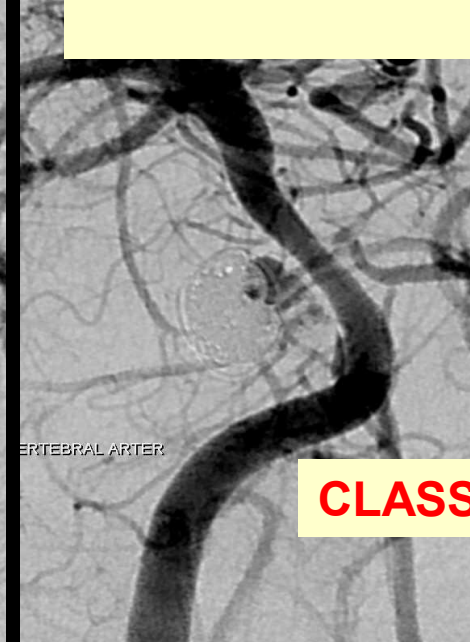


**Retreatment with second pipeline**



[Cekirge HS, Saatci I, A New Aneurysm Occlusion Classification after the Impact of Flow Modification. AJNR 2016;37:19-24](#)

**6 MONTHS CONT**



**CLASS 5 OCCLUSION**

AKER, NEVIN  
282093  
7/3/1980, F, 55Y  
STUDY 1  
7/3/2015  
10:51:55 AM  
5 - 12/26  
V1.3  
3.87 sec

H

Koru Hastanesi Ankara  
AXIOM- Artis  
VC21B 140444  
HFS  
/com/III/

STUDY 1  
7/3/2015  
10:51:55 AM  
5 - 20/26  
V1.3  
3.33 sec

/com/III/

**6 MONTHS CONT**

SAG VERTEBRAL ARTER

SAG VERTEBRAL ARTER

**CLASS 5 OCCLUSION**

Carotid  
m 22  
A  
V 96  
hA 128  
D 3153  
RAO 23° / CRAN 7°

1024 X 1024

EE 0%  
AB 0%

Xy 1.1/1.1  
WC 4095 LW 4095  
WB 2047 LC 2047

SM

Carotid  
m 22  
A  
V 96  
hA 128  
D 3153  
RAO 23° / CRAN 7°

1024 X 1024

EE 0%  
AB 0%

Xy 0.1/0.1  
WC 4095 LW 4095  
WB 2047 LC 2047

SM

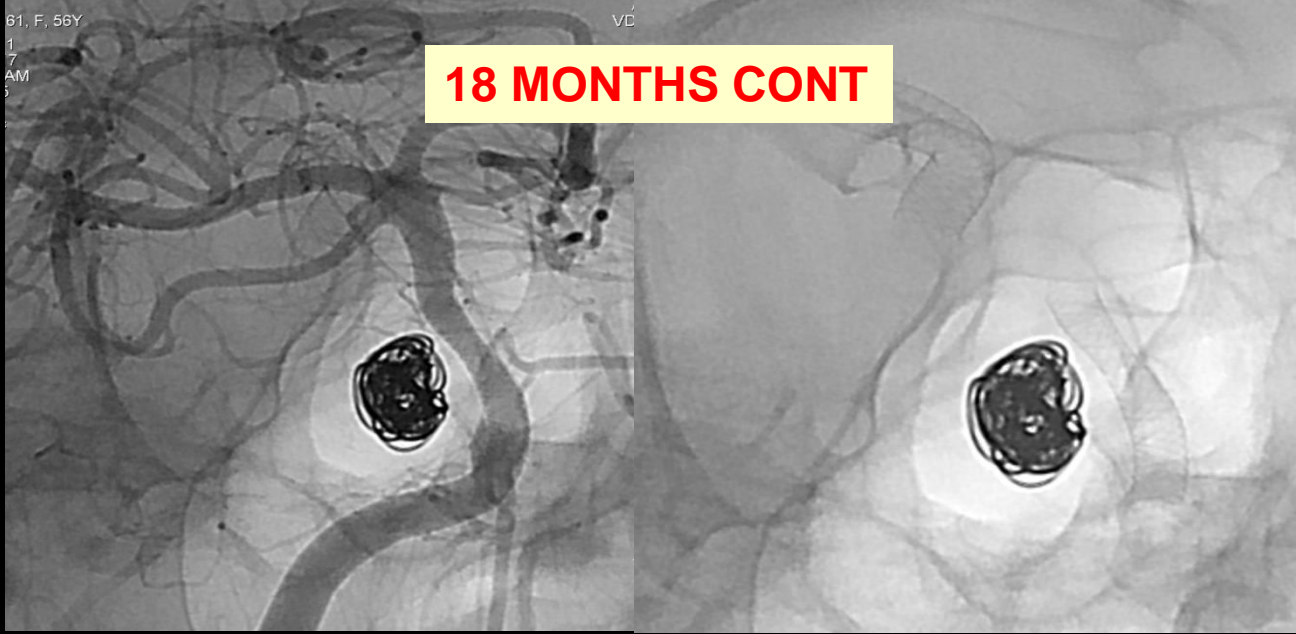
**18 MONTHS CONT**

**CLASS 1C OCCLUSION**

61, F, 56Y  
1  
7  
AM  
5

VD

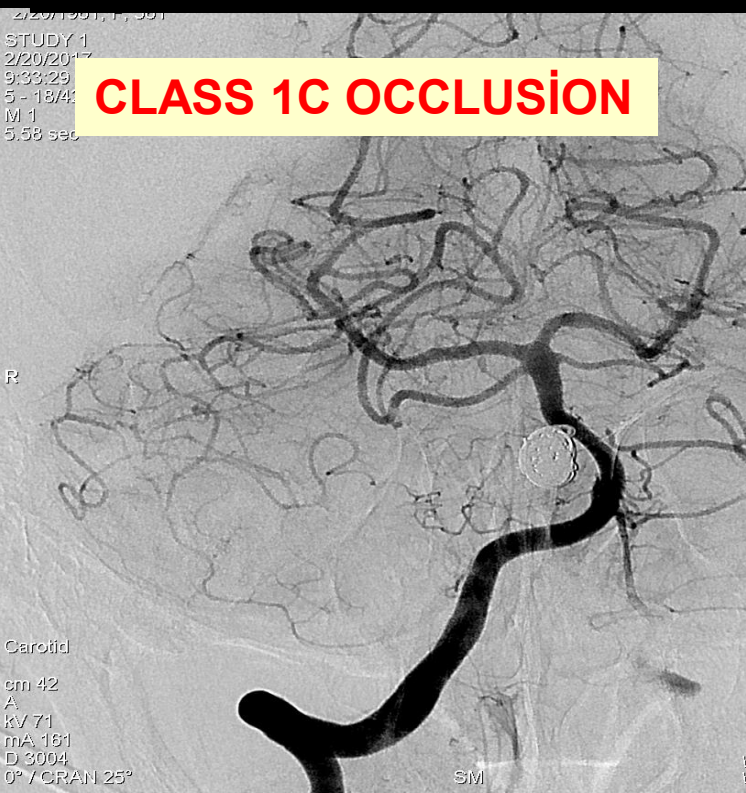
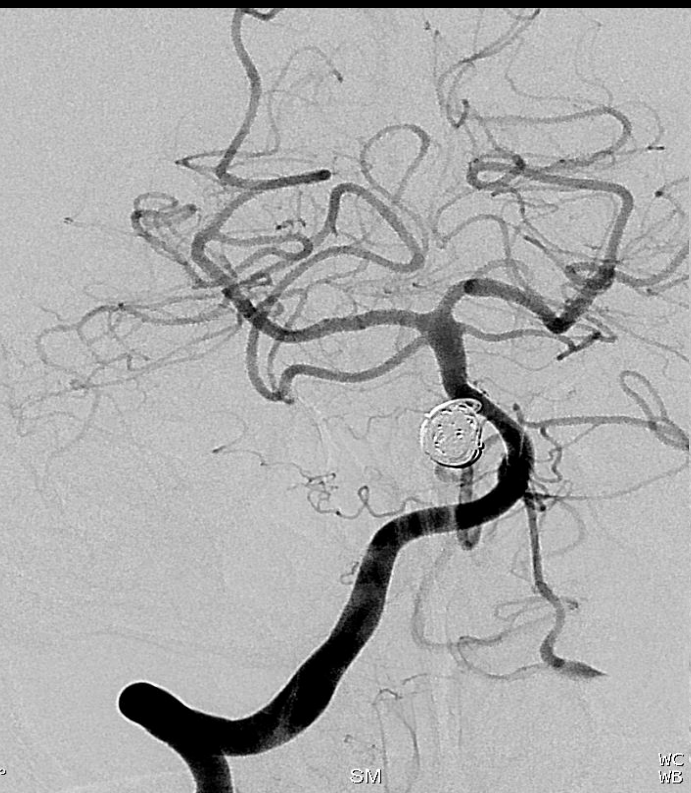
**18 MONTHS CONT**



2/20/1961, F, 56Y  
STUDY 1  
2/20/2017  
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5 - 18/42  
M 1  
5.58 sec

**CLASS 1C OCCLUSION**

\*2/20/1961, F, 56Y  
STUDY 1  
2/20/2017  
9:33:29 AM  
5 - 25/42  
M 1  
7.88 sec



Carotid  
cm 42  
A  
kV 71  
mA 161  
D 3004  
WB 0° / CRAN 25°

Carotid  
cm 42  
A  
kV 71  
mA 161  
D 3004  
WB 0° / CRAN 25°



**6 month control**



**18th month control**



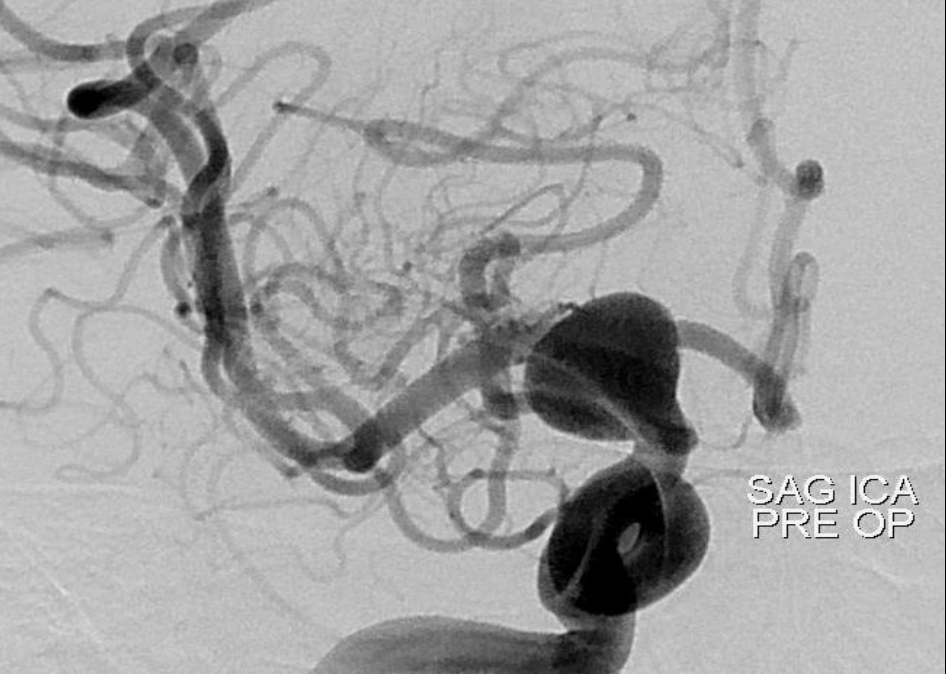
**3 years control**



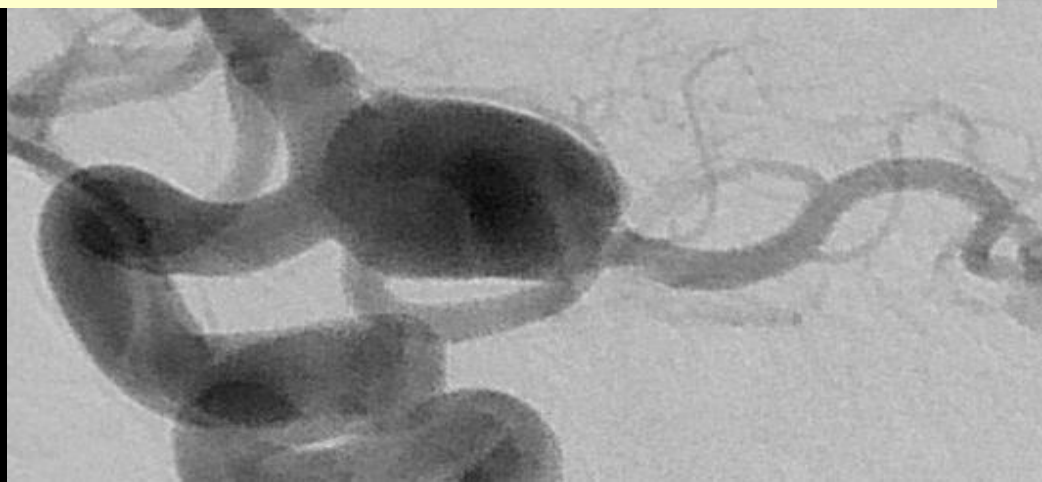
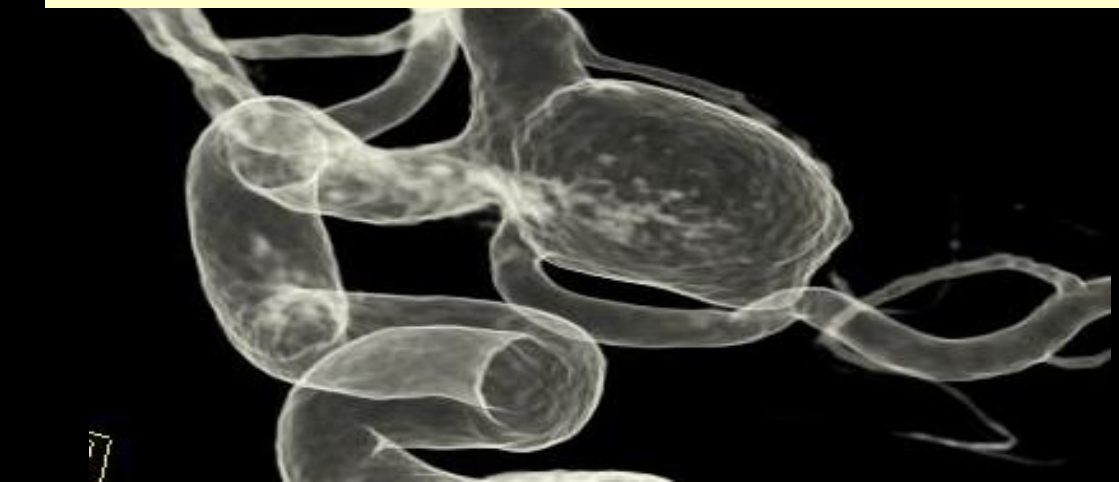
**... and RETX**



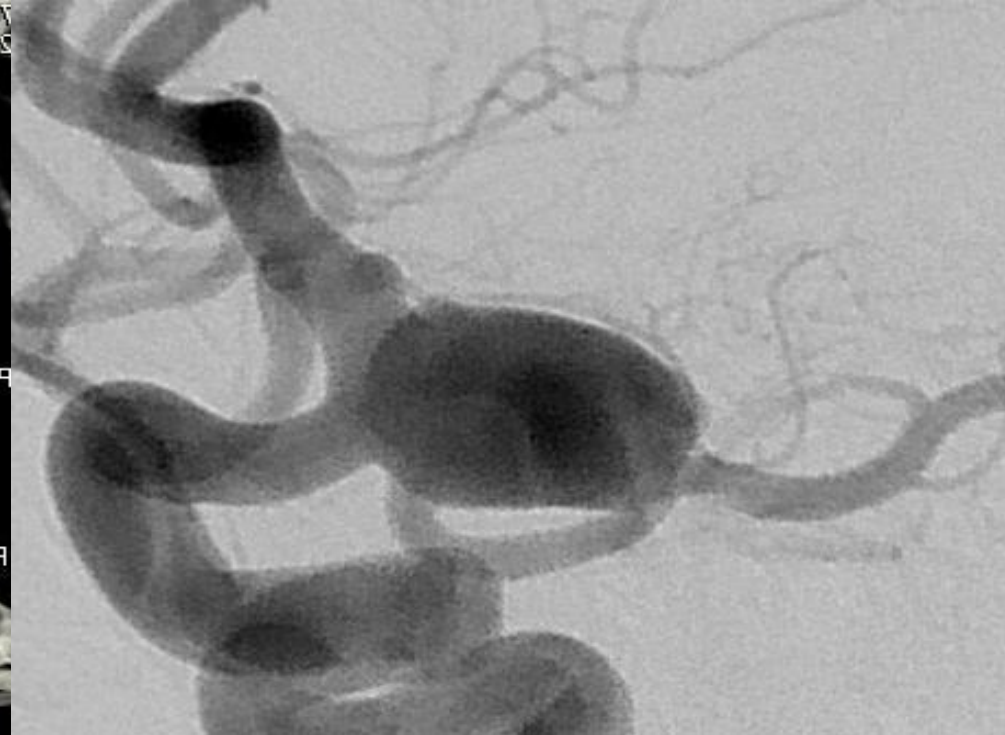
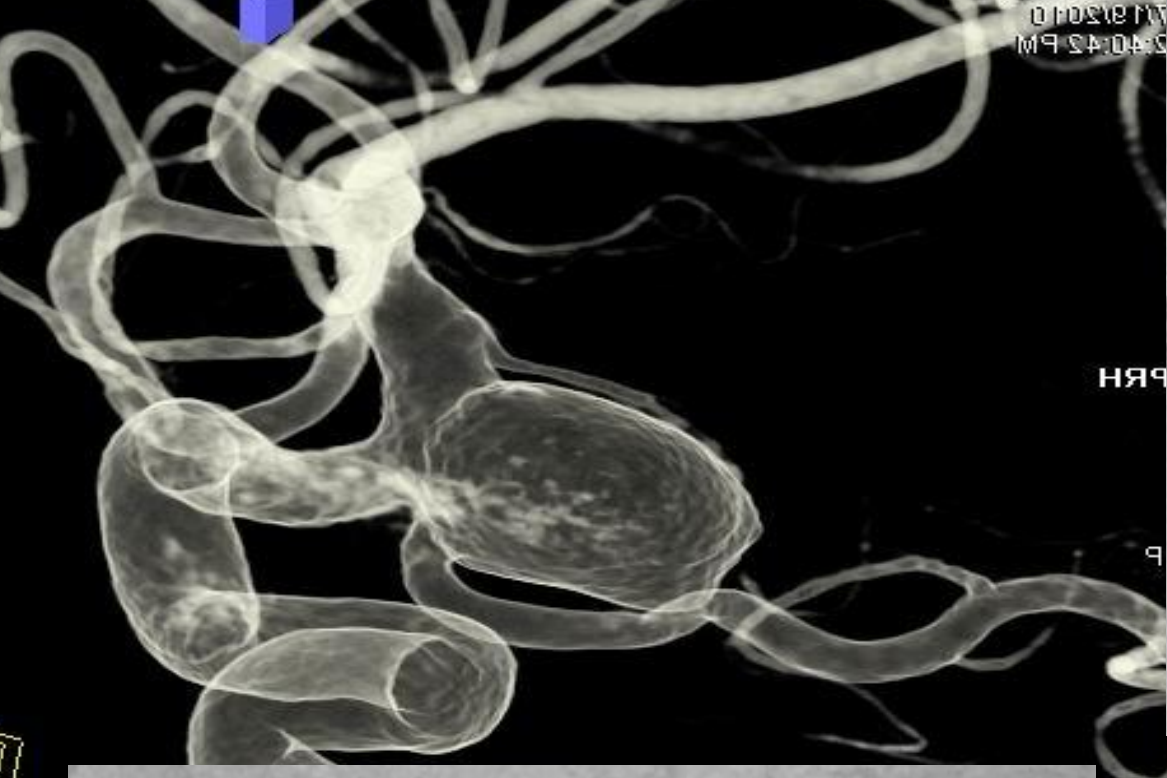




**51 yo male presented with headache and right partial 3rd nerve palsy had a diagnosis of large right Pcom aneurysm with fetal Pcom coming off the sac**



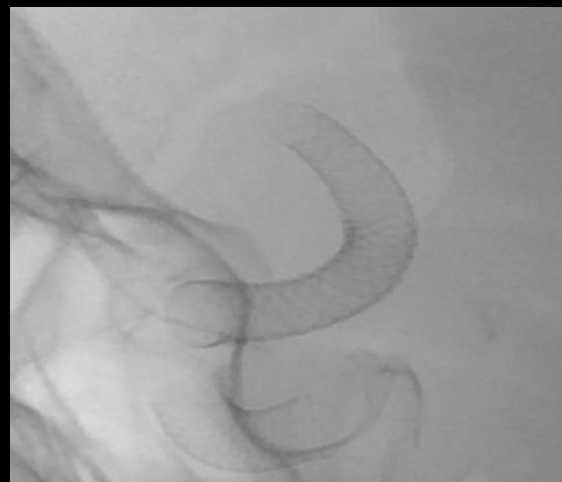


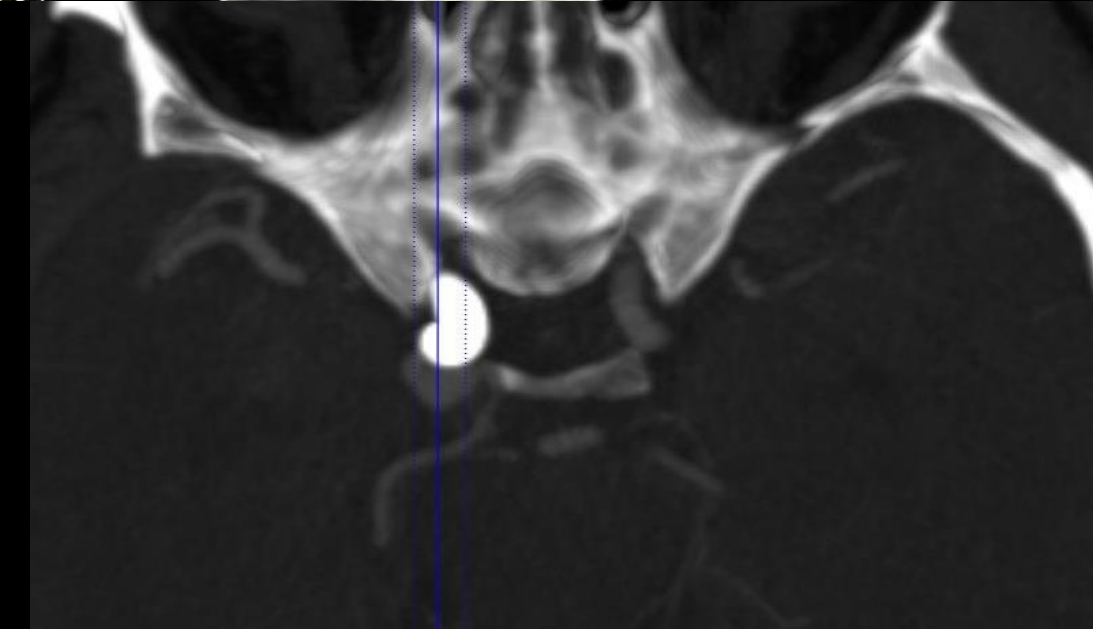




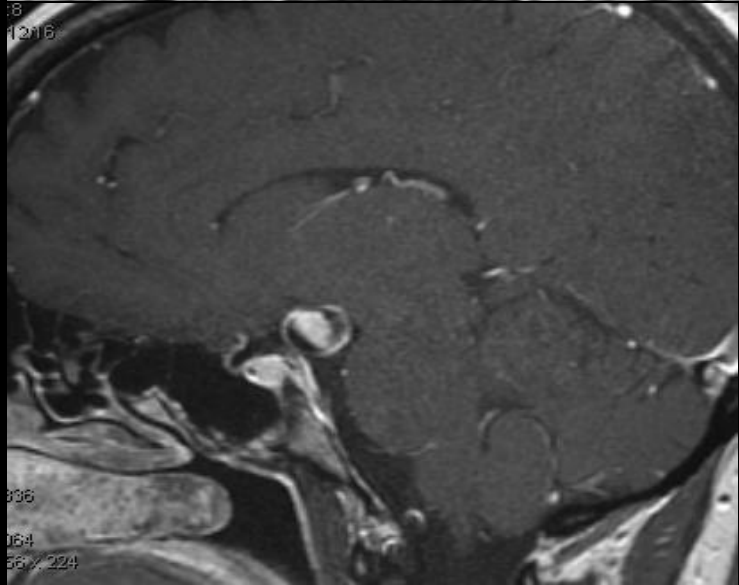
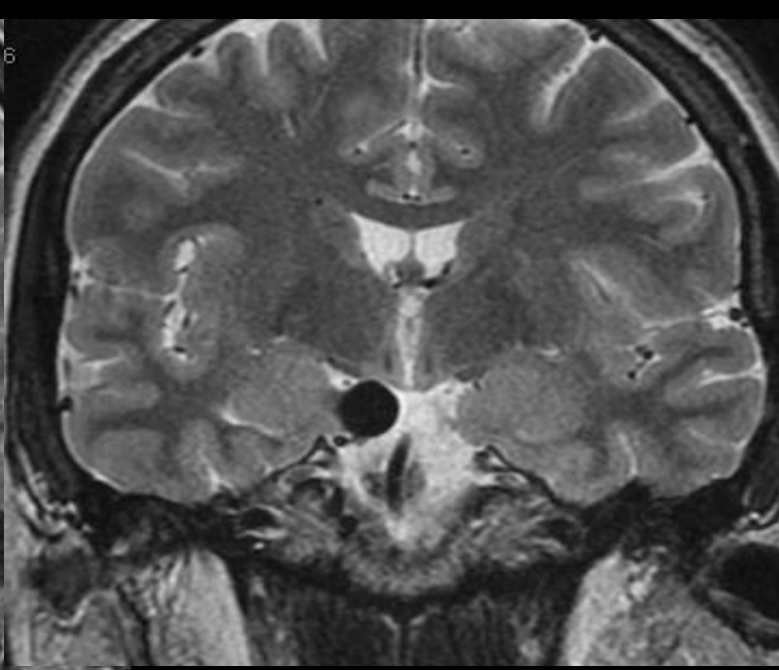
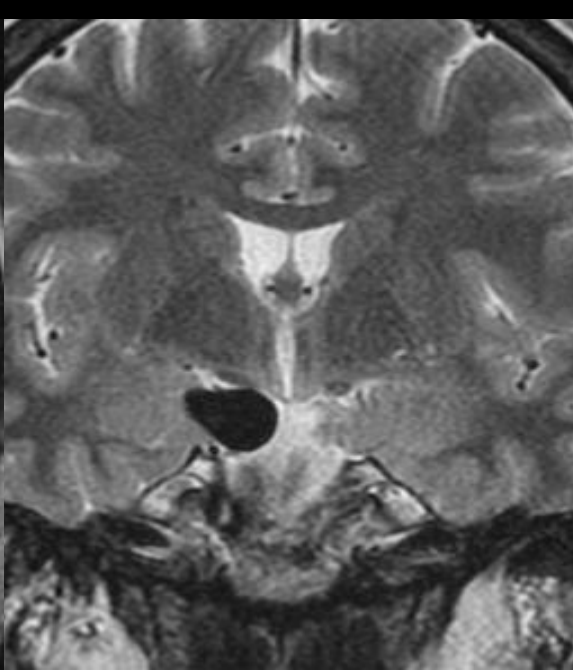
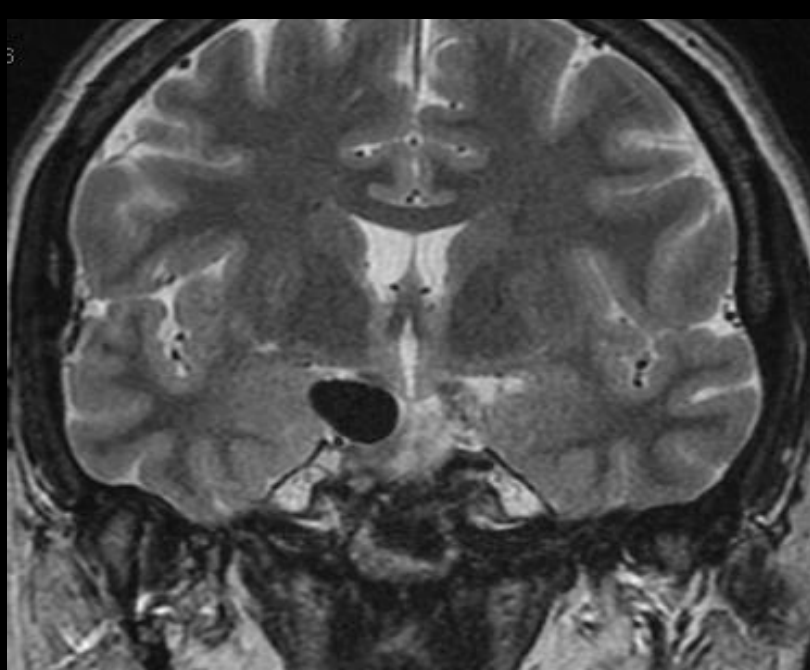
**1.5 year control**

**RETREATMENT**



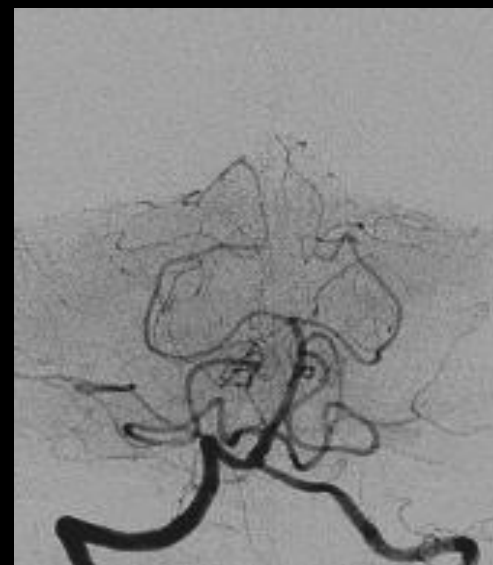
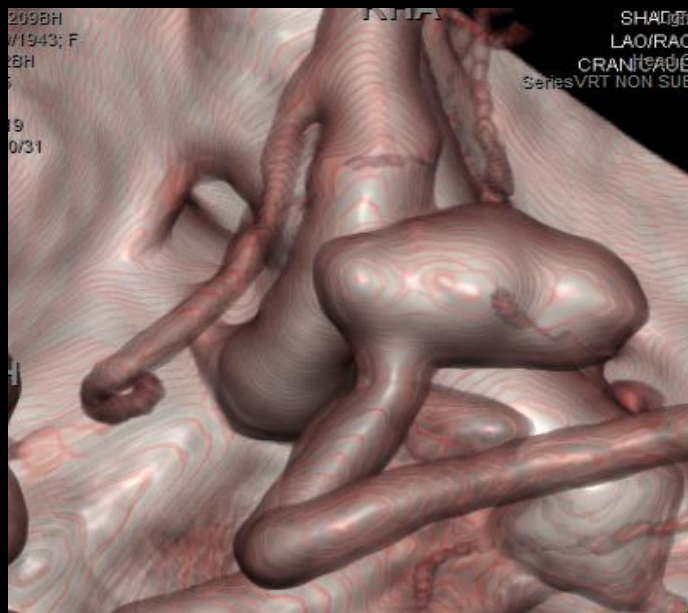
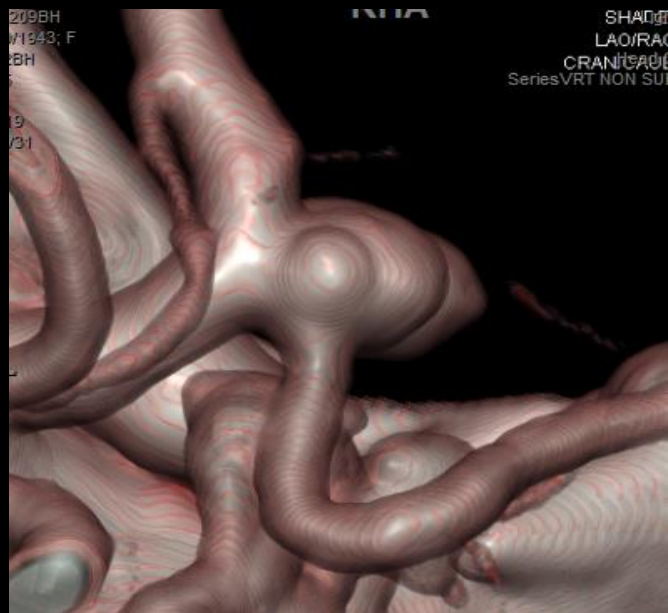


**3 year-CTA**



66 year old right handed woman with 1 month h/odiplopia  
-exam significant for right 3<sup>rd</sup> nerve paresis

***CASE FROM PETER KIM NELSON***



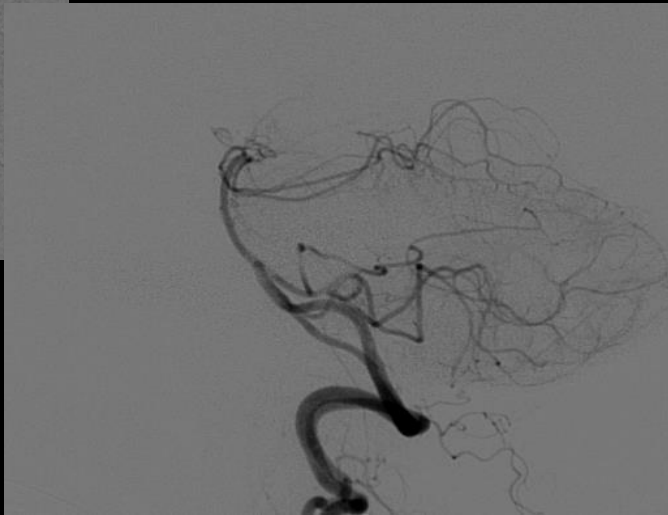
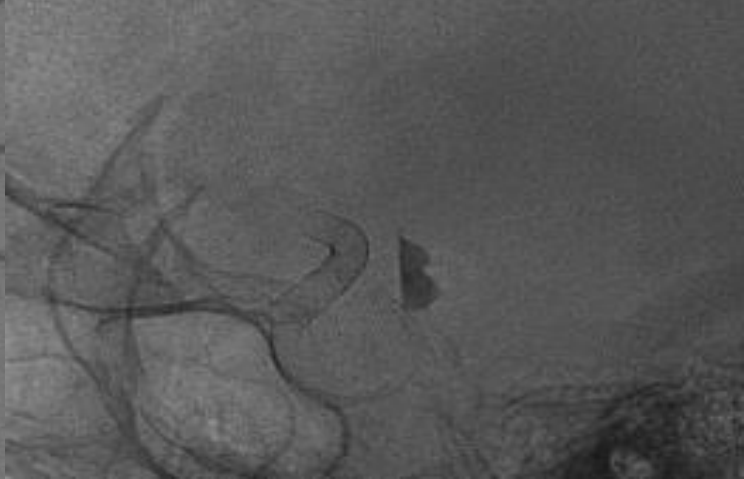
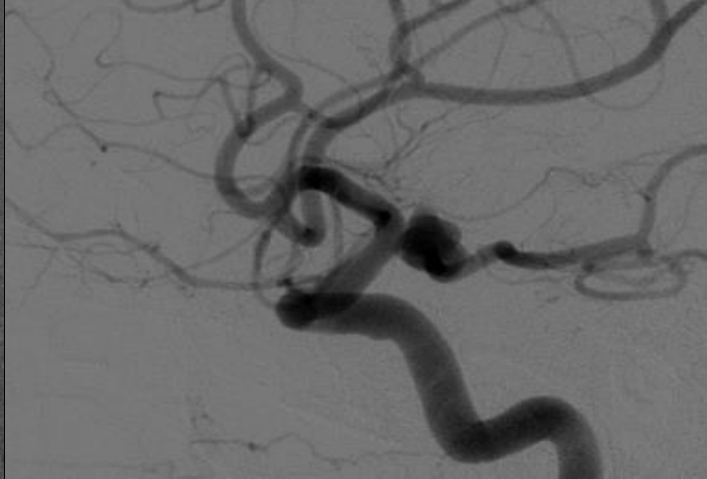
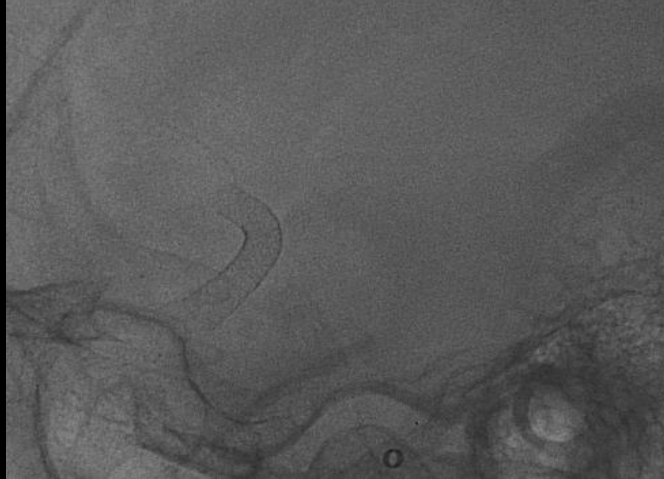
# Treatment failure of fetal posterior communicating artery aneurysms with the pipeline embolization device.

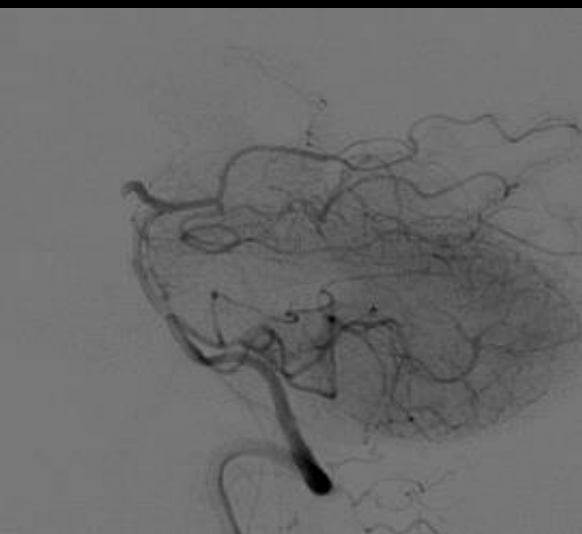
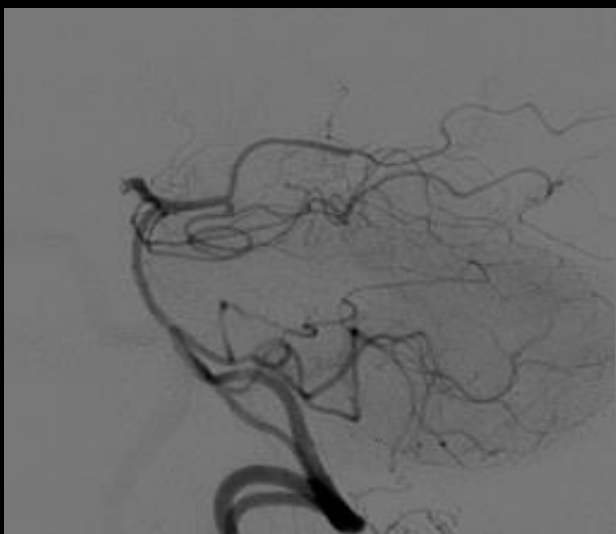
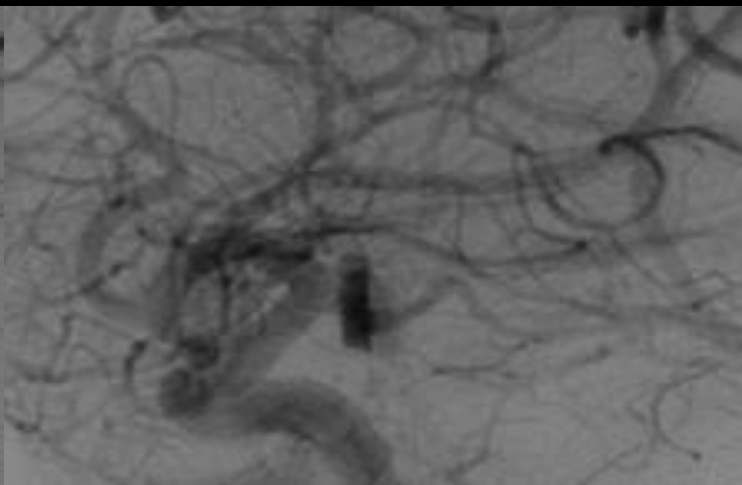
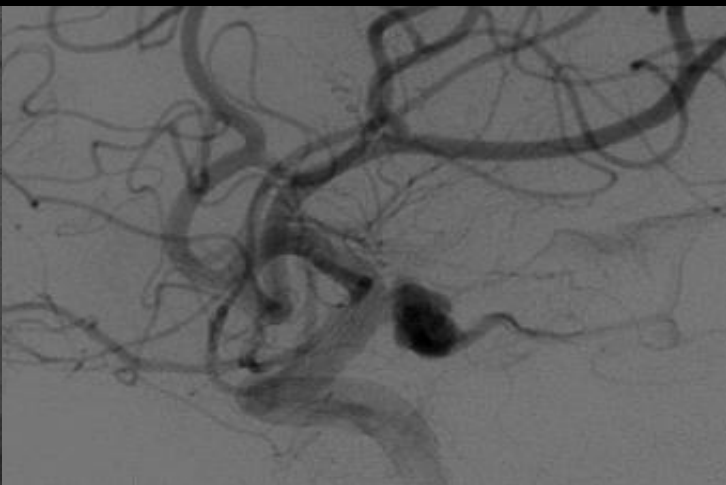
Kan P, Duckworth E, Puri A, Velat G, Wakhloo A.

J Neurointerv Surg. 2015 Sep 11. [Epub ahead of print]

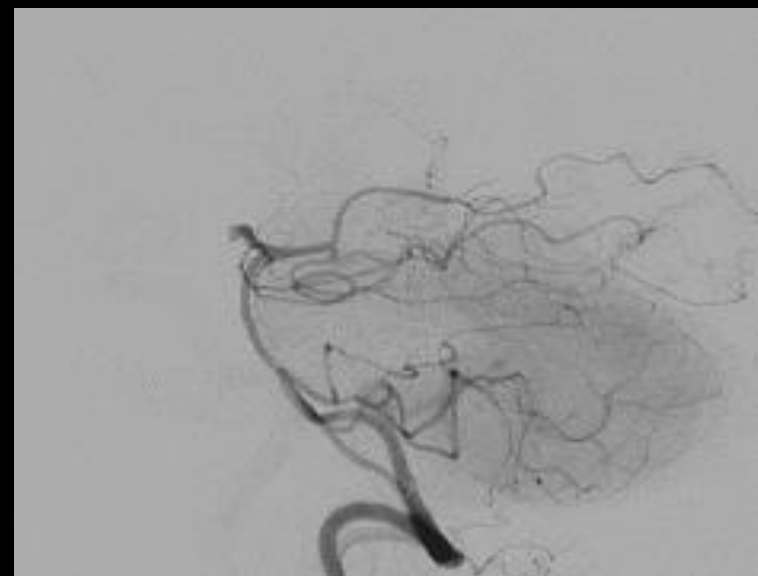
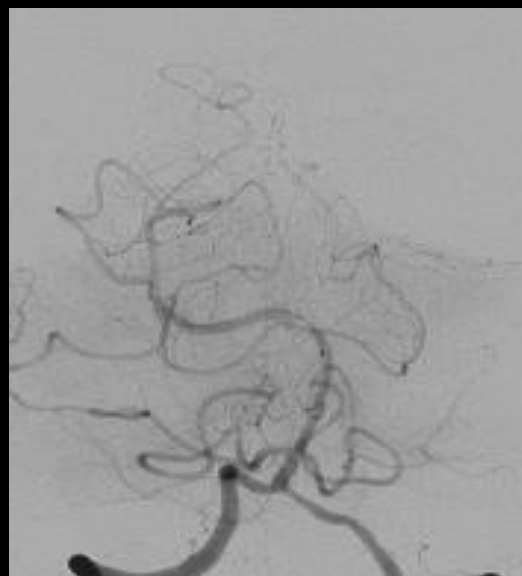
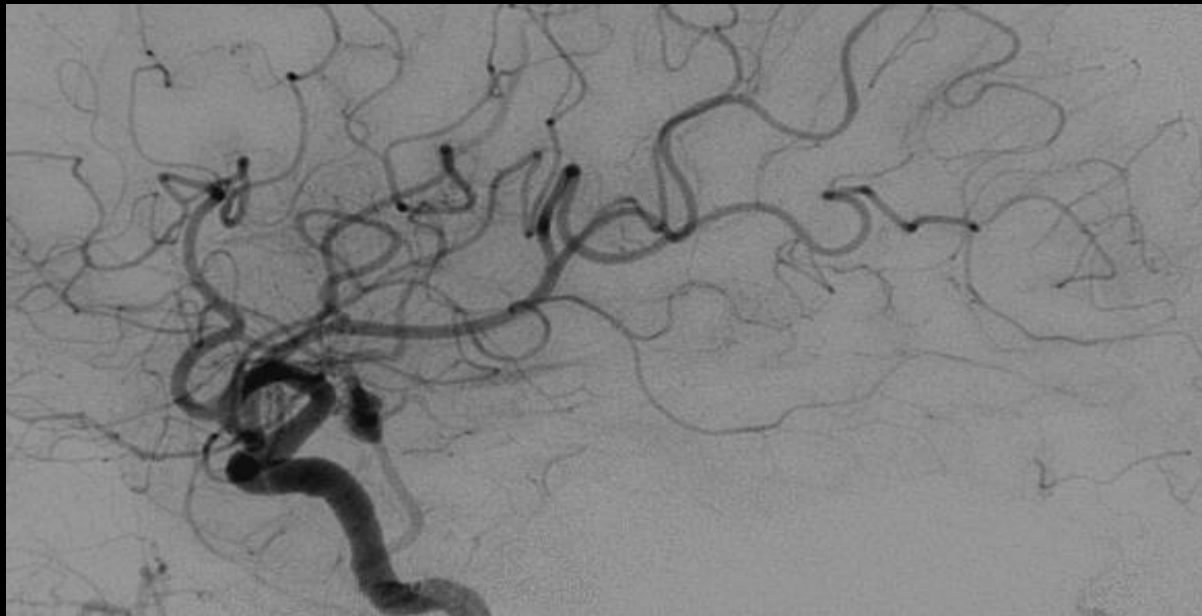
## Abstract

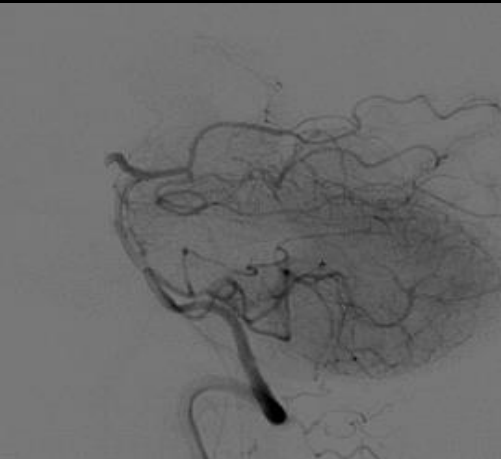
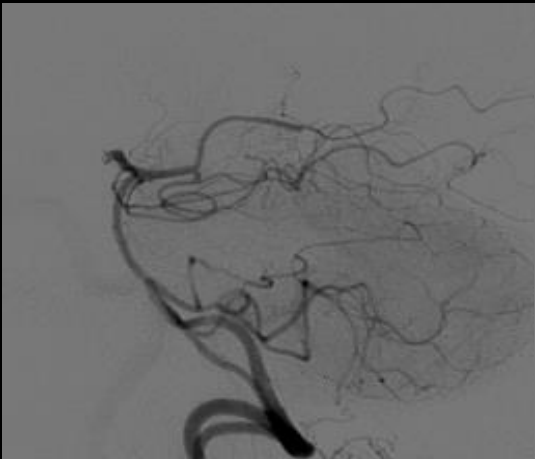
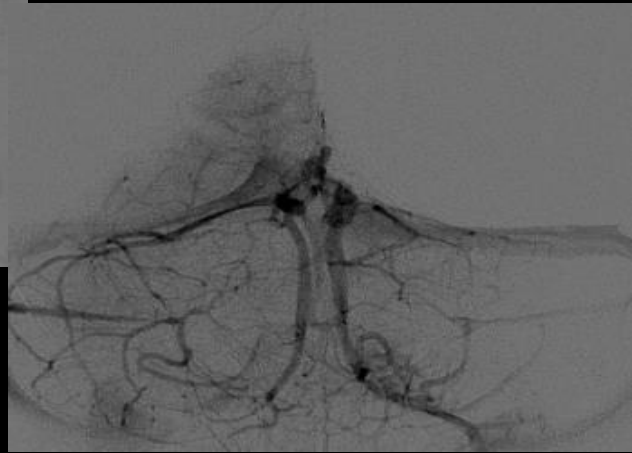
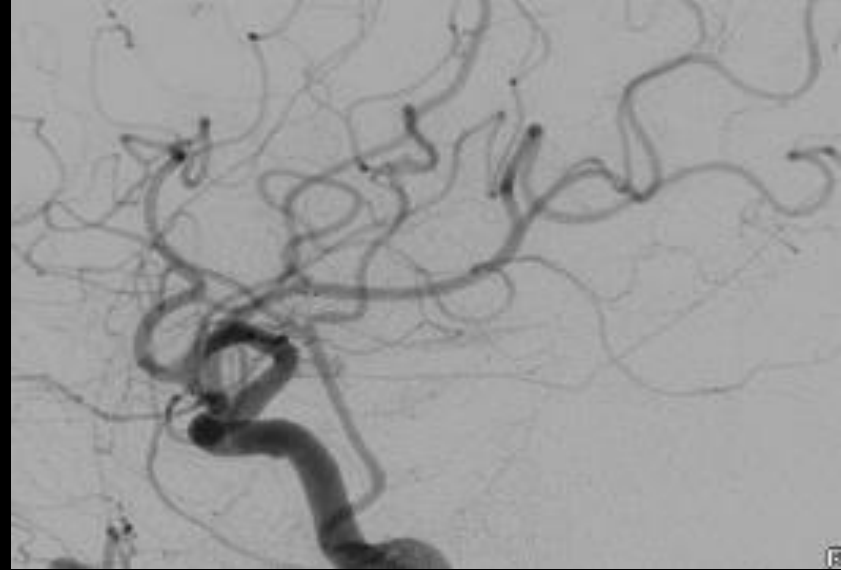
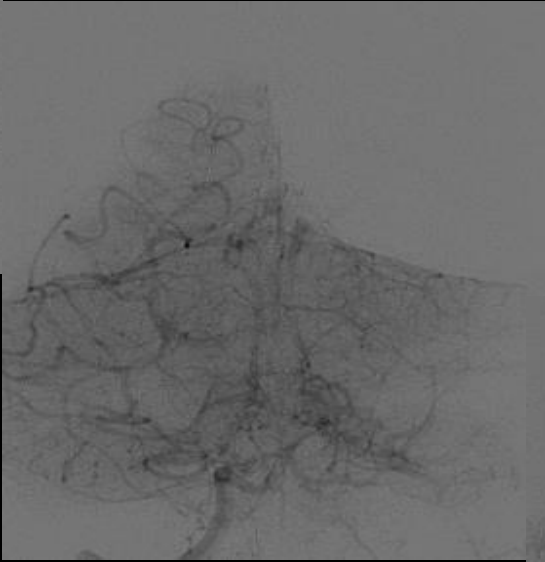
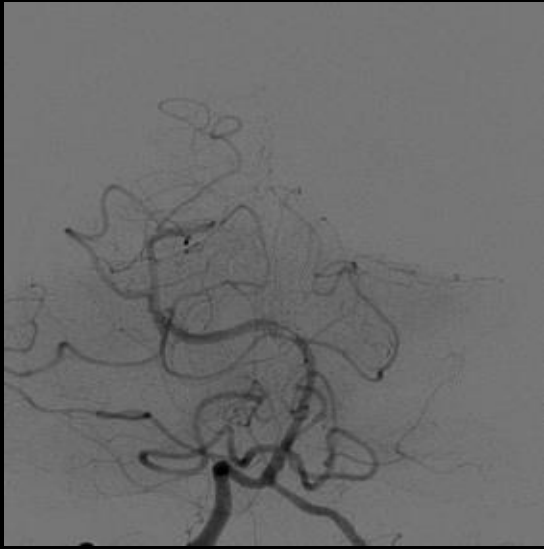
Aneurysms that involve the internal carotid artery and posterior communicating artery junction and incorporate a fetal posterior cerebral artery are known as fetal posterior communicating artery aneurysms. We report the outcomes of four patients with fetal posterior communicating artery aneurysms who underwent treatment with the pipeline embolization device with or without adjunctive coil embolization. In our study, all four patients failed to achieve aneurysm occlusion at the last follow-up evaluation. **Based on our results, we currently do not recommend the use of the flow diverter for the treatment of fetal posterior communicating artery aneurysms.**







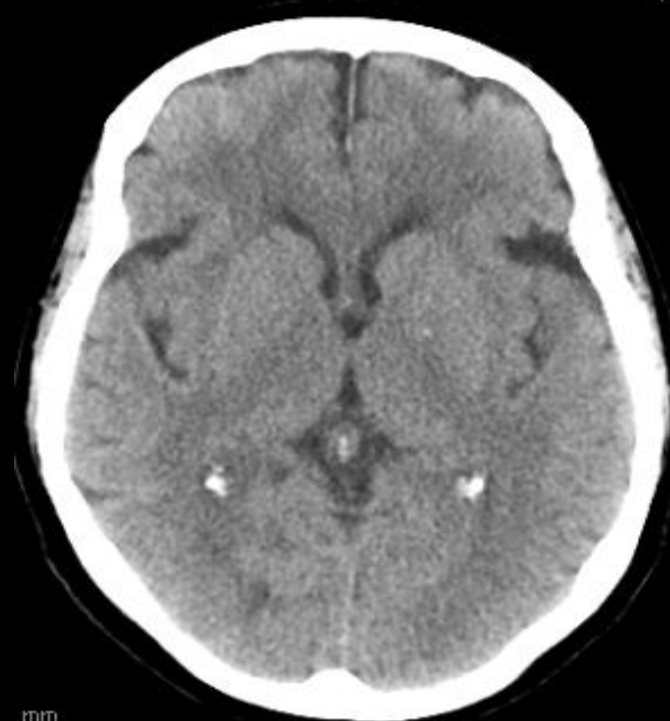




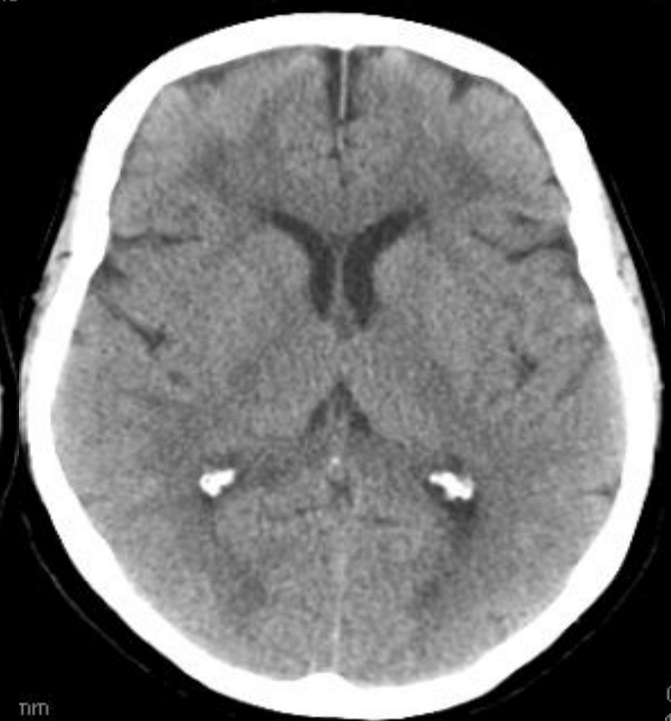
HE

HE

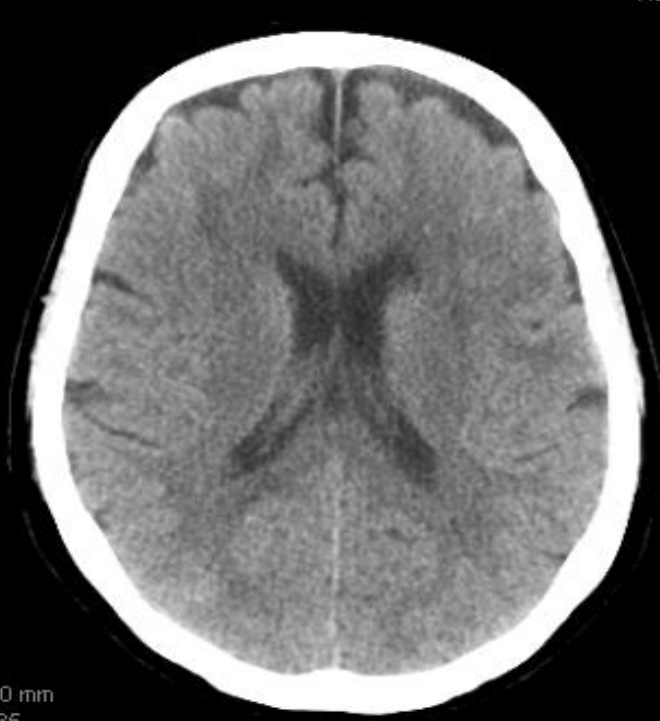
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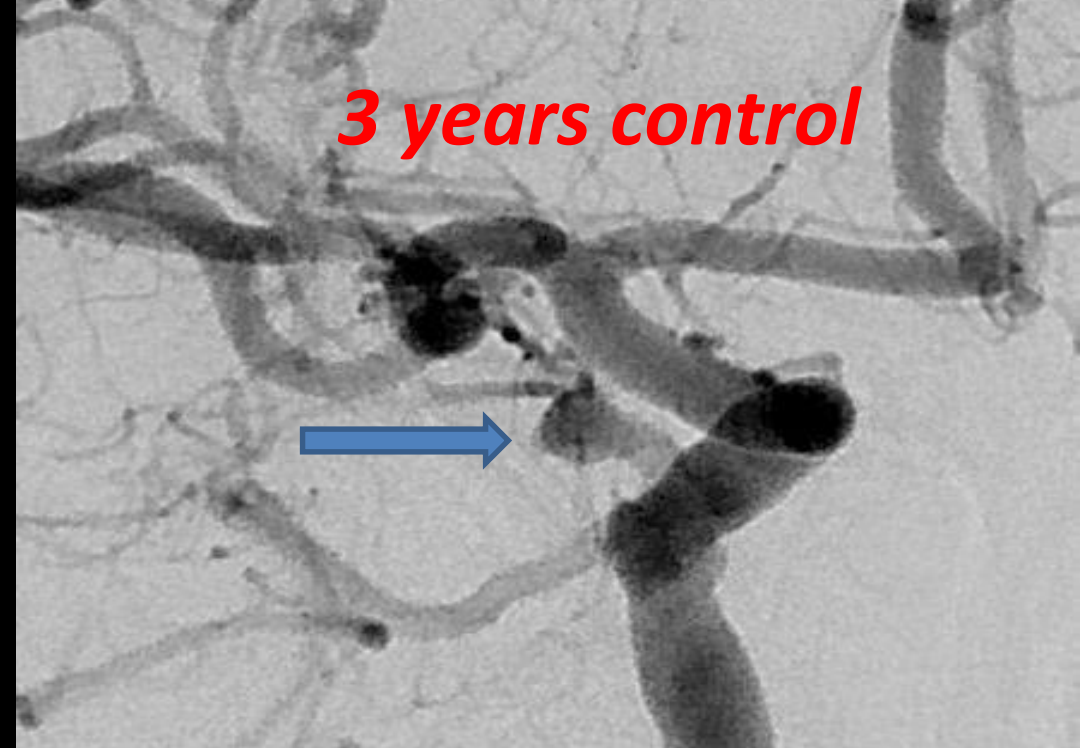
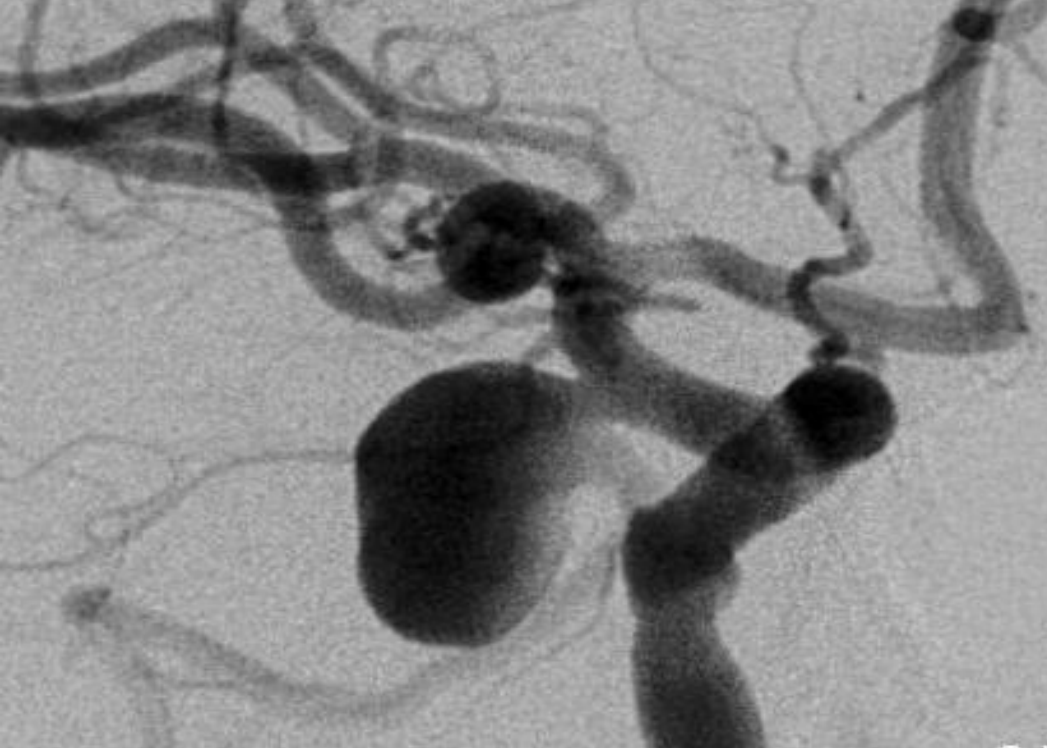
mm



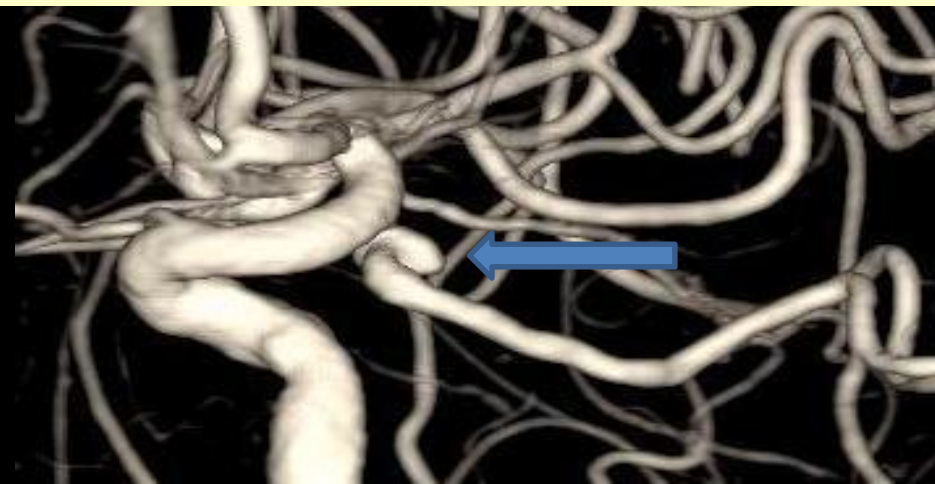
mm



00 mm  
135

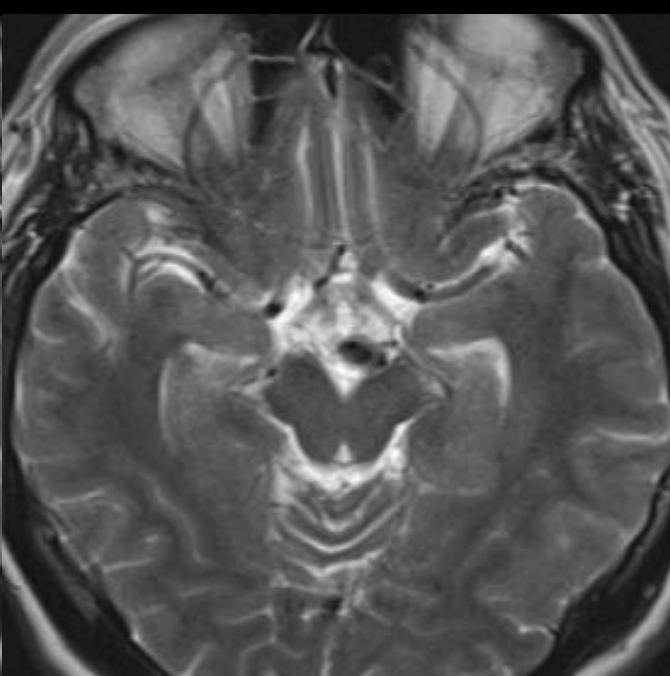
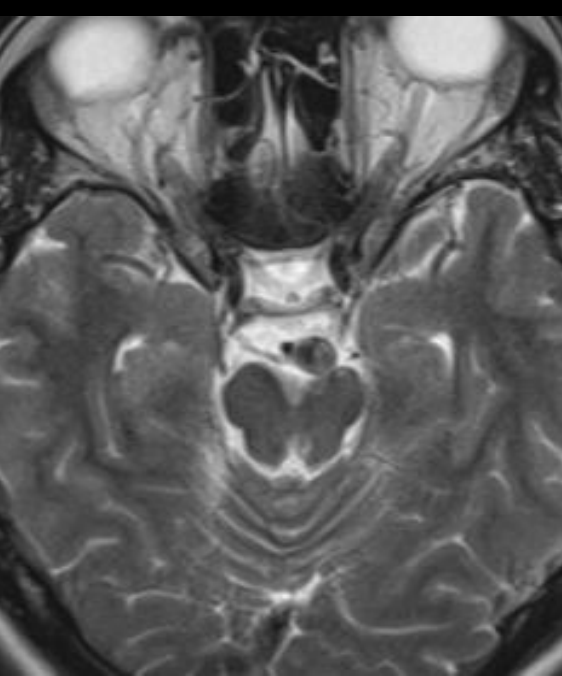
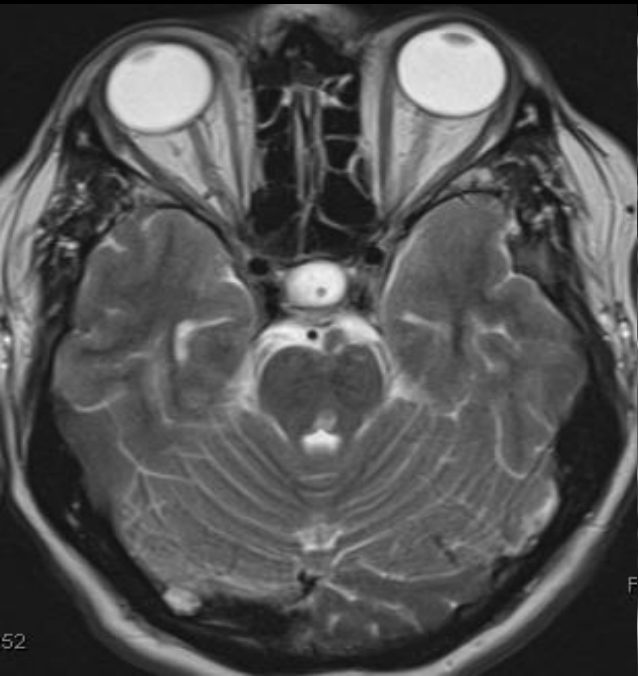


***This process is not always completed with perfect reconstruction but remodelling of the aneurysm sac may end up with stable remnant that become continuation of the vessel with flow demand...***

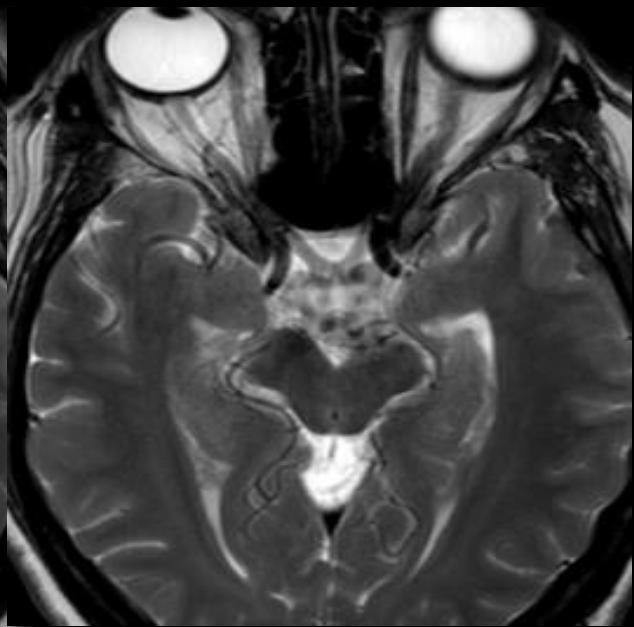
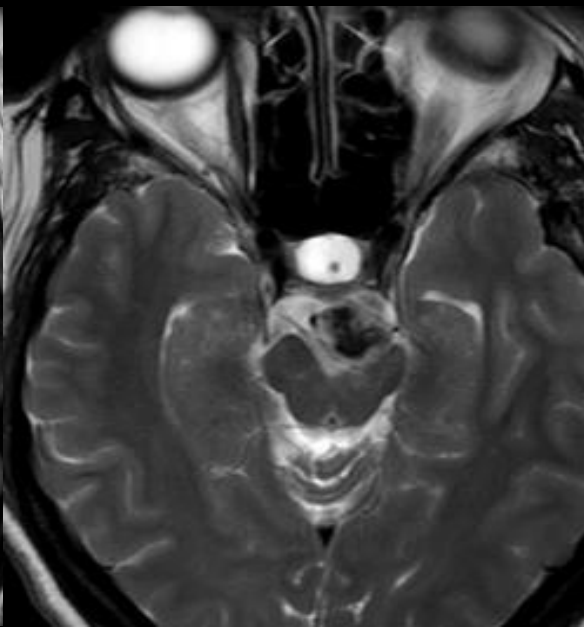
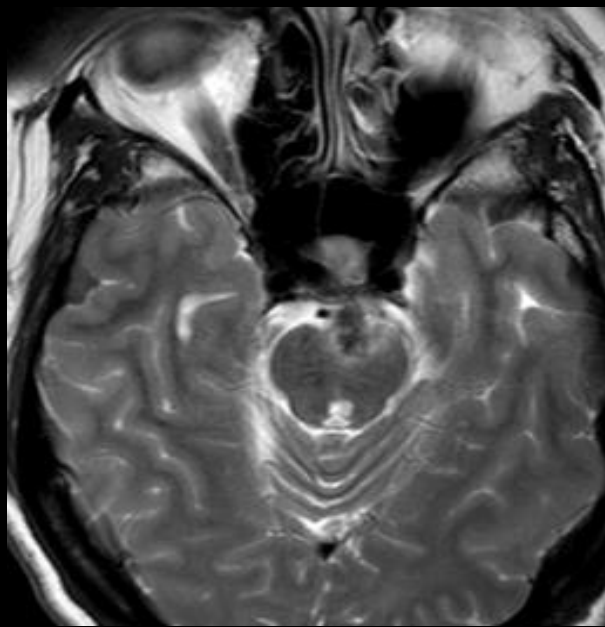


# Case 4

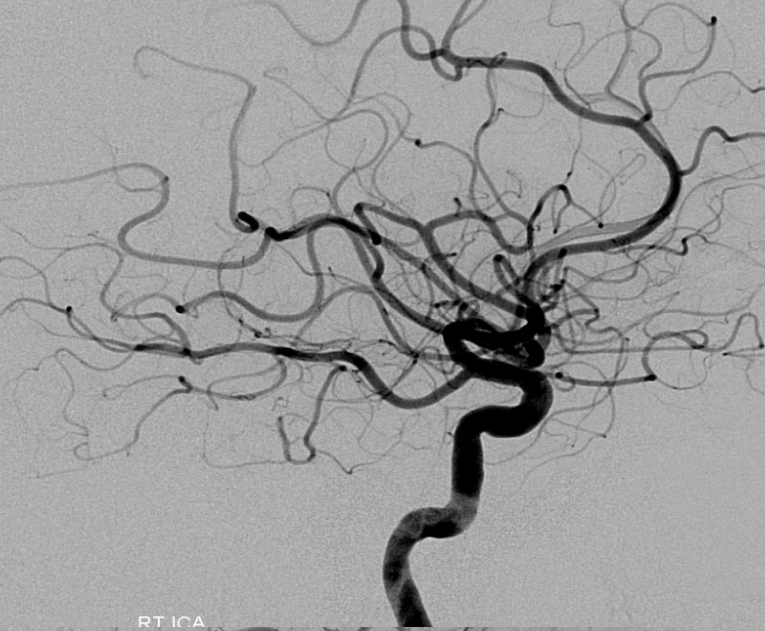
- 51 year old left handed woman presenting with diplopia related to left 3<sup>rd</sup> nerve palsy. Symptoms initially resolved, however, recurred 8 months later; now accompanied with novel headache.



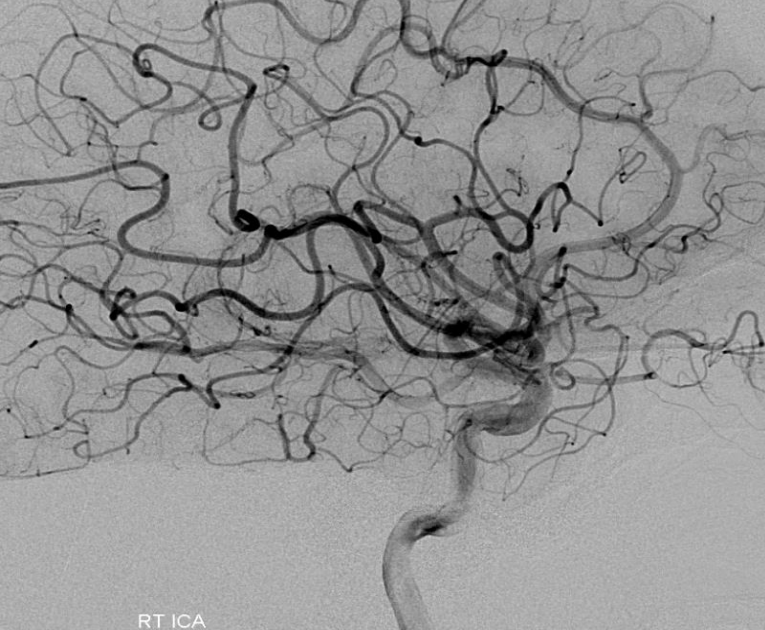
52







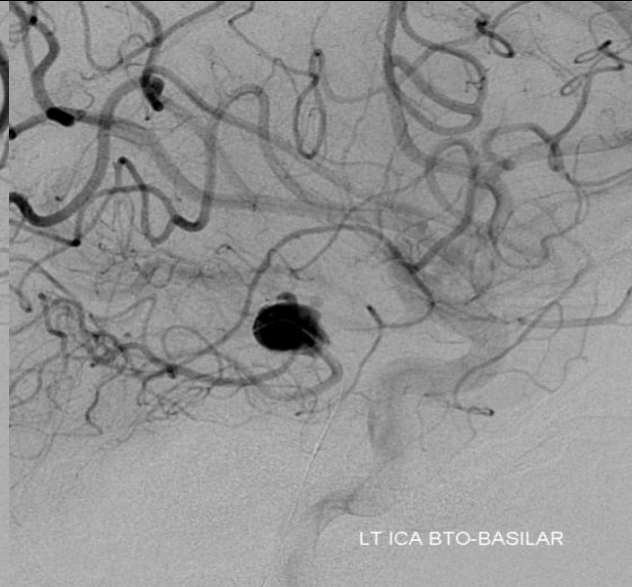
RT ICA



RT ICA



LT ICA BTO-BASILAR



LT ICA BTO-BASILAR

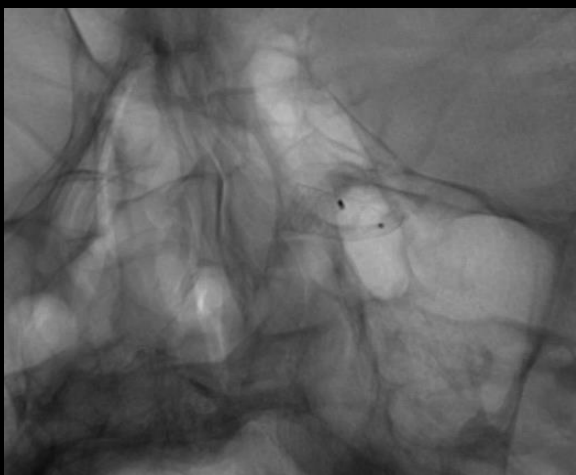


LT ICA BTO-BASILAR



LT ICA BTO-BASILAR





LT VERT POST-EMBO

LT VERT POST-EMBO

LT VERT POST-EMBO

LT VERT POST-EMBO

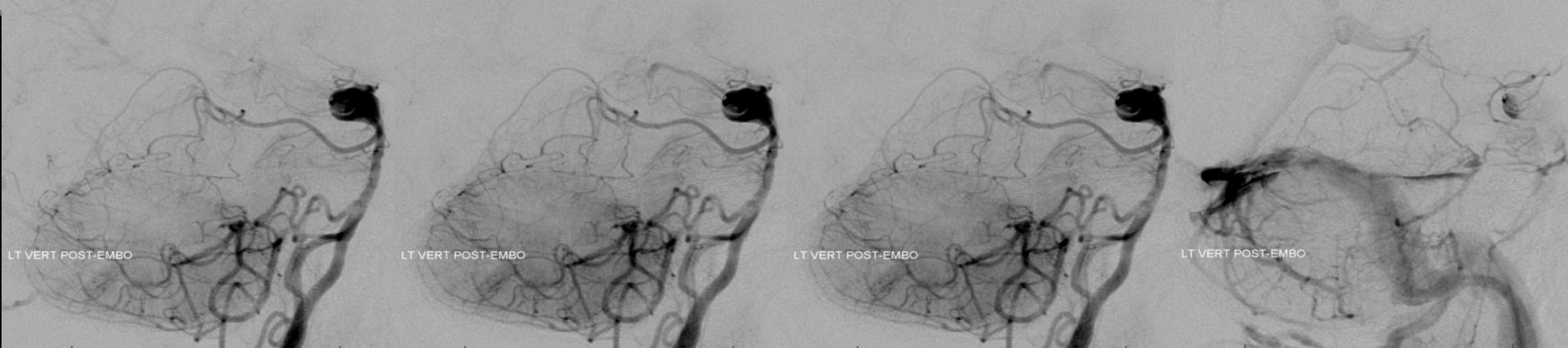


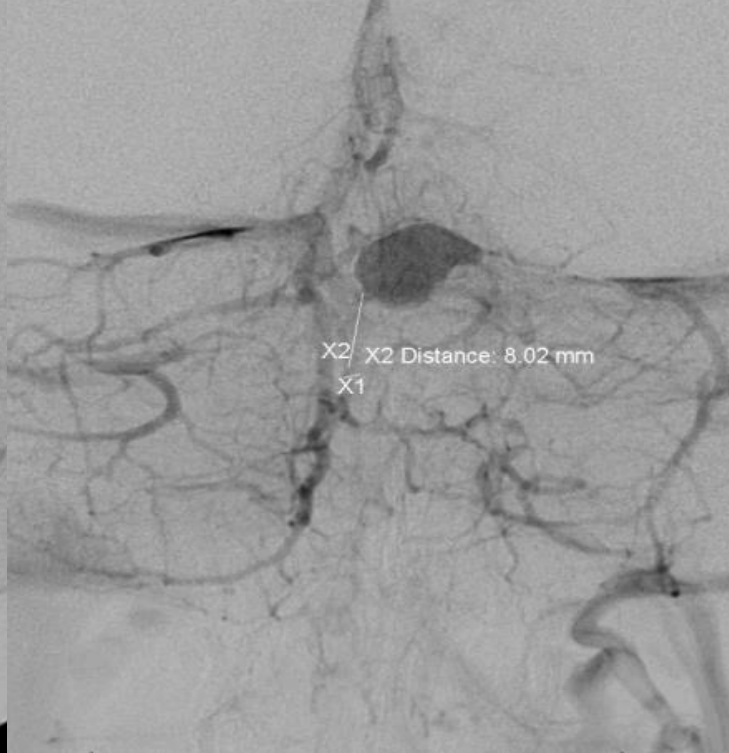
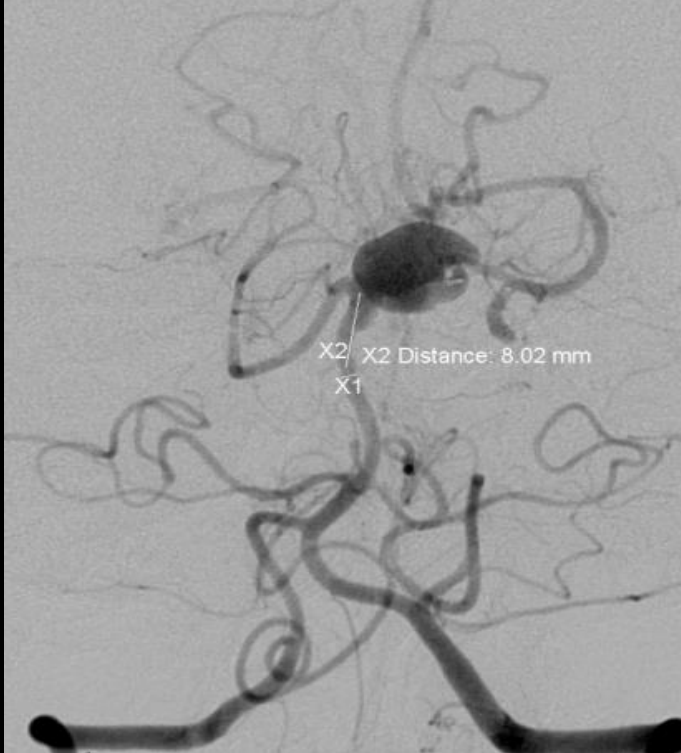
LT VERT POST-EMBO

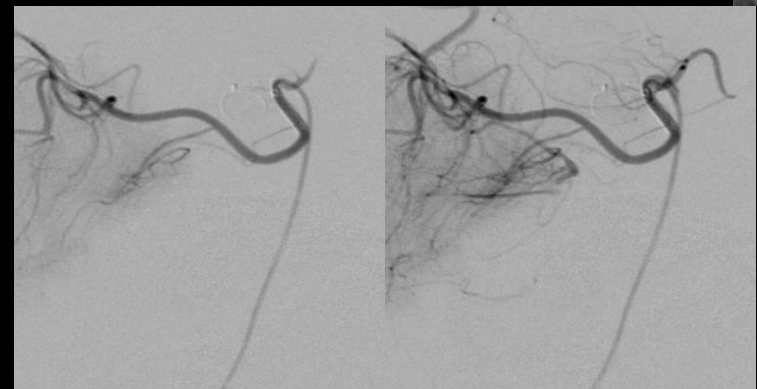
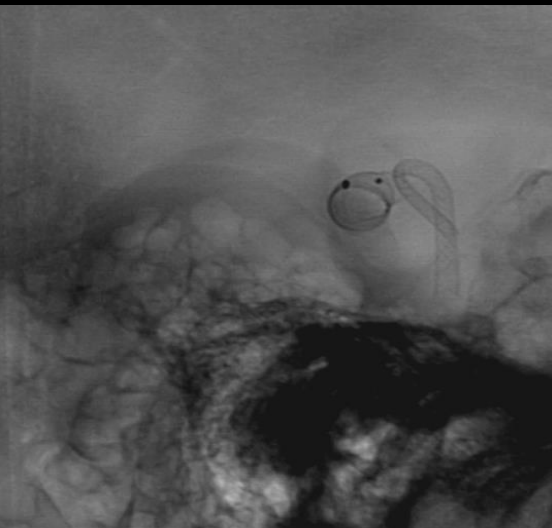
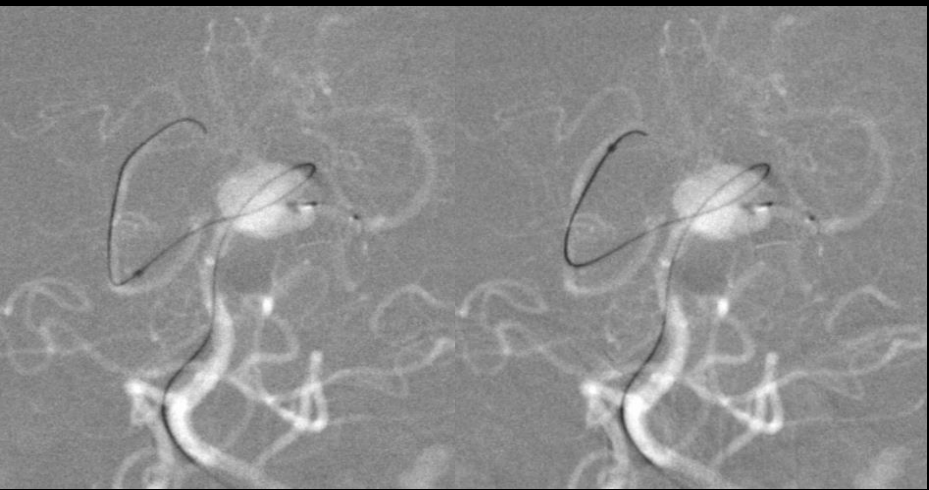
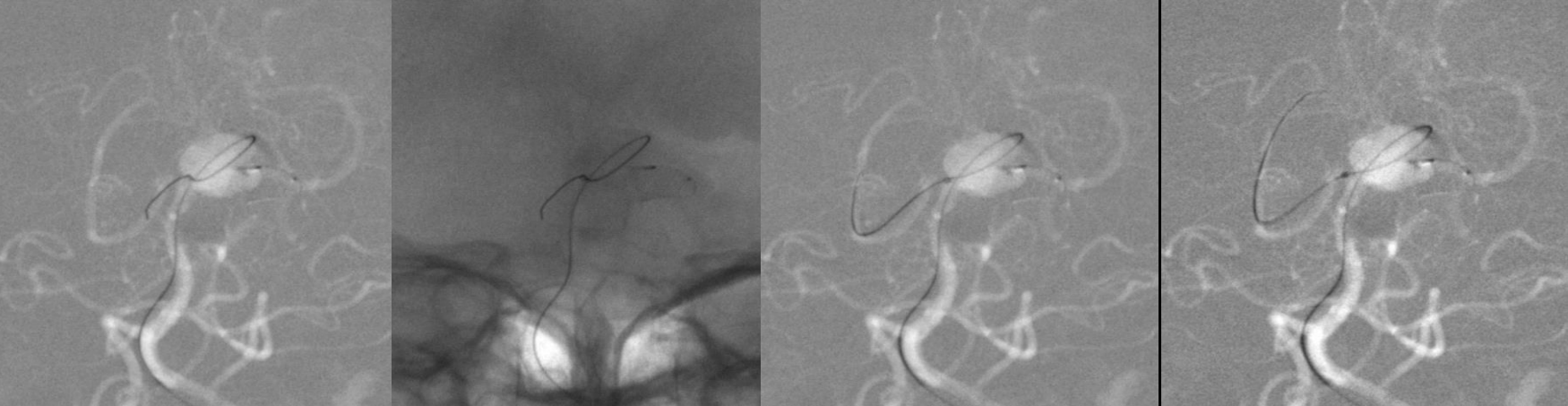
LT VERT POST-EMBO

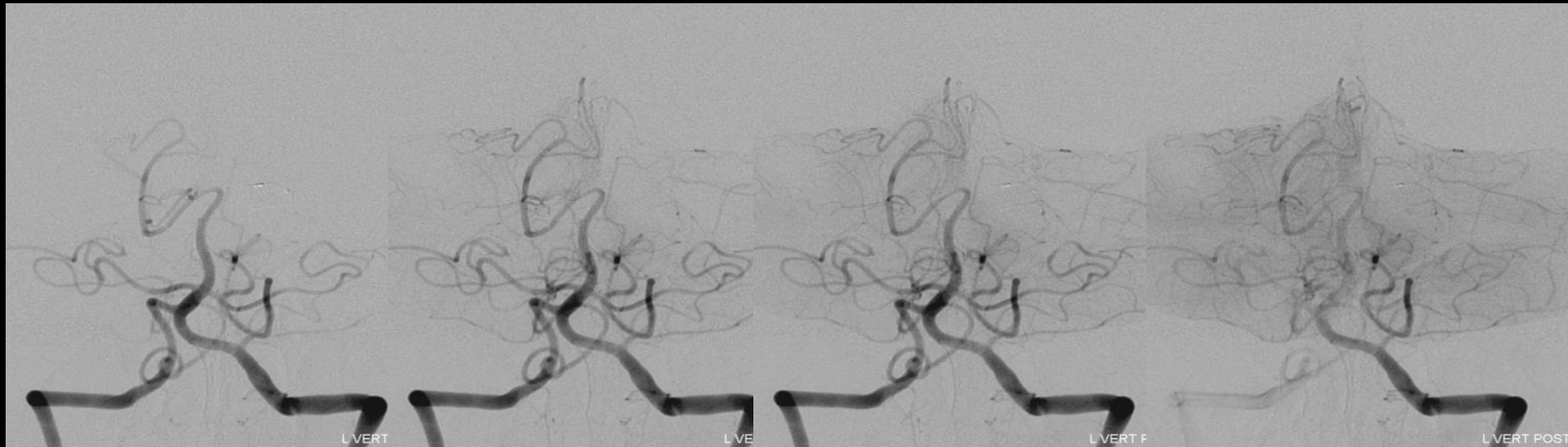
LT VERT POST-EMBO

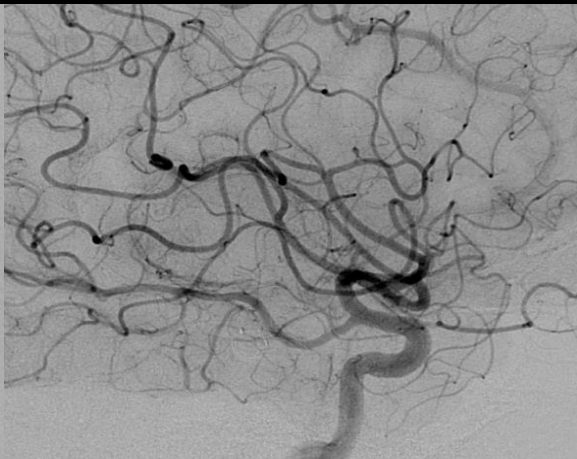
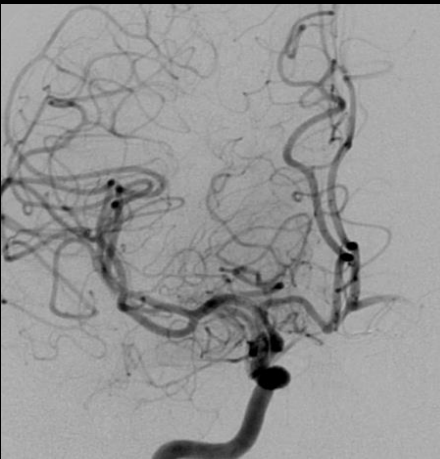
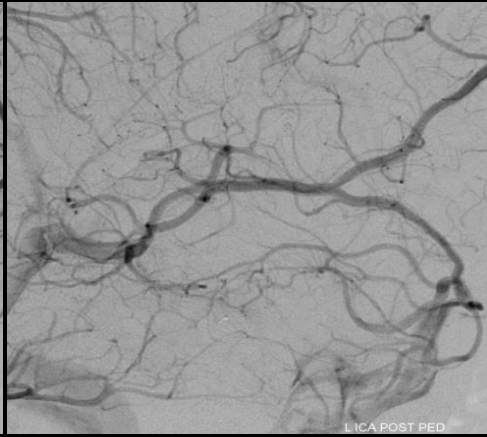
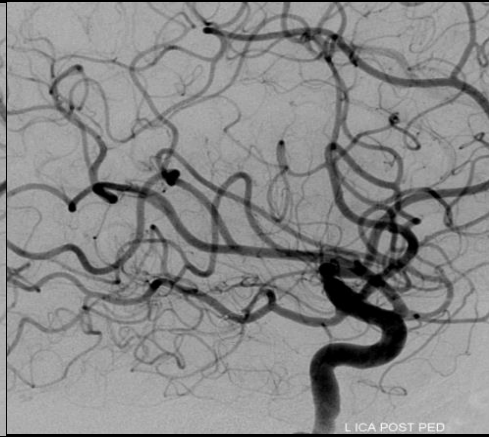
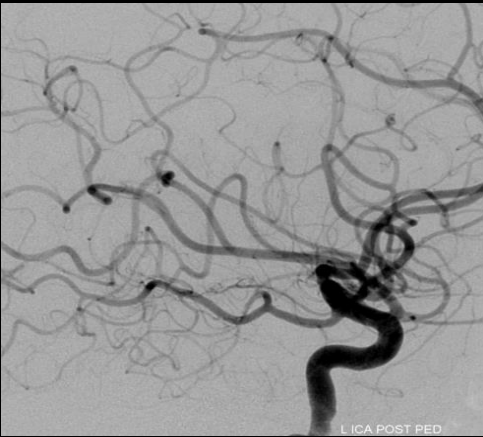
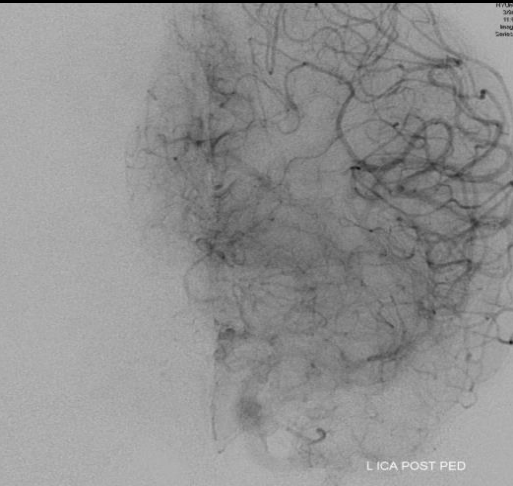
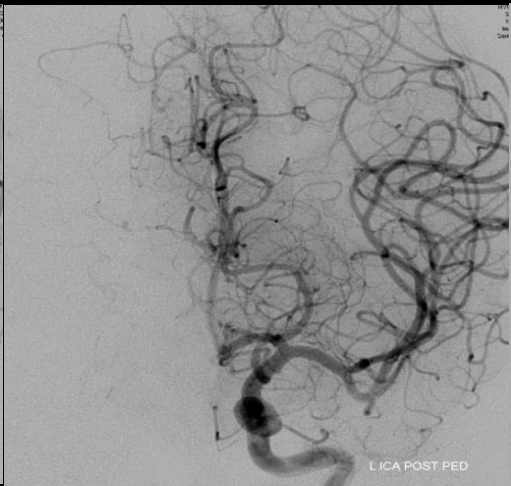
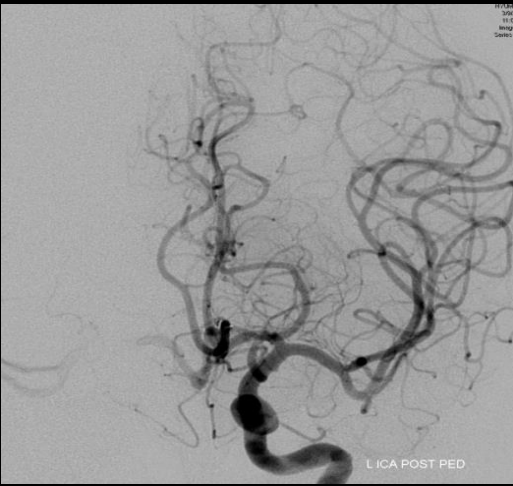
LT VERT POST-EMBO

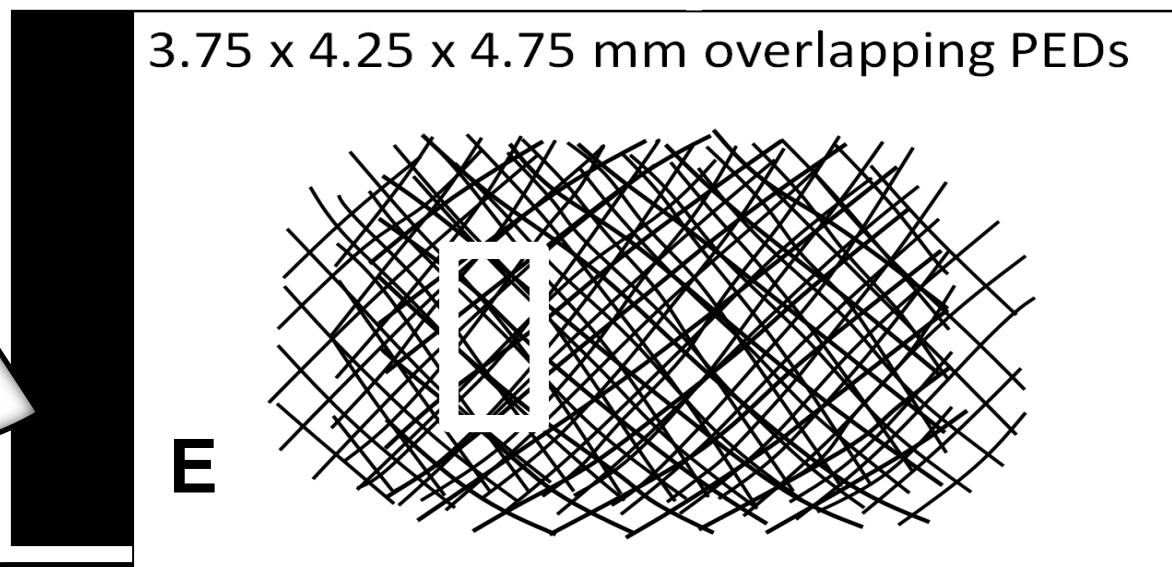
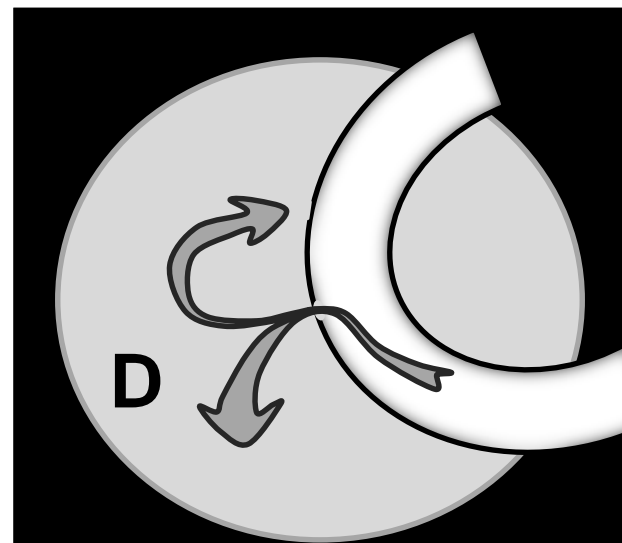
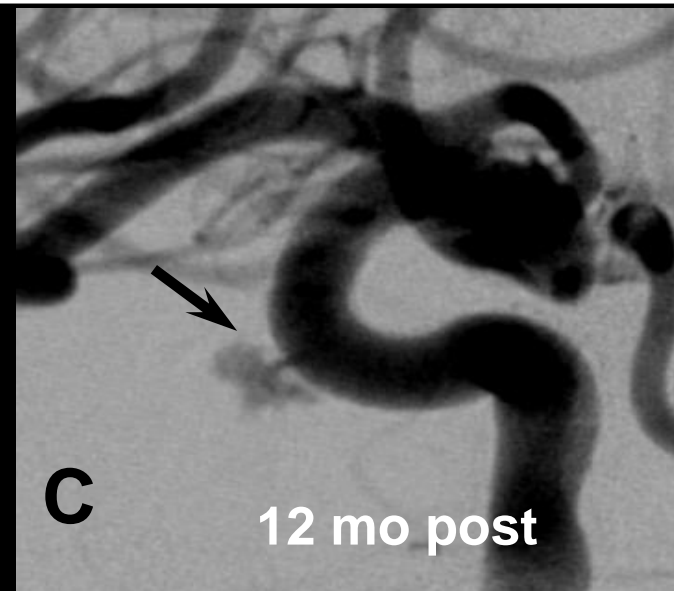
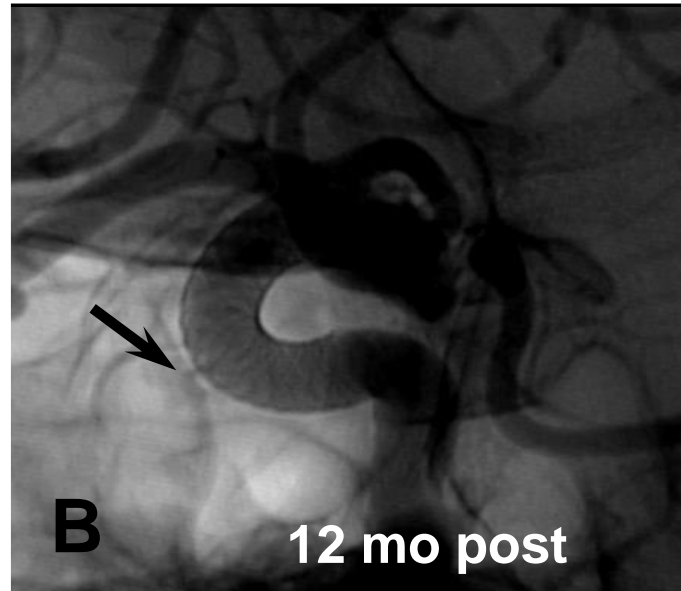
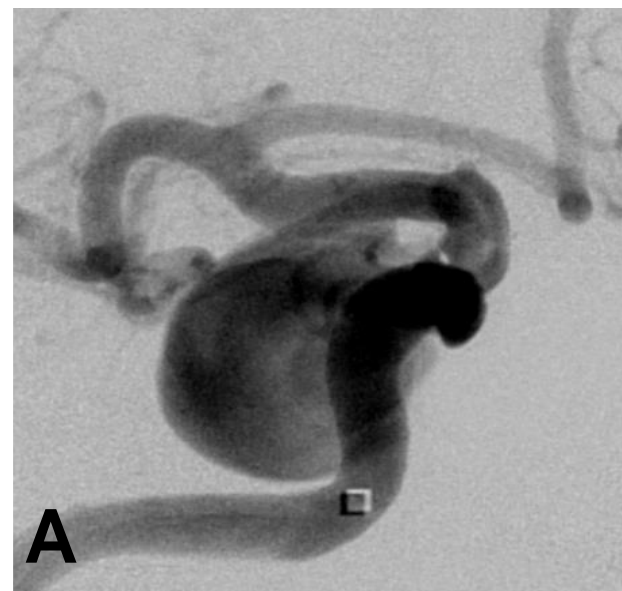


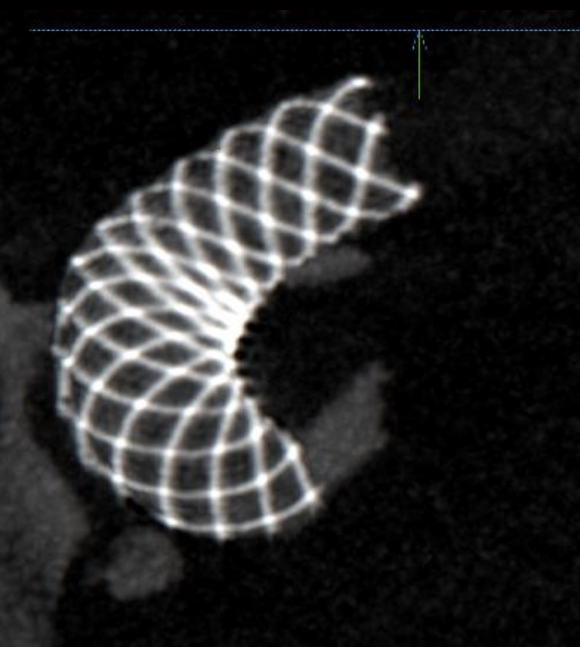
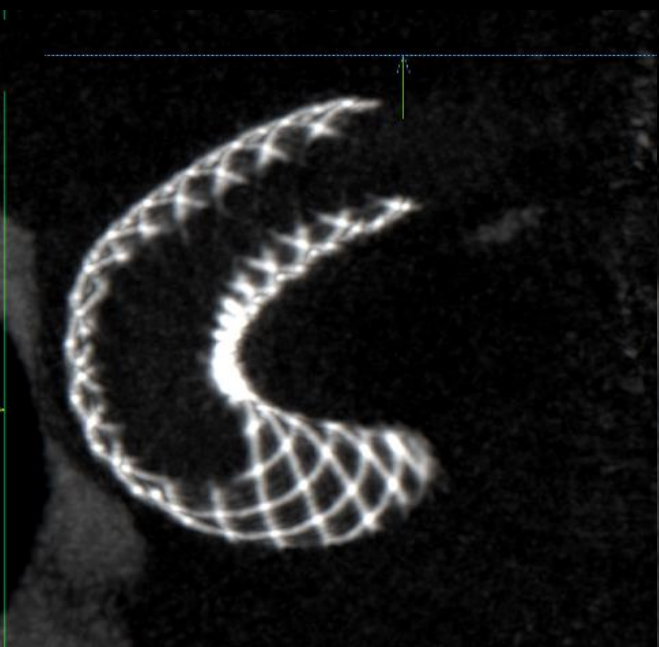
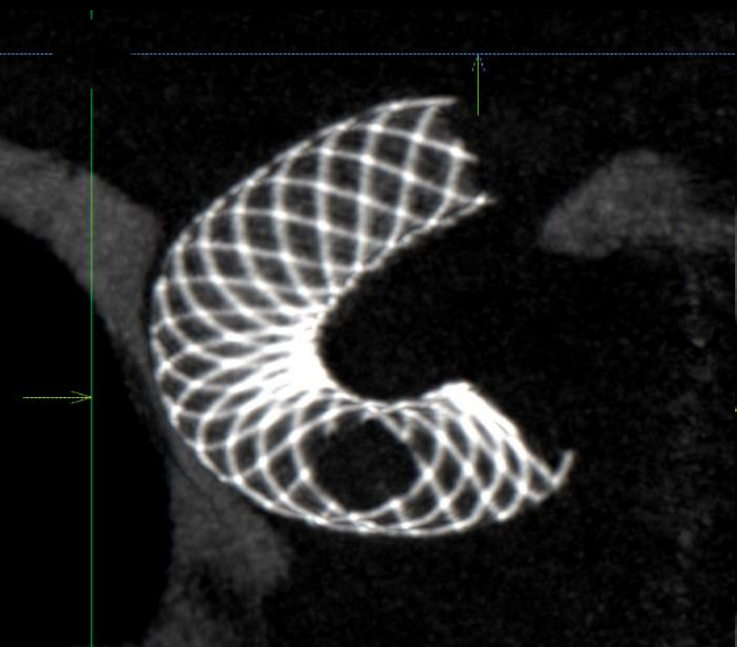
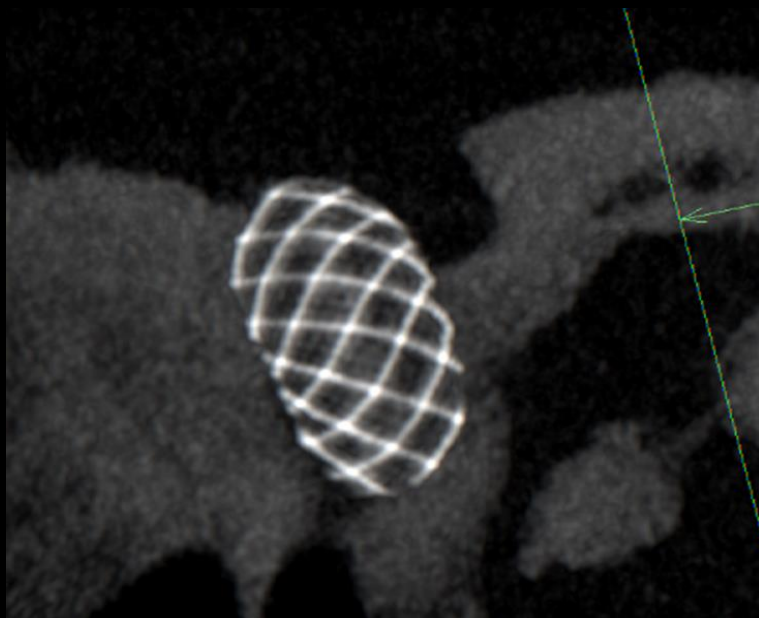


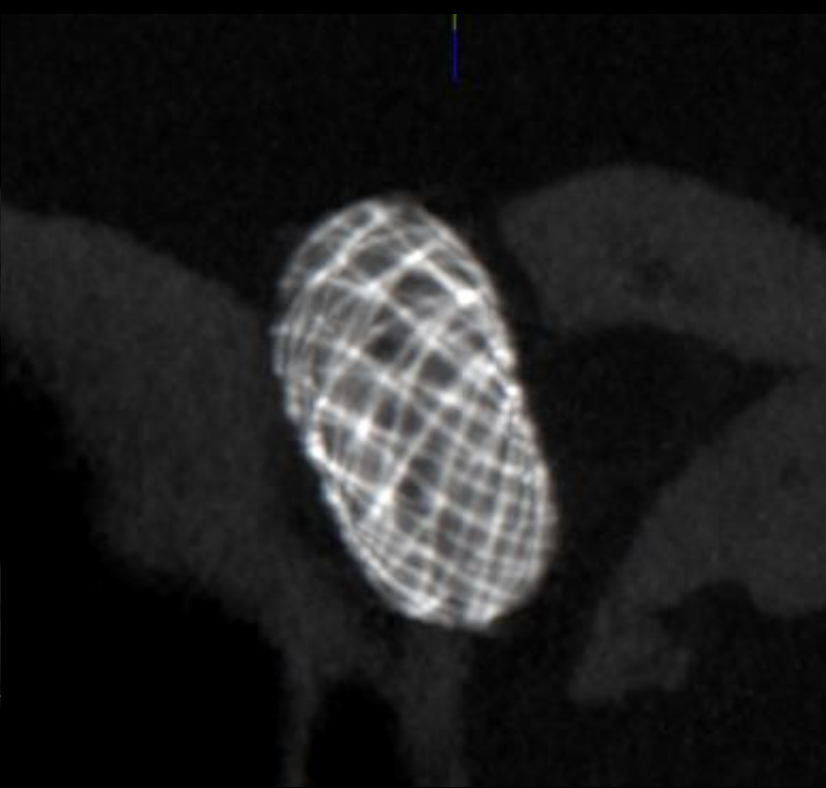
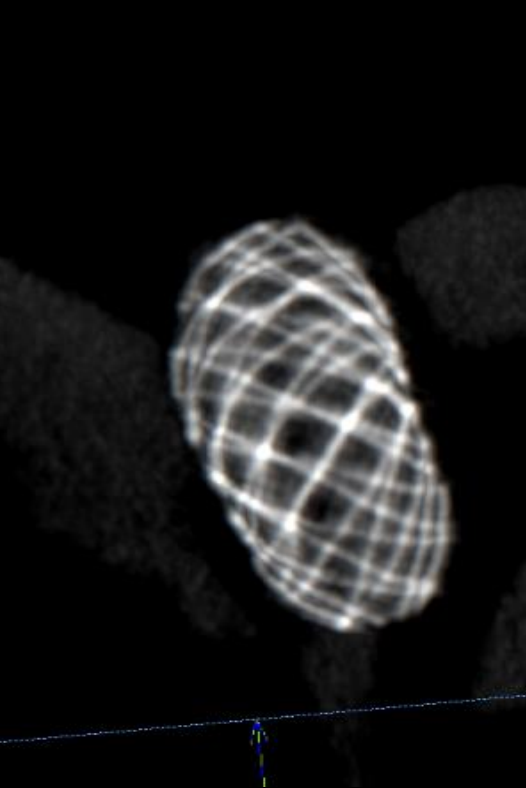
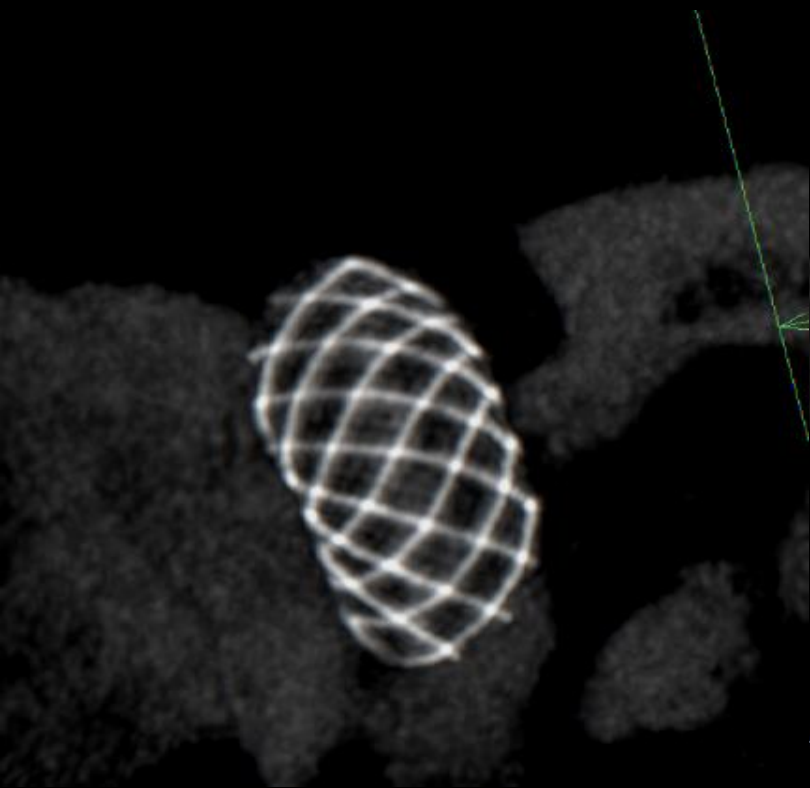








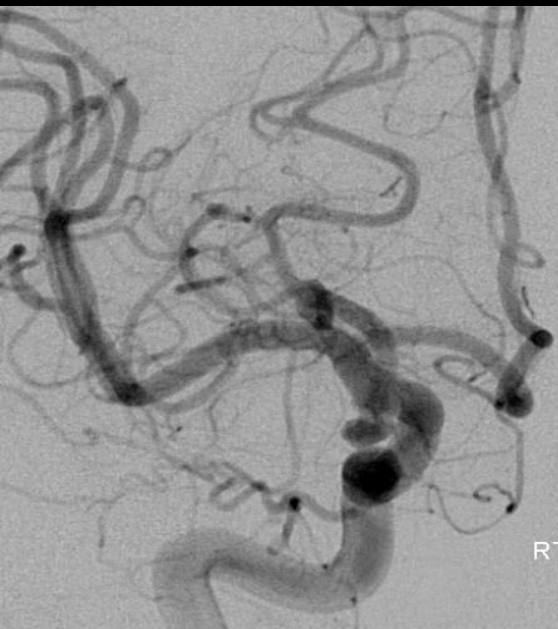
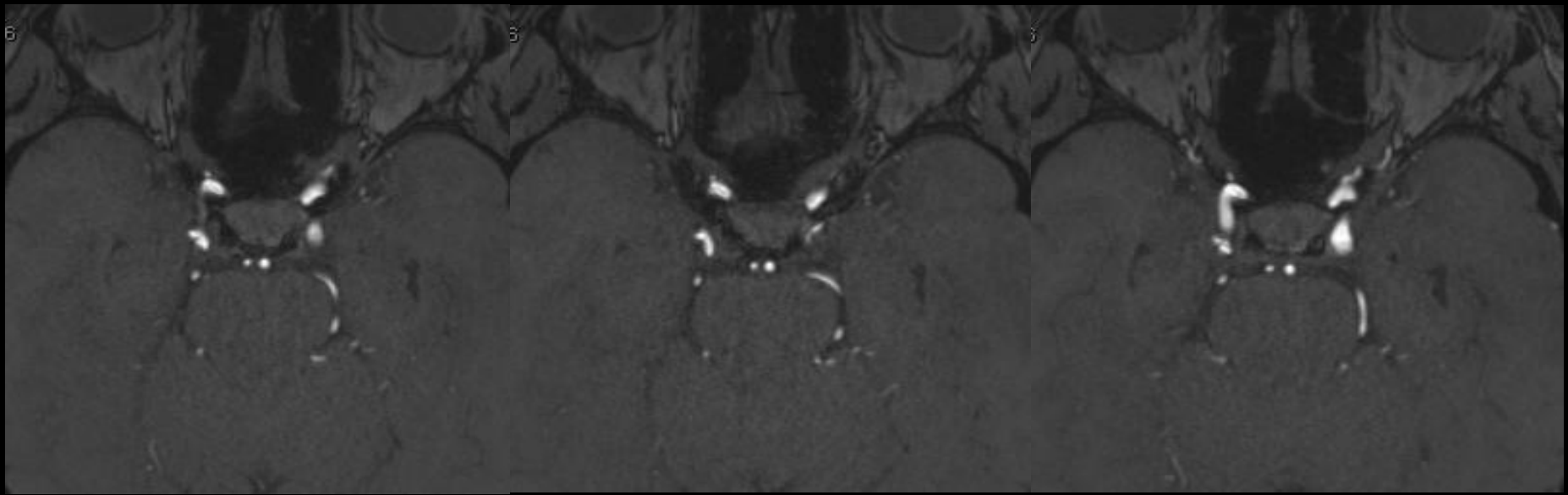






# Case 2

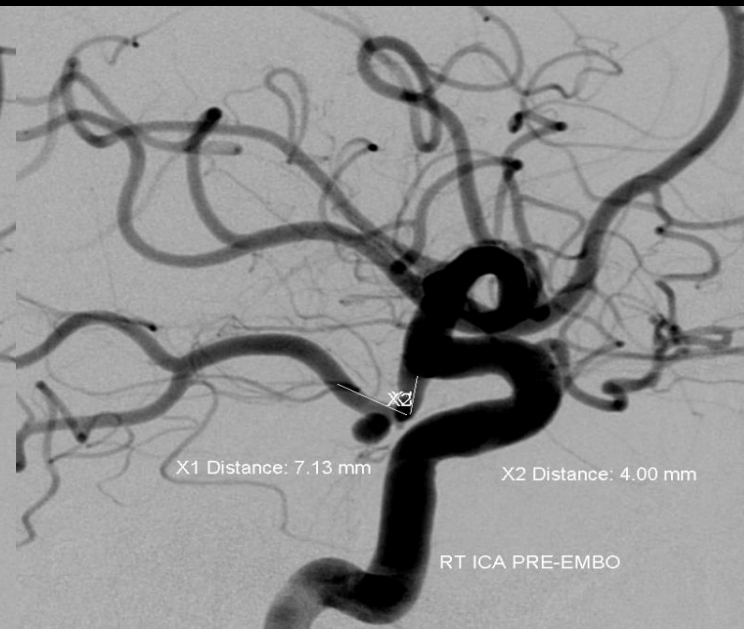
- 53 year old right handed woman (radiologist) with novel crescendo headache
  - Maternal history of SAH
  - Neuro exam unrevealing



RT ICA PRE



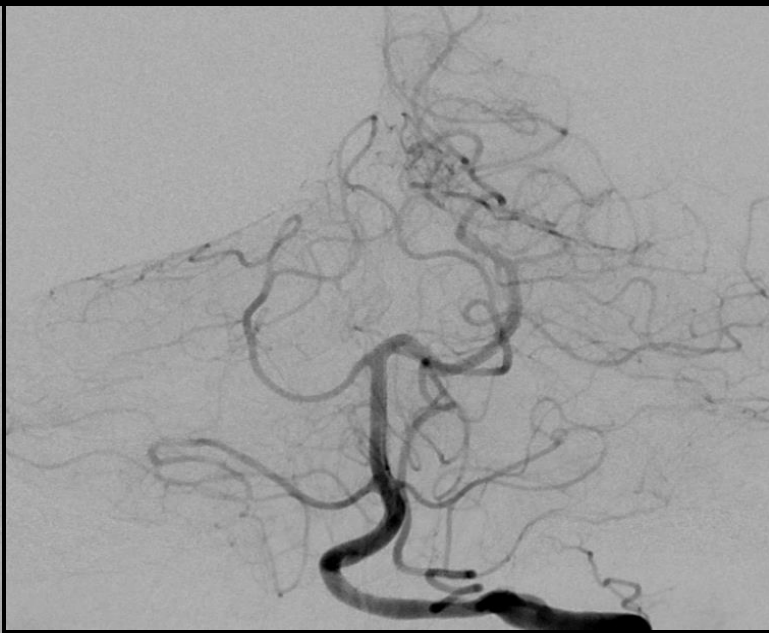
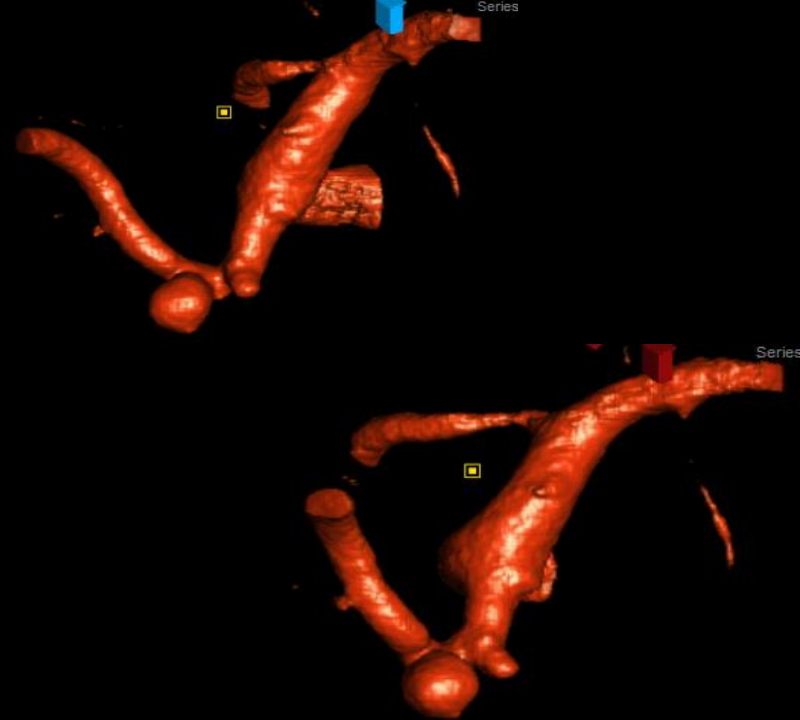
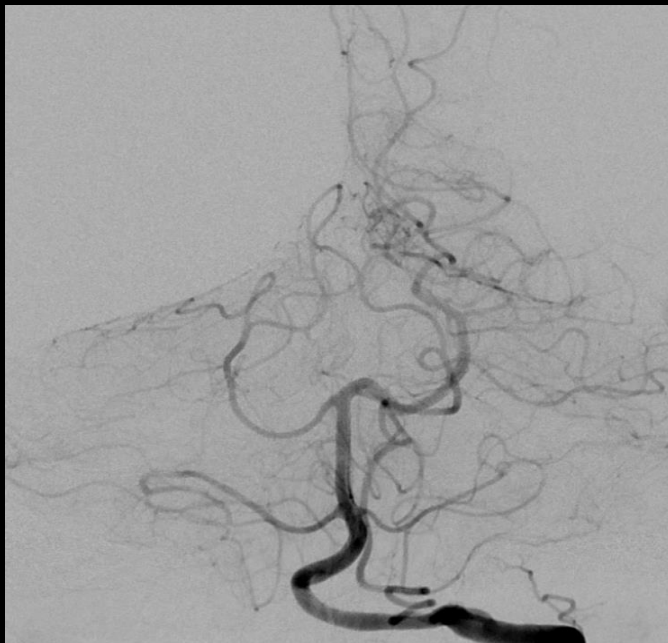
RT ICA PRE-EMBO

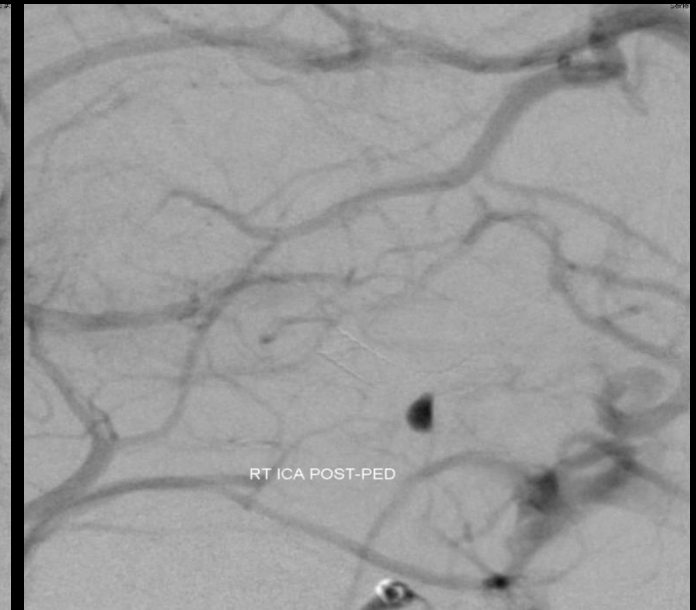
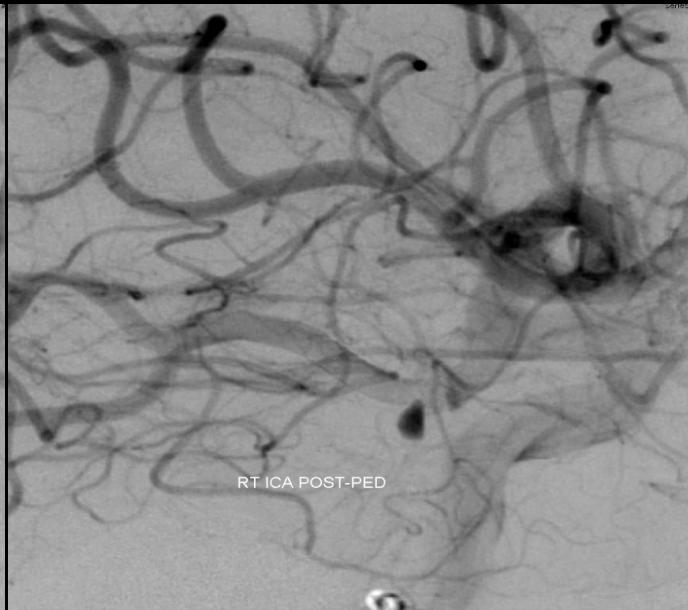
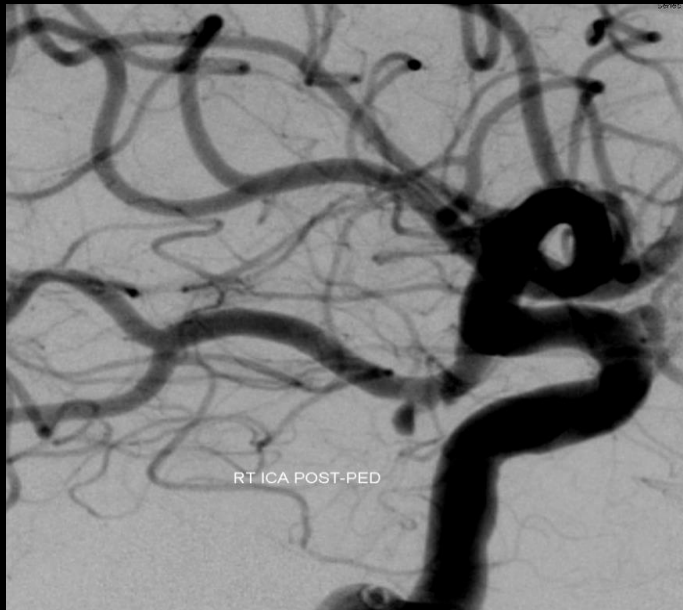


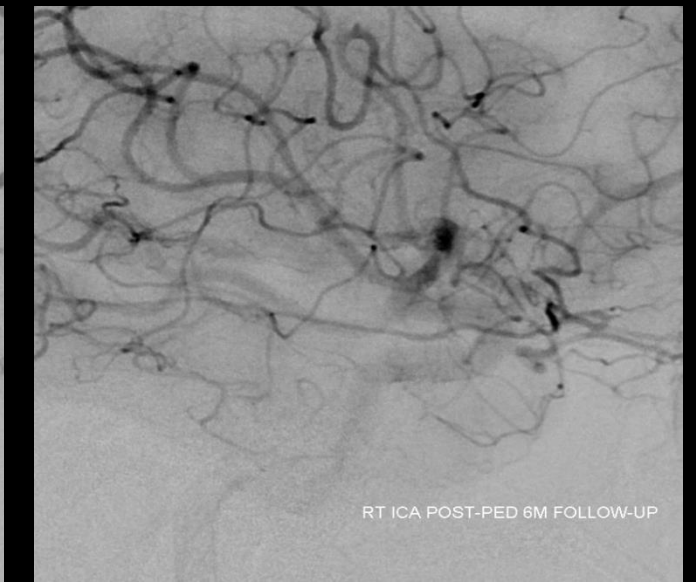
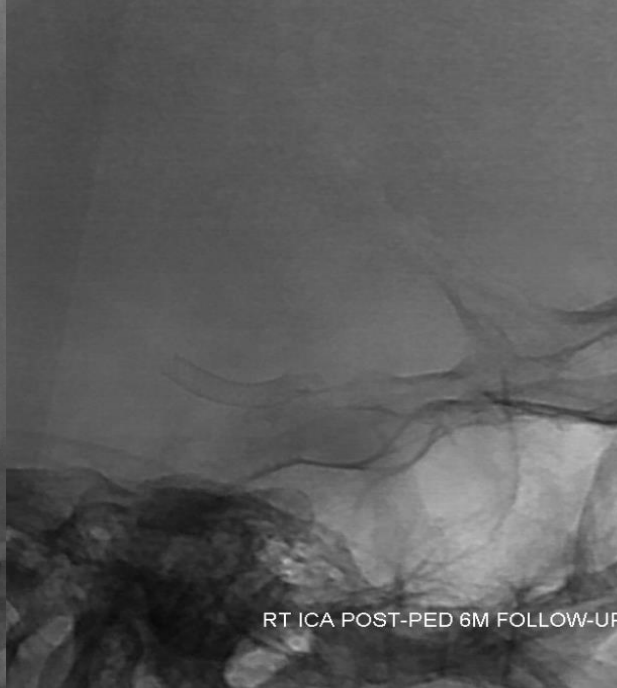
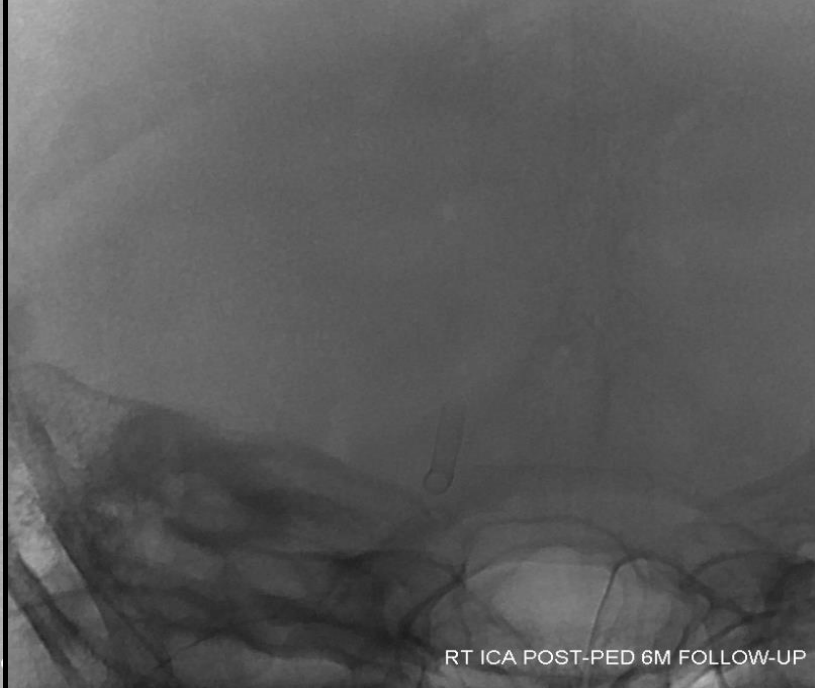
X1 Distance: 7.13 mm

X2 Distance: 4.00 mm

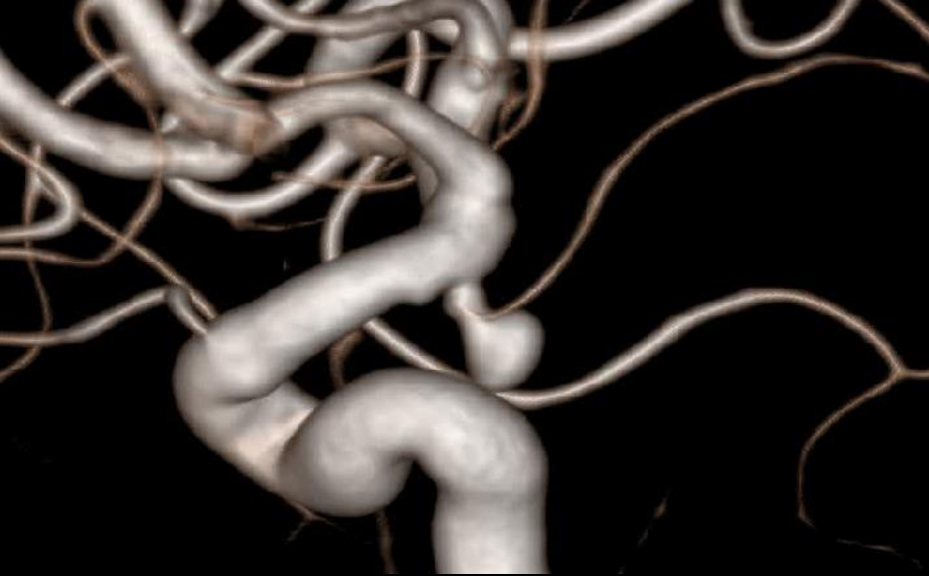
RT ICA PRE-EMBO



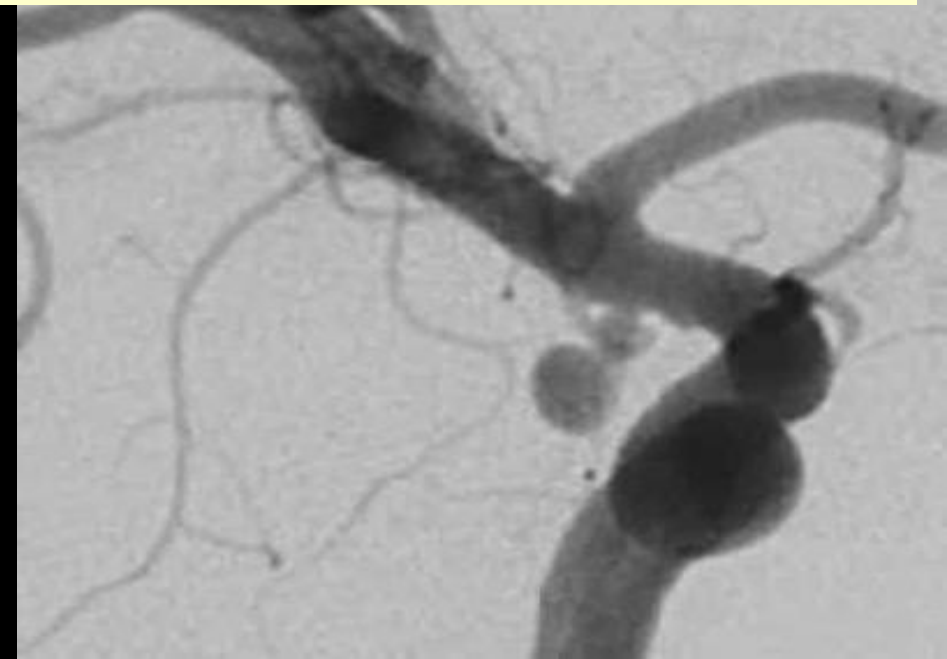


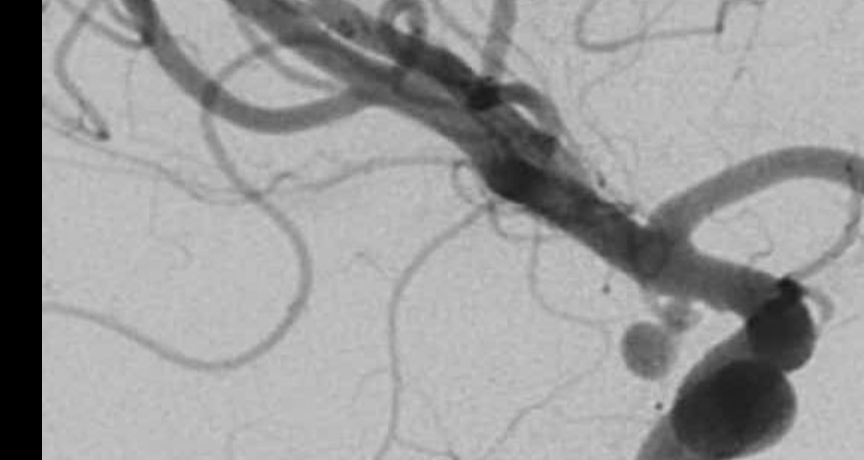






**32 yo female presented with severe headache had a diagnosis of ant cho artery aneurysm with ant cho artery coming off the sac..**





FCV: 15 cm  
RAO: 33.1 deg  
CAU: 12.4 deg  
L: 0.0 deg  
Tilt: 0 deg

WW: 4209WL: 1620



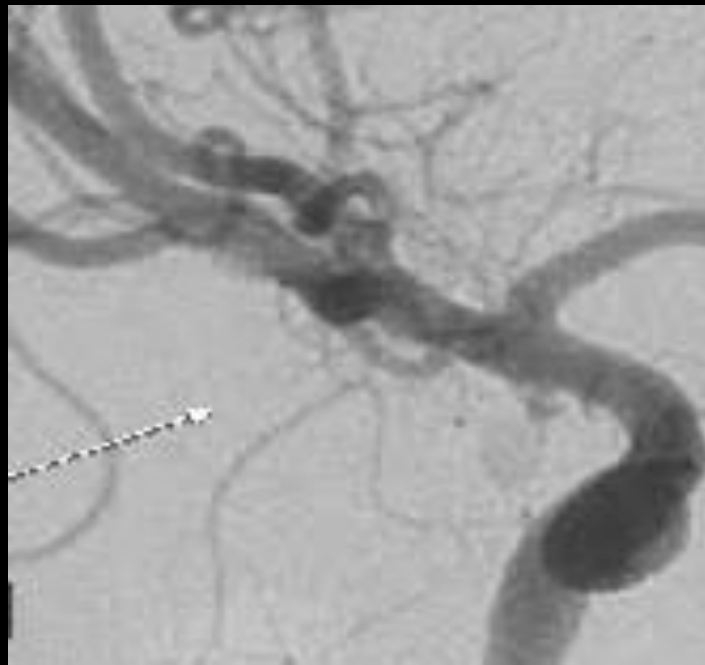
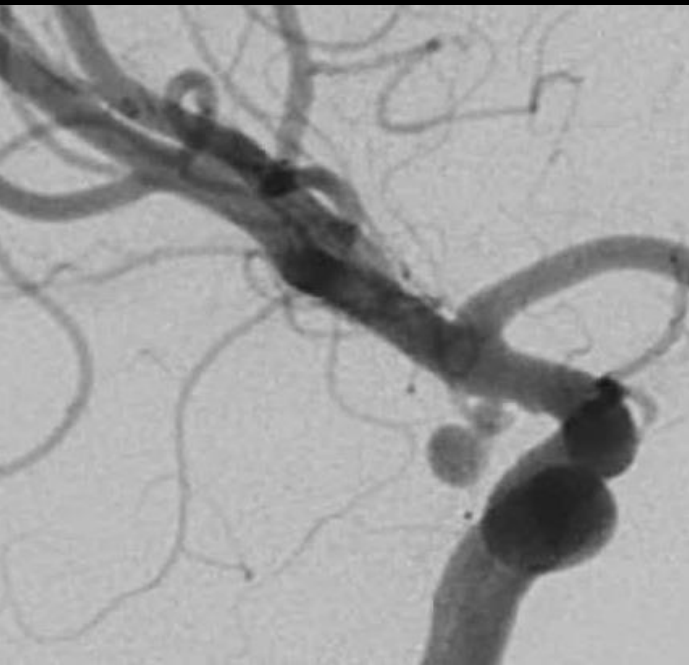
**immediate after FRED placement**

IK



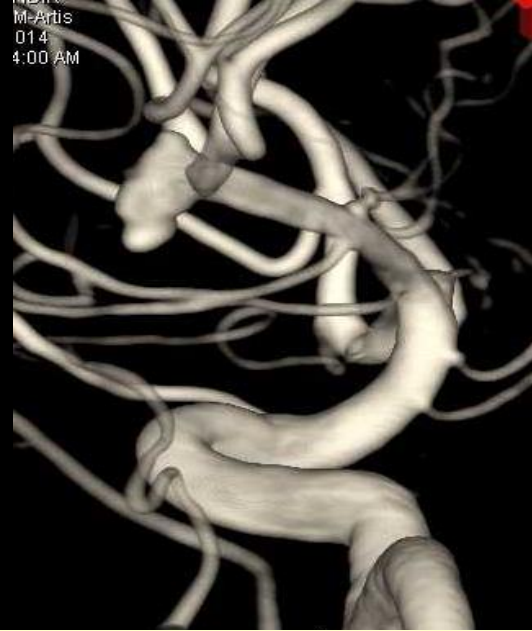


Immediate post op



**FLOW MODIFICATION  
CREATED BY FD PLACEMENT  
DID EXCELLENT JOB BY JUST  
IMMEDIATELY CLOSING THE  
ANEURYSM SAC BUT  
KEEPING THE ANTERIOR  
CHOROICAL ARTERY PATENT  
CAUSING IMMEDIATE  
REMODELLING OF THE  
ANEURYSM BASE WHICH  
TURNS OUT TO BE ANT CHO  
ARTERY INFINDIBULUM...THIS  
IS ONE OF THE GREAT  
EXAMPLE OF INTELLIGENT  
BEHAVIOUR OF FLOW  
DIVERTORS....**





M- Artis  
014  
4:00 AM



4:00 AM

**46 yo female presented with severe headache**

svrt Collection  
BAYINDIR  
AXIOM-Artis  
9/8/2014  
10:14:00 AM

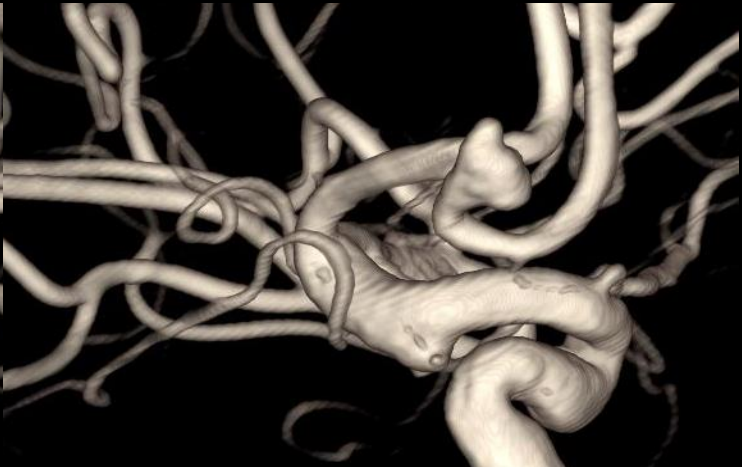
RAH

LAO/RAO 16  
CRAN/CAUD -47

L



**WITH COURTESY OF DR FEYYAZ BALTACIOGLU**



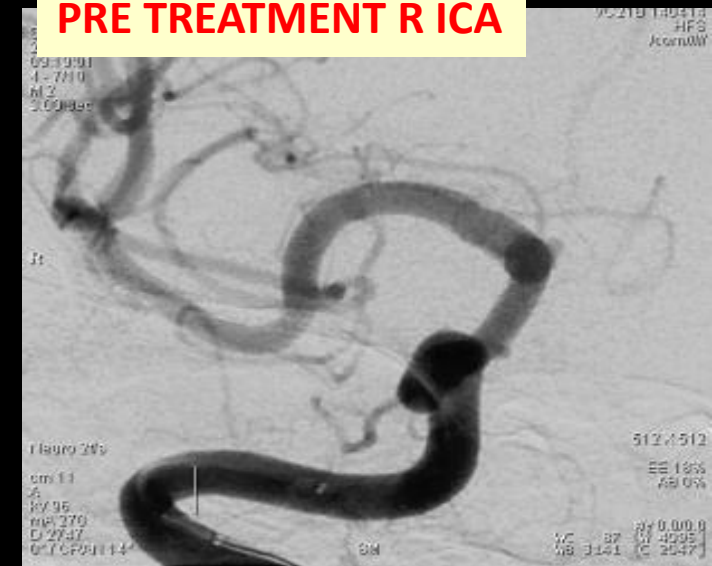
**UNRUPTURED A COM ANEURYSM WITH BLEB FILLING FROM LEFT A1 AND HYPOPLASIA OF THE RIGHT A1.. RIGHT A2 COMES OFF THE SAC...**



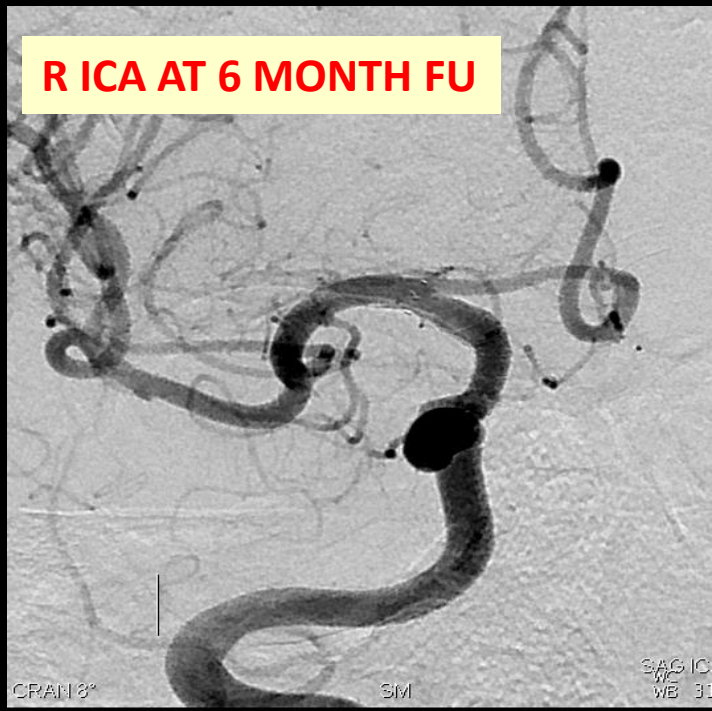




**PRE TREATMENT R ICA**



**6 MONTH CONTROL**

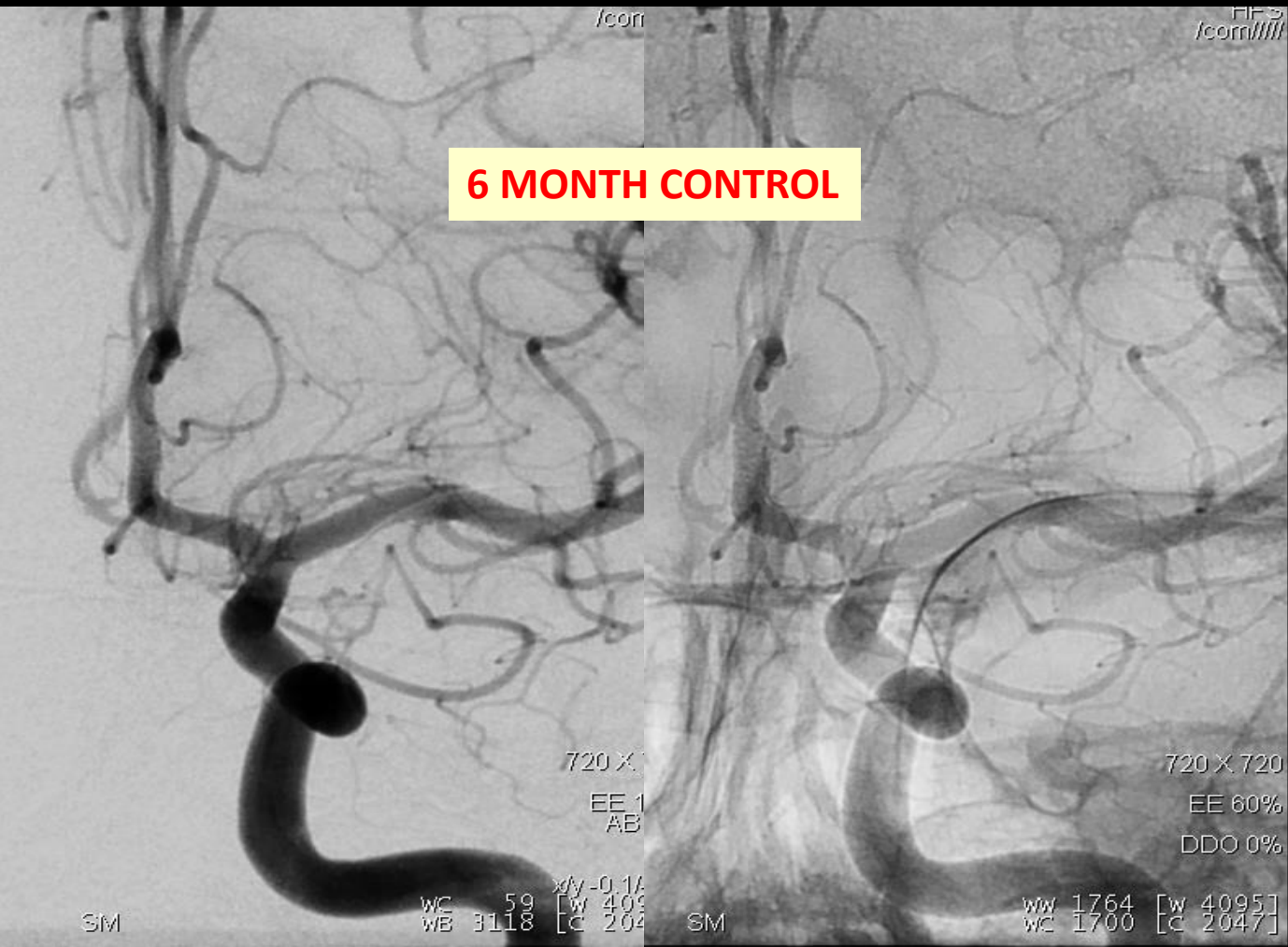


**R ICA AT 6 MONTH FU**



**34 yo female with ruptured acom blister aneurysm that was filling from left A1 with the aplasia of the right A1**





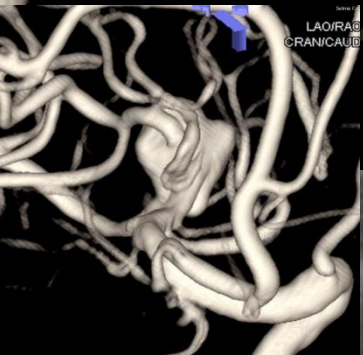
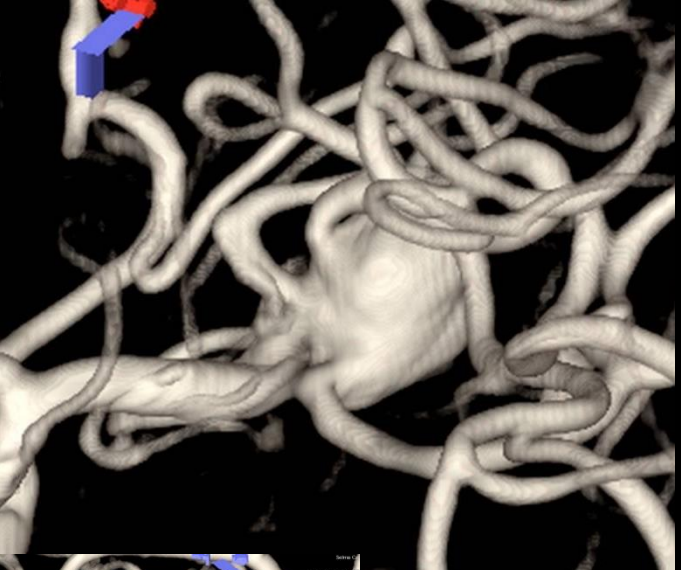
**PRE TREATMENT R ICA**



**R ICA AT 6 MONTH FU**

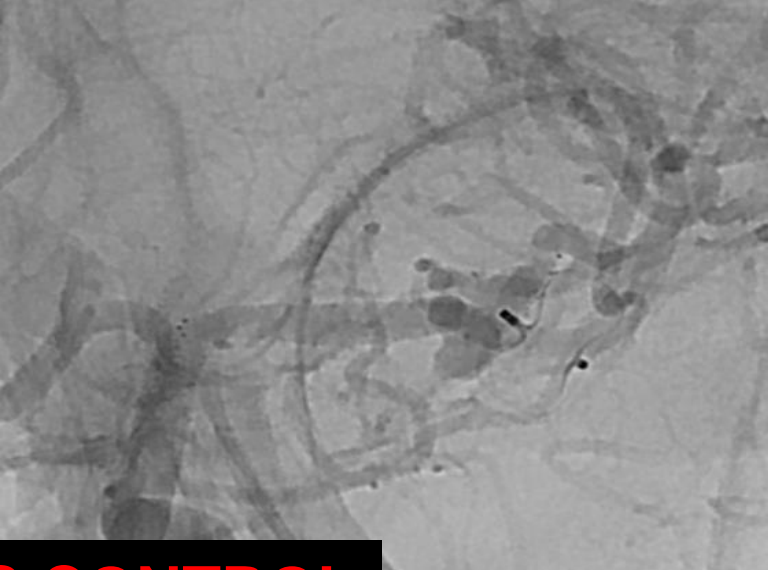
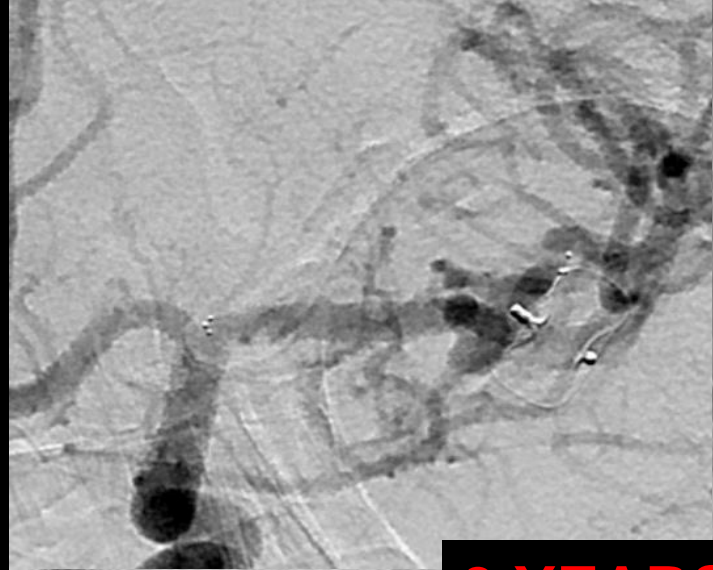






LAO/RAS  
CRAN/CAUL

**THERE ARE CA  
DIVERTER..NE  
HARD PROBLE**

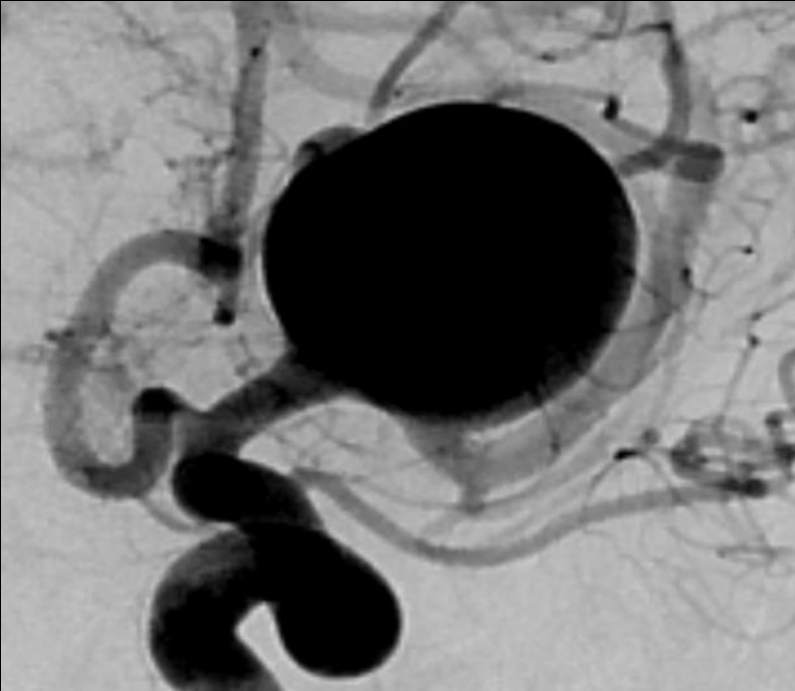
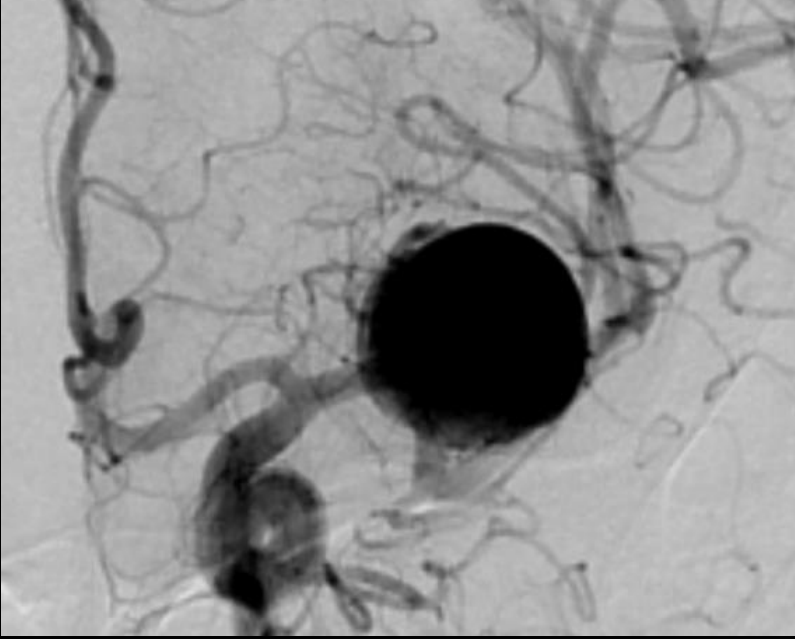


**3 YEARS CONTROL**





**38 yo female presented with headache..**



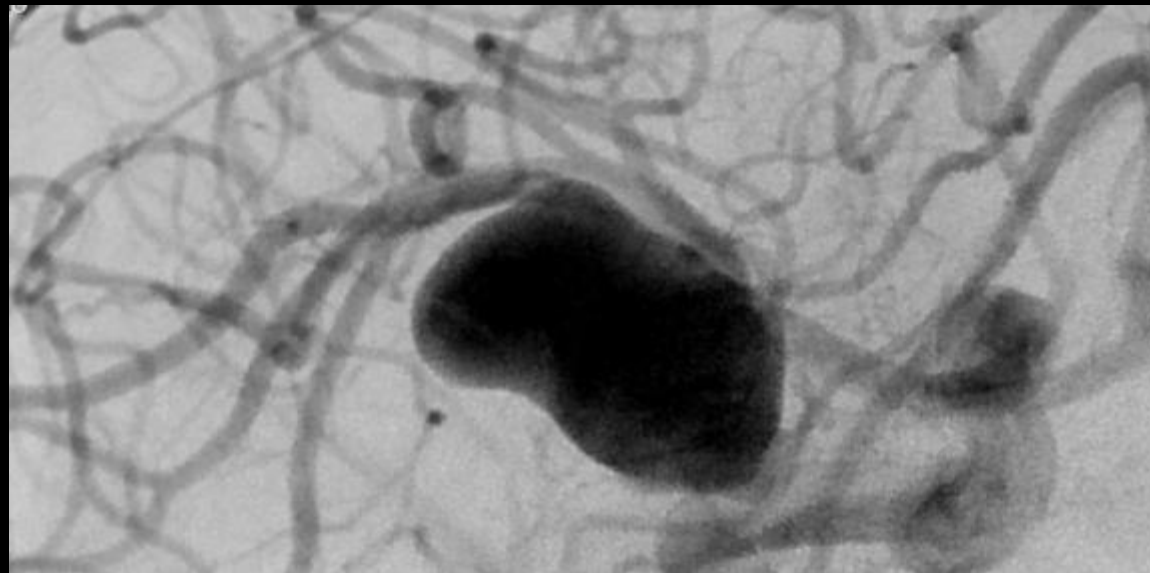
# ***HOW DO YOU TREAT?***

**A. SURGERY**

**B. DUAL STENT ASSIST COILING**

**C. FD PLACEMENT FROM M1 TO THE INFERIOR TRUNK**





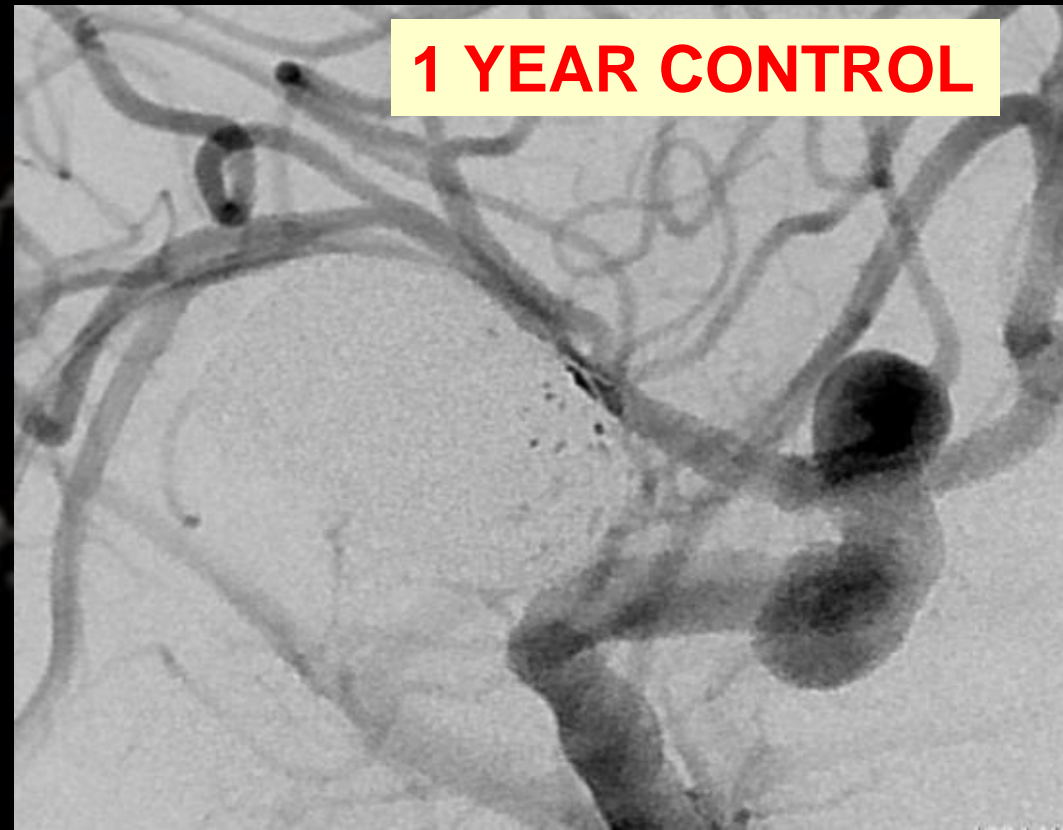
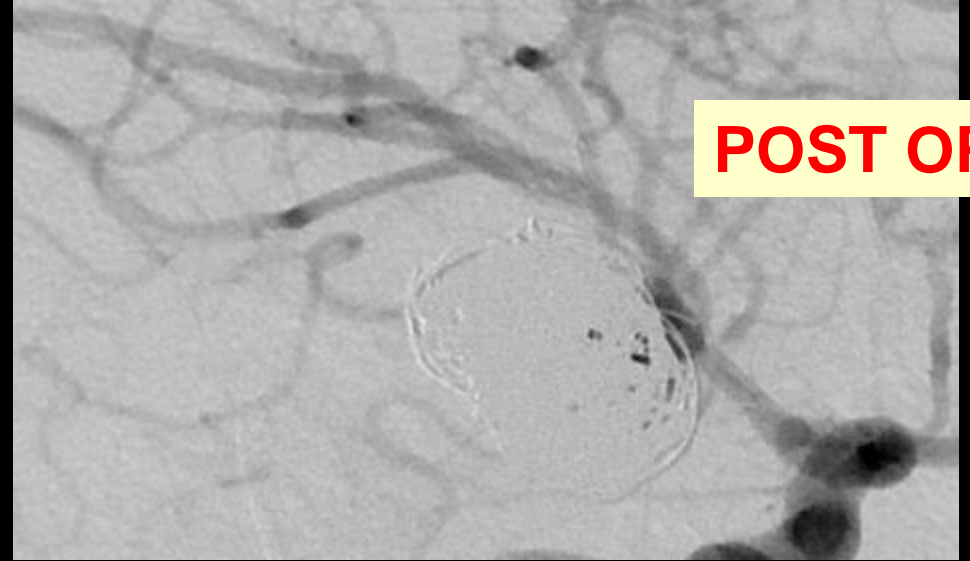
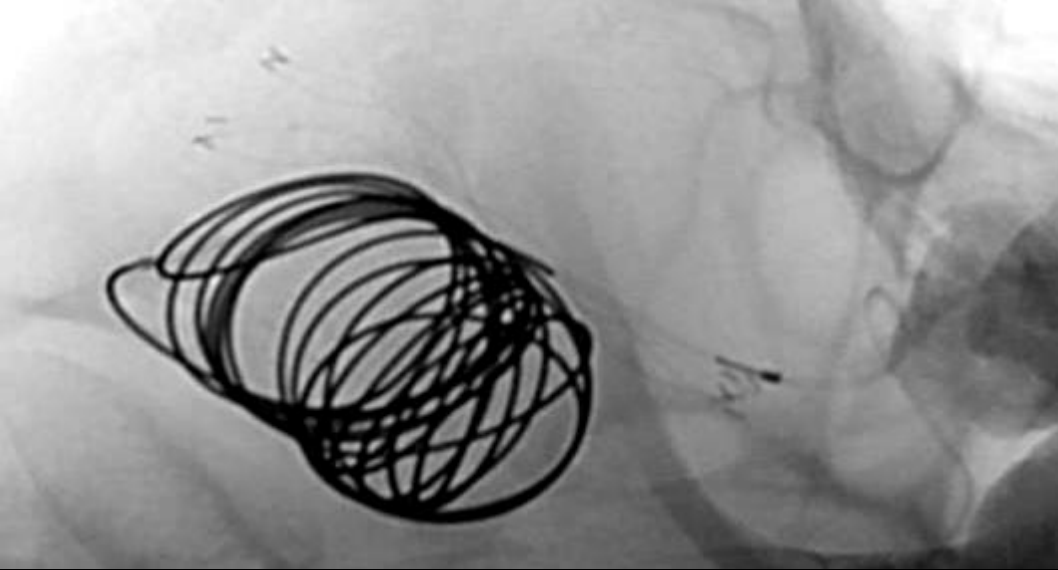
21/1002, M, 20Y

VC021A

0599111  
JDY 10914  
3/2012  
7:31 PM  
480/480





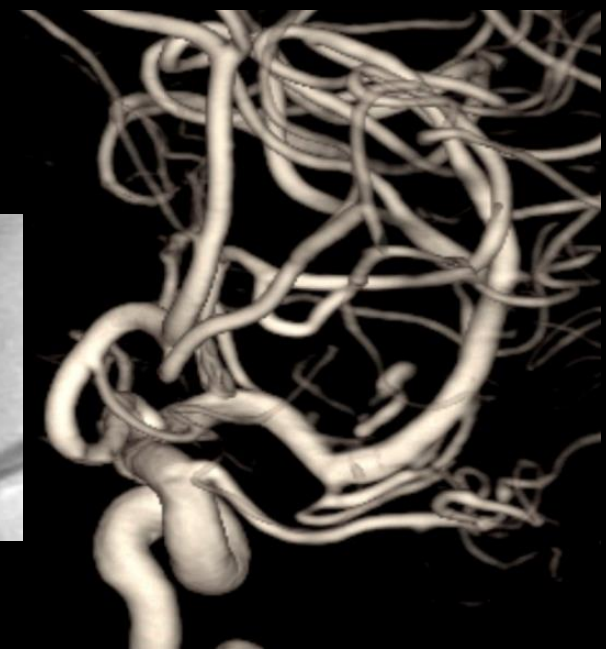
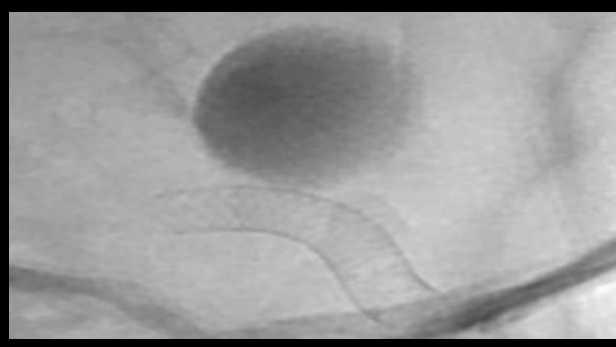


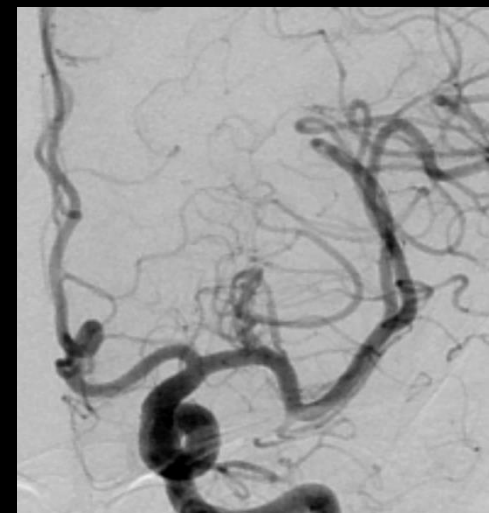
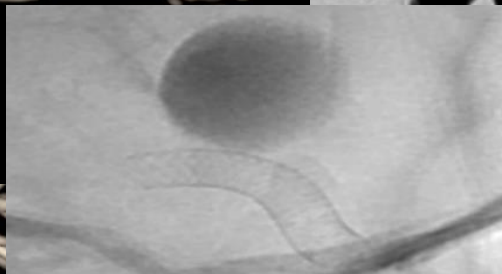
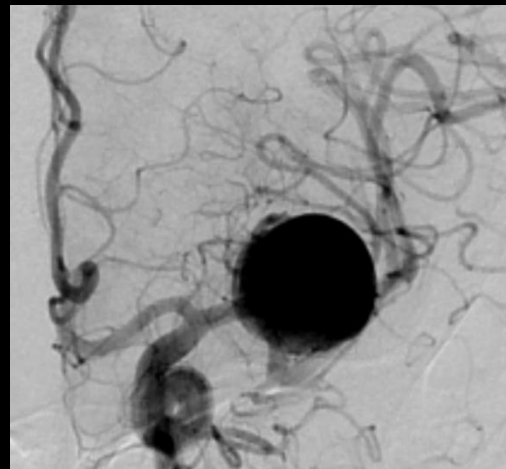
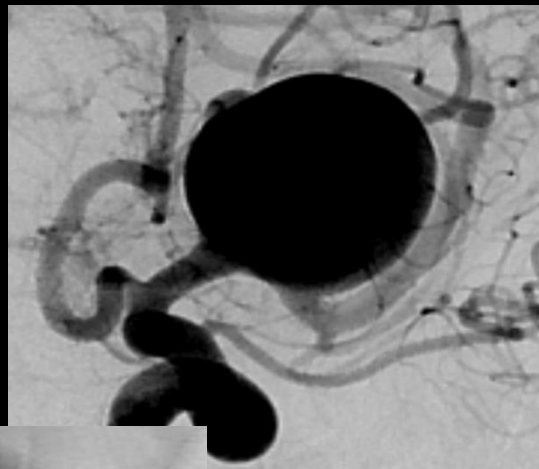
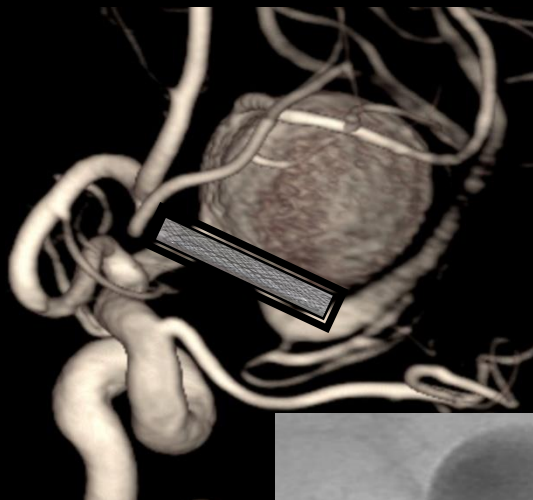
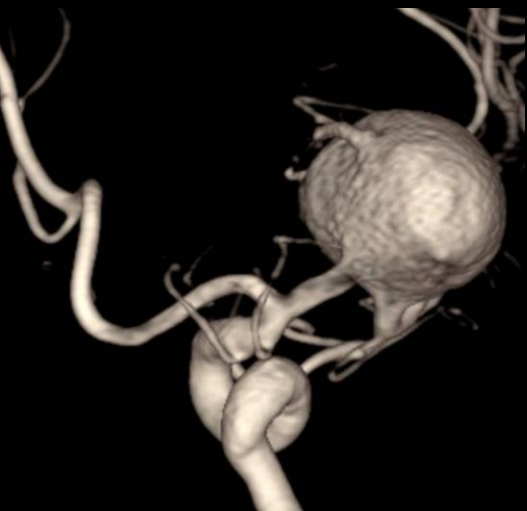


6 month control



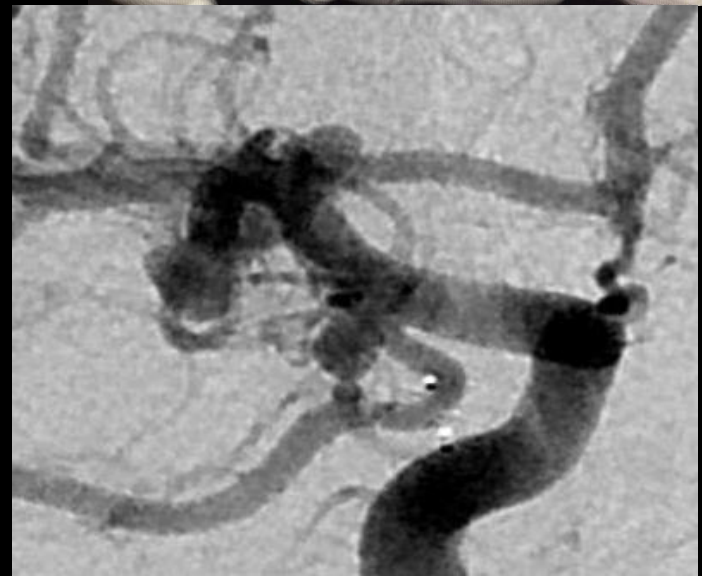
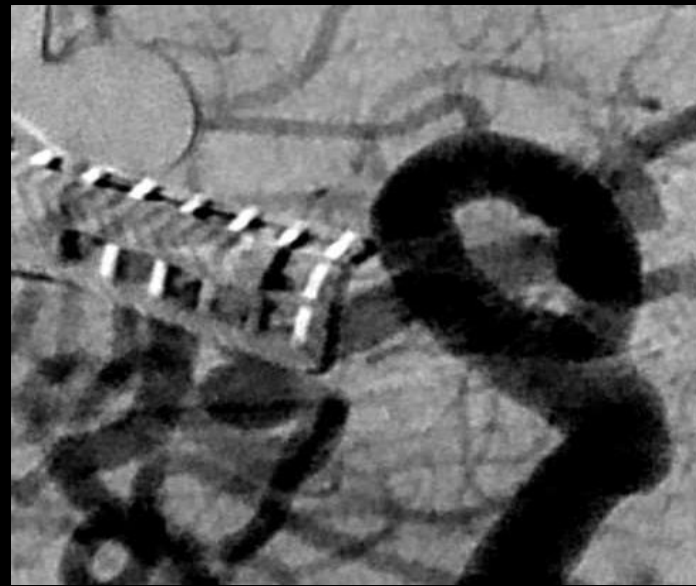
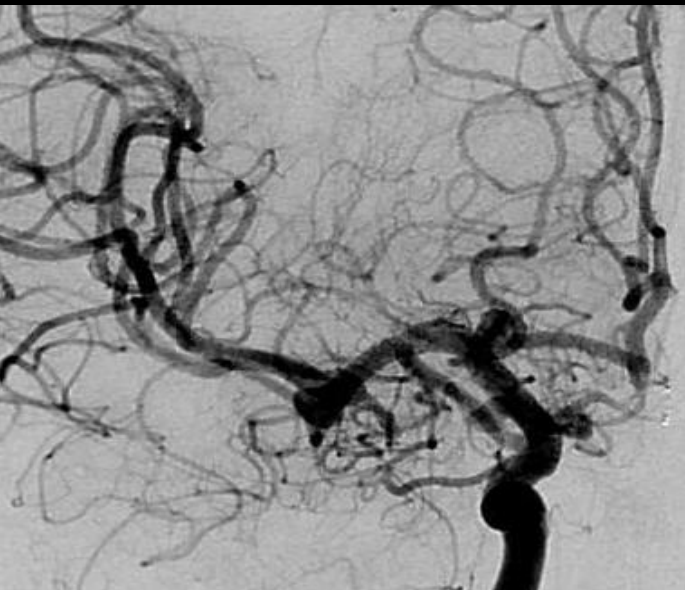
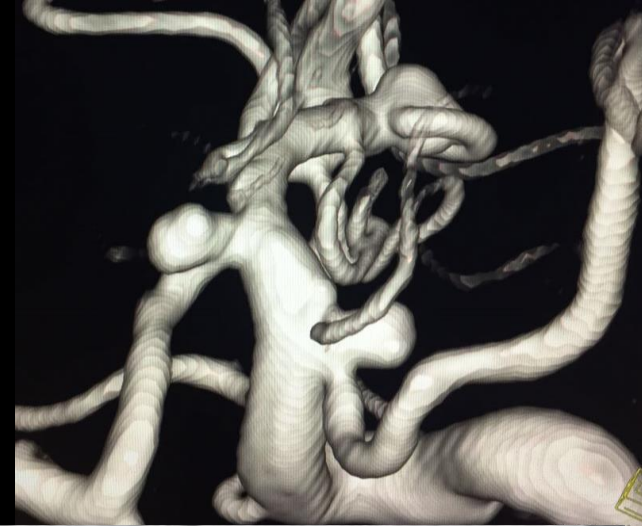
***THE FUTURE SHOULD BE SIMPLICITY ..AS LEONARDO SAYS "THE SIMPLICITY IS THE REAL ART..!"***

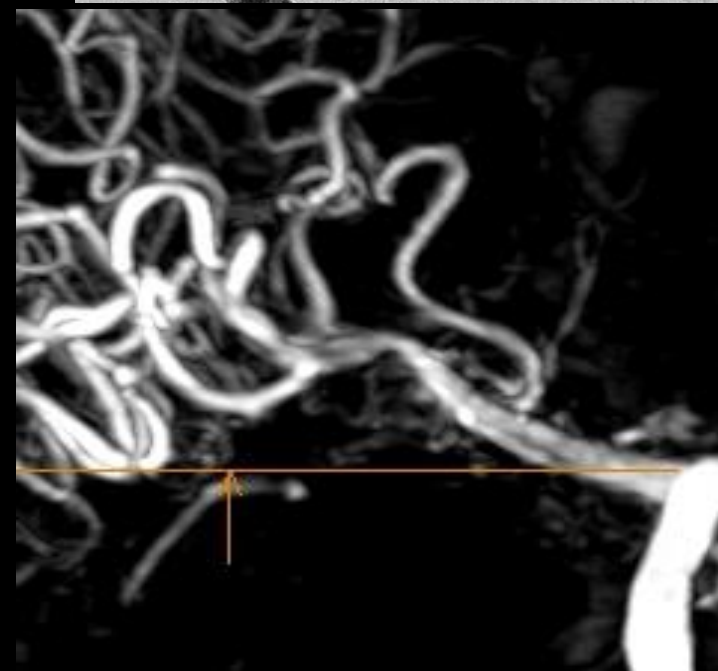
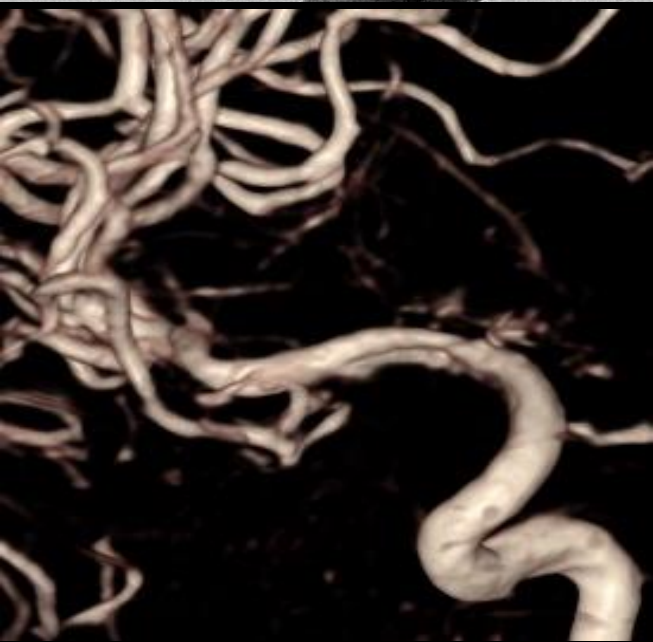
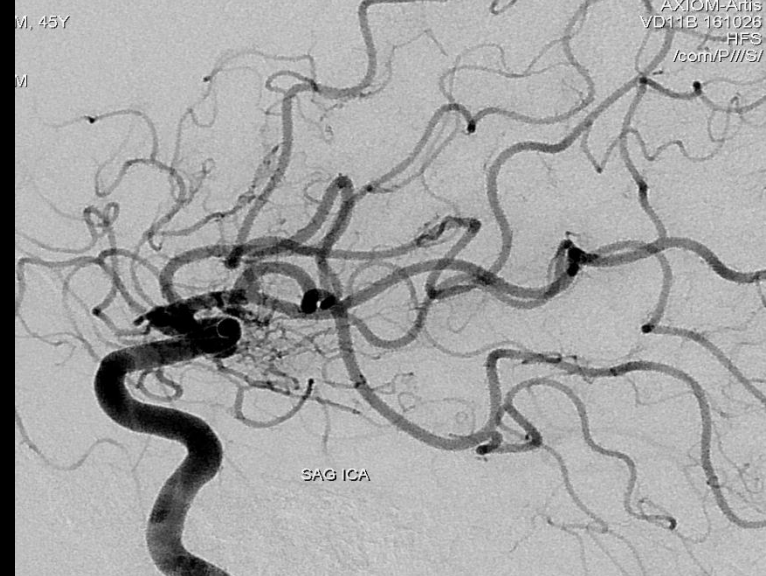
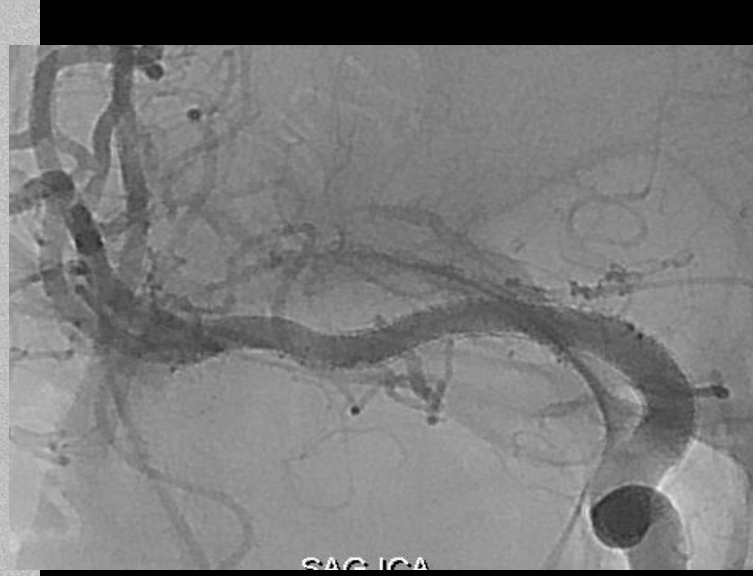




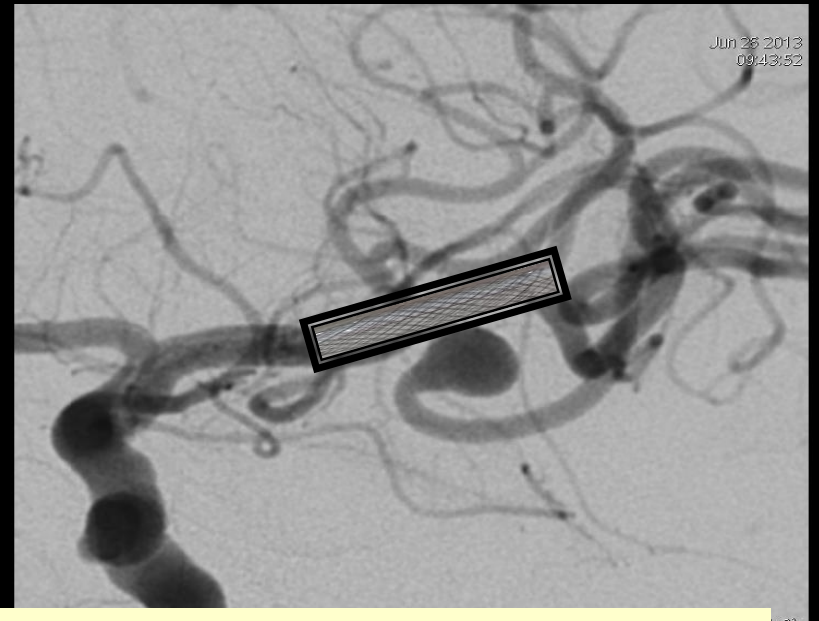
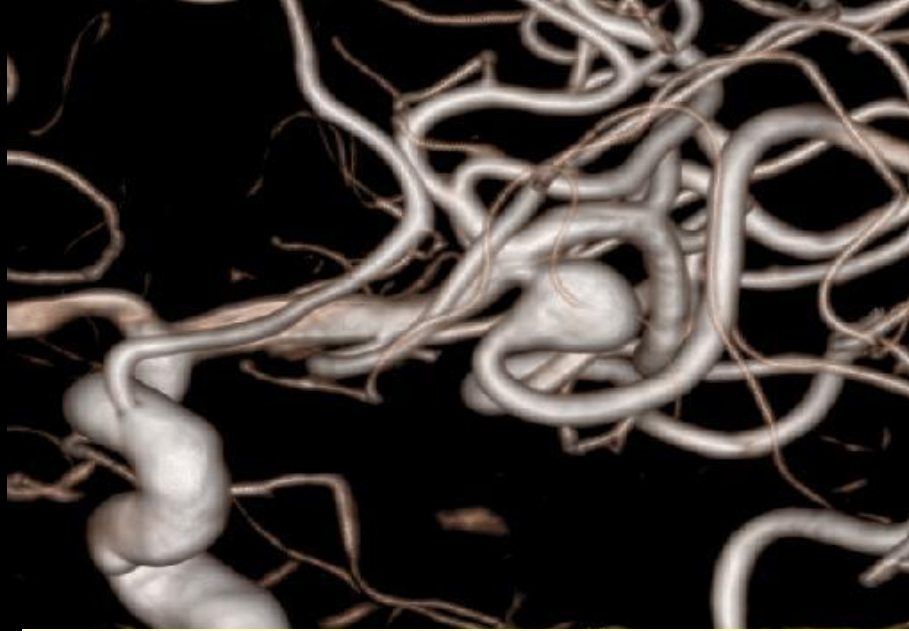
**6 month control**



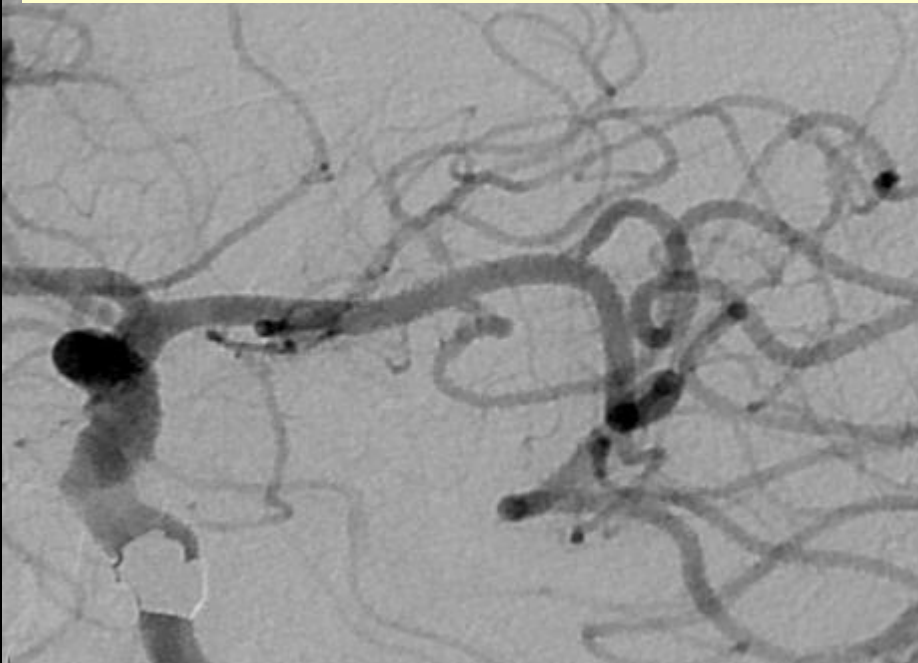






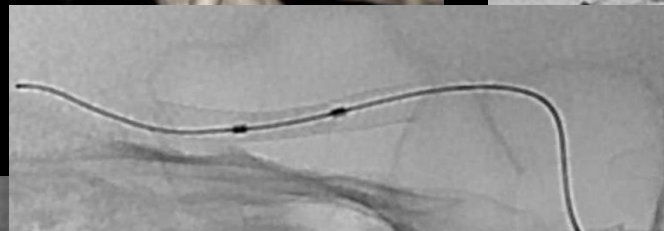
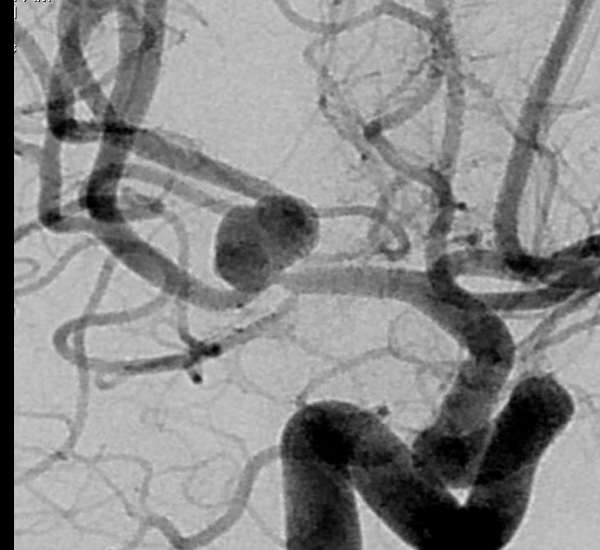


**FLOW REMODELLING / CLASS 5 OCCLUSION**

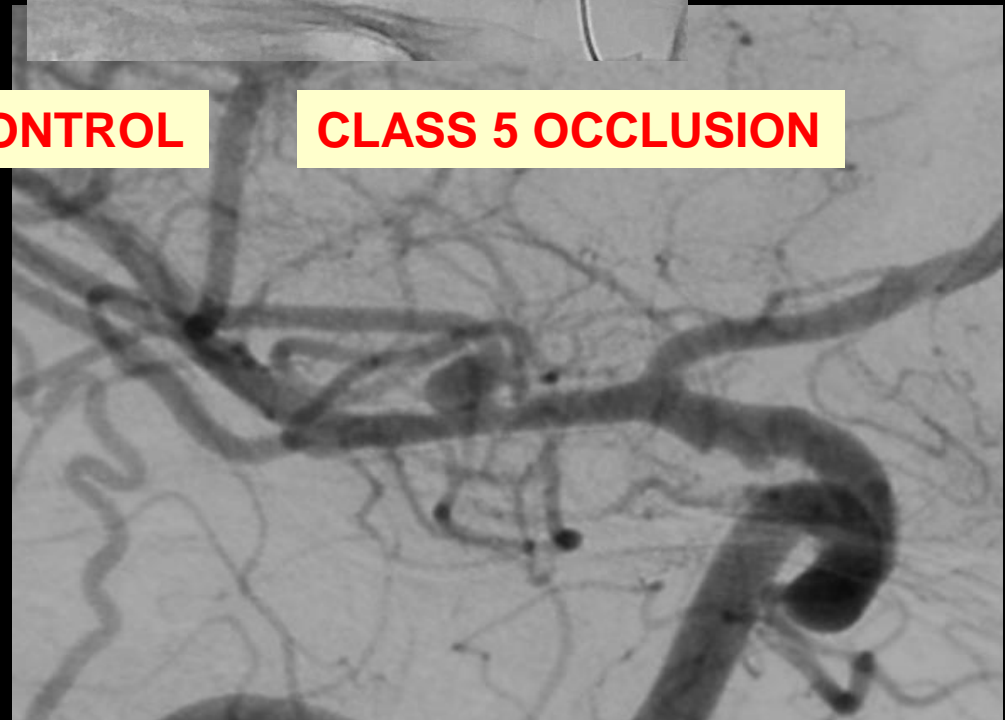


**15 th month control**

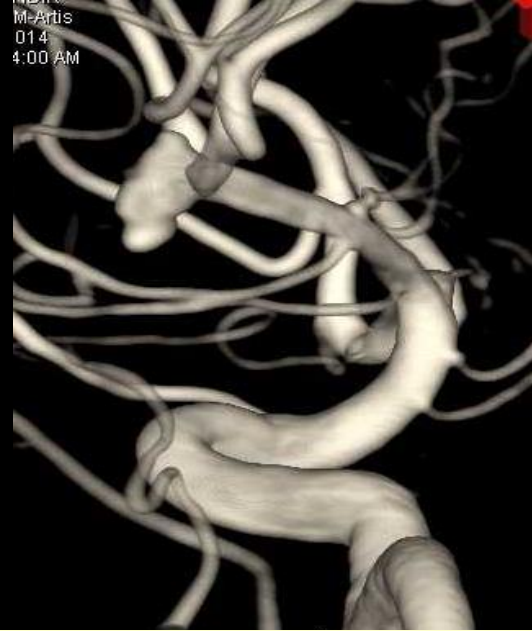




**1 YEAR CONTROL**



**CLASS 5 OCCLUSION**

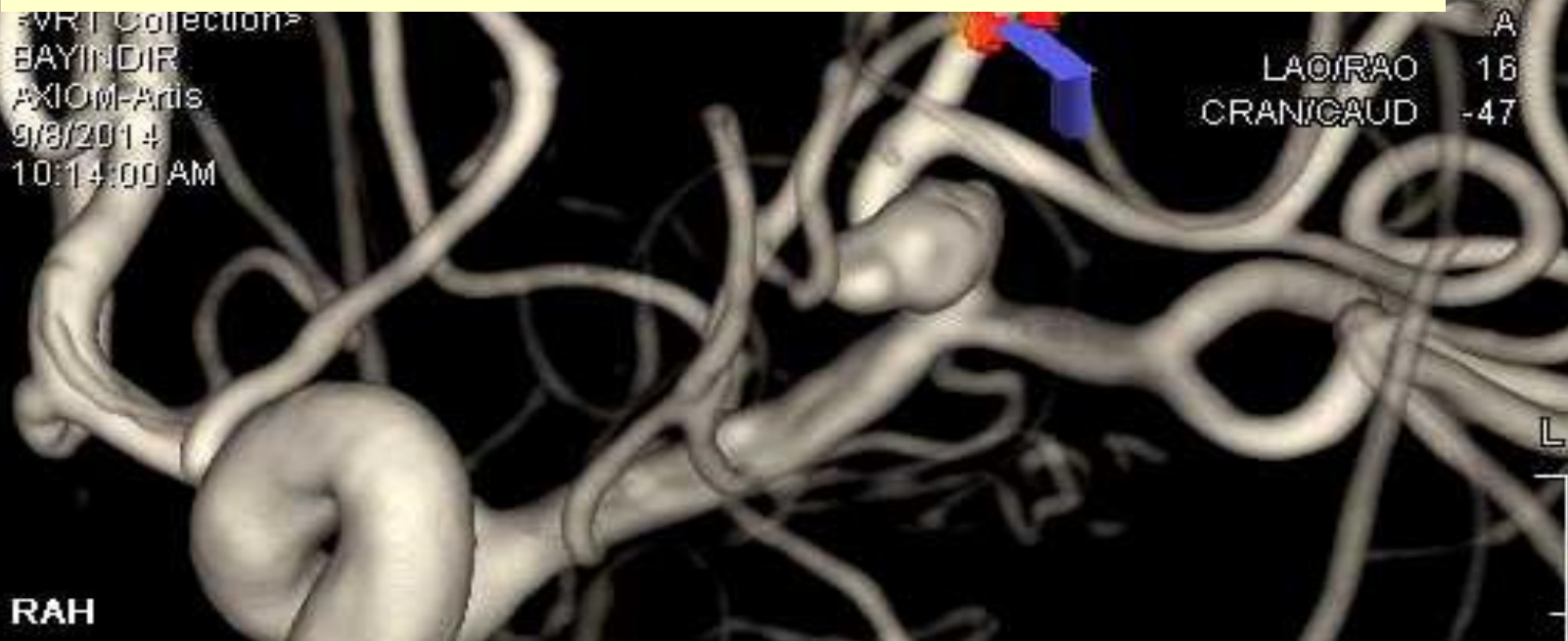


**46 yo female presented with severe headache**

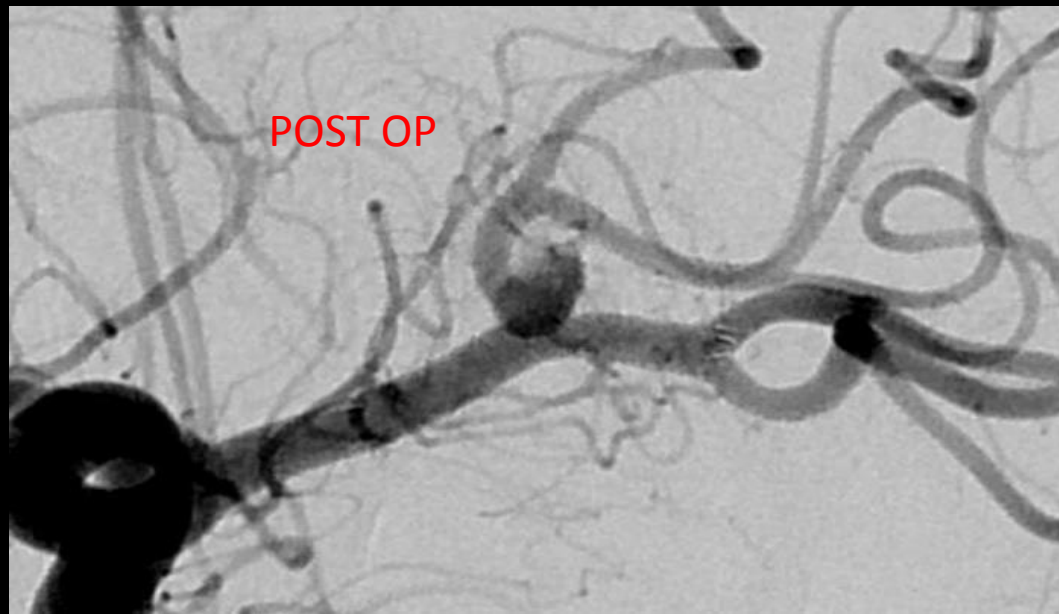
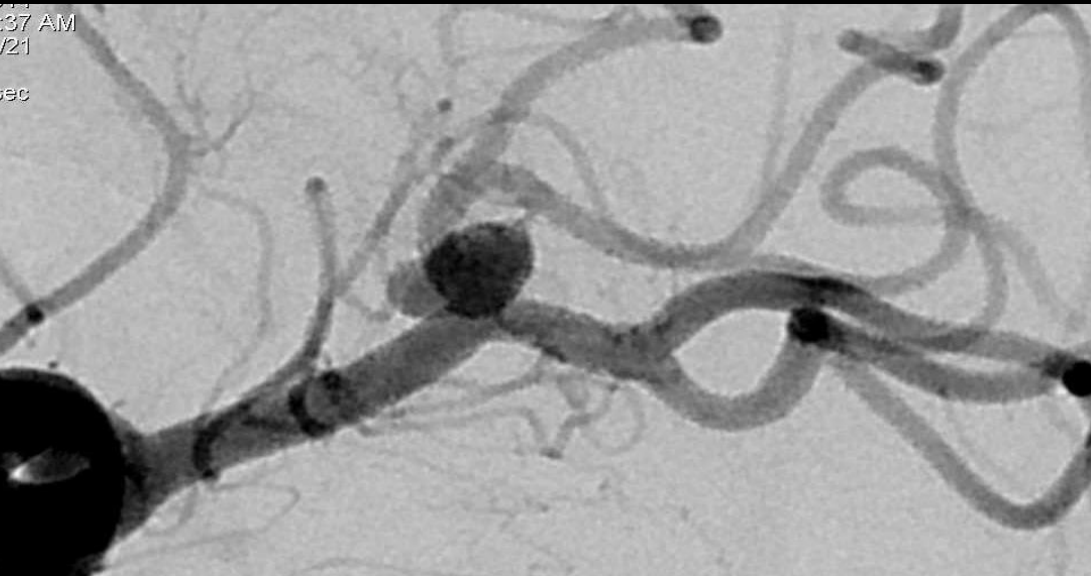
svrt Collection  
BAYINDIR  
AXIOM-Artis  
9/8/2014  
10:14:00 AM

LAO/RAO 16  
CRAN/CAUD -47

RAH



11  
:37 AM  
/21  
sec

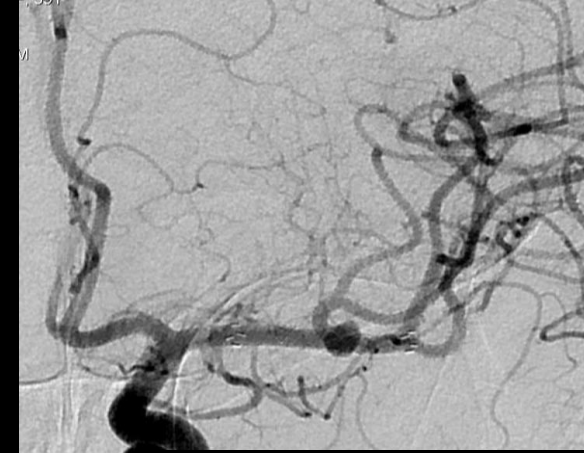
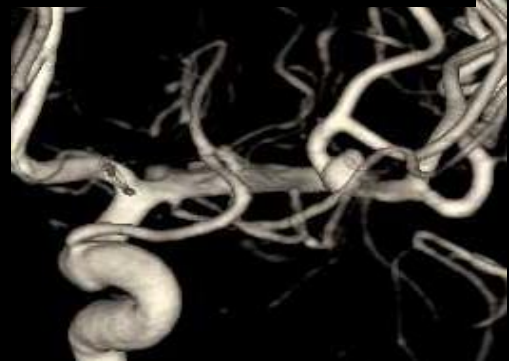




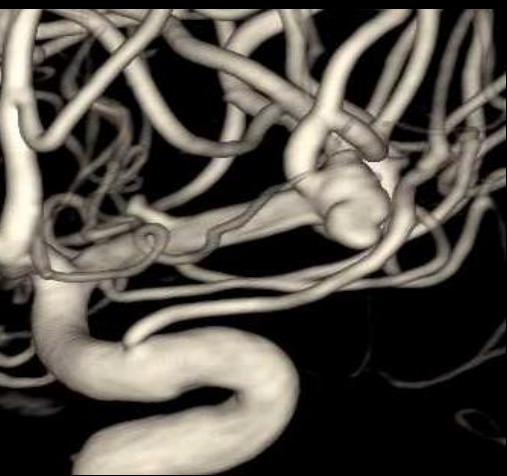
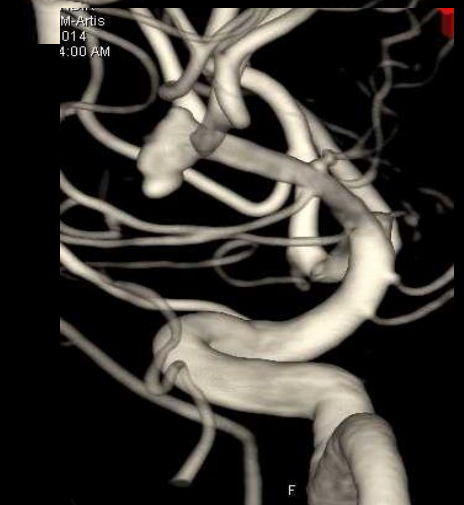
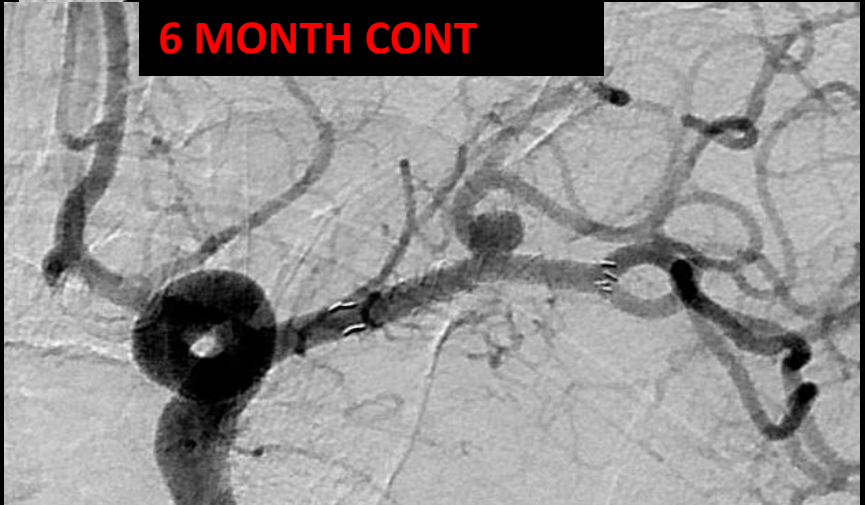
**BEFORE TREATMENT**



**6 MONTH CONT**

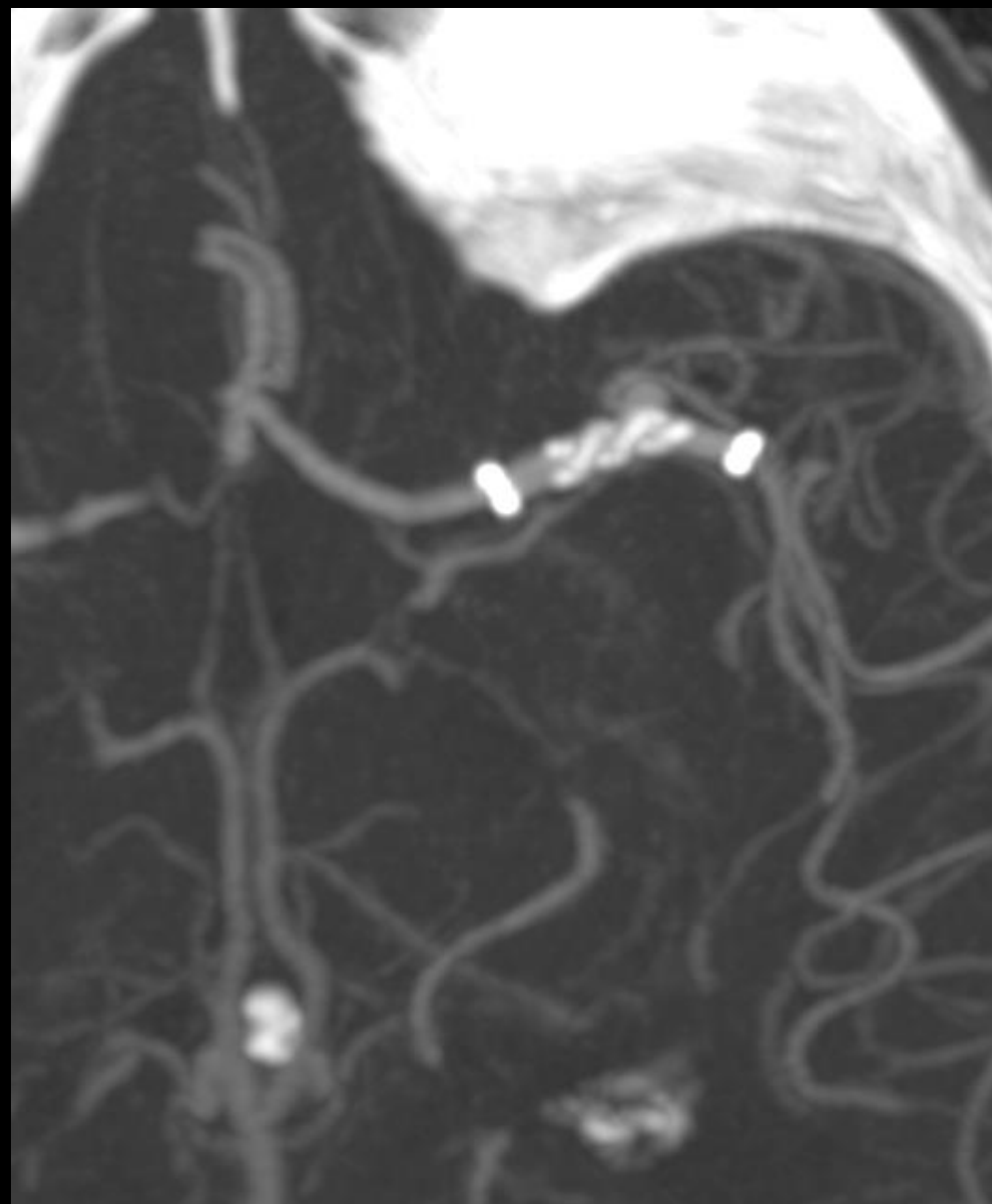


**6 MONTH CONT**

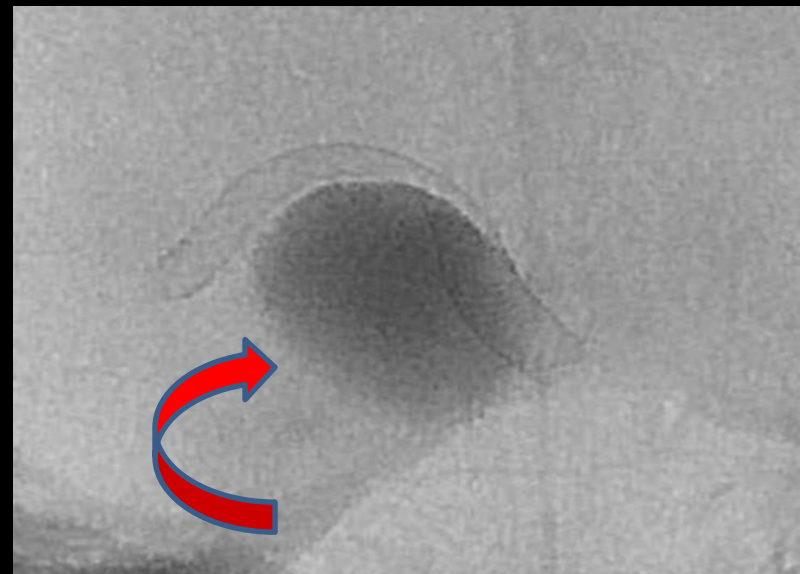
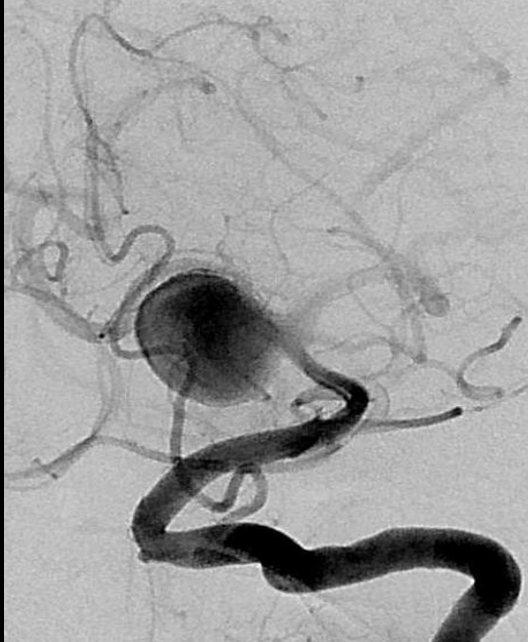
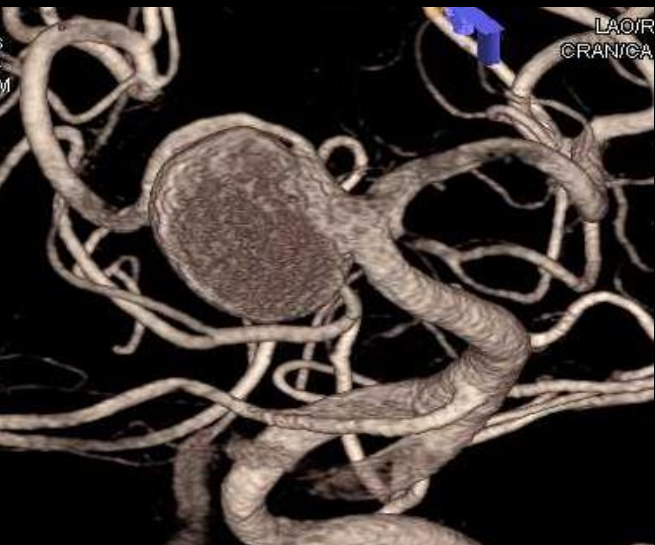


**6 MONTH CONT :  
CALLED CLASS 2 OCC  
SINCE IT WAS FIRST  
CONT**

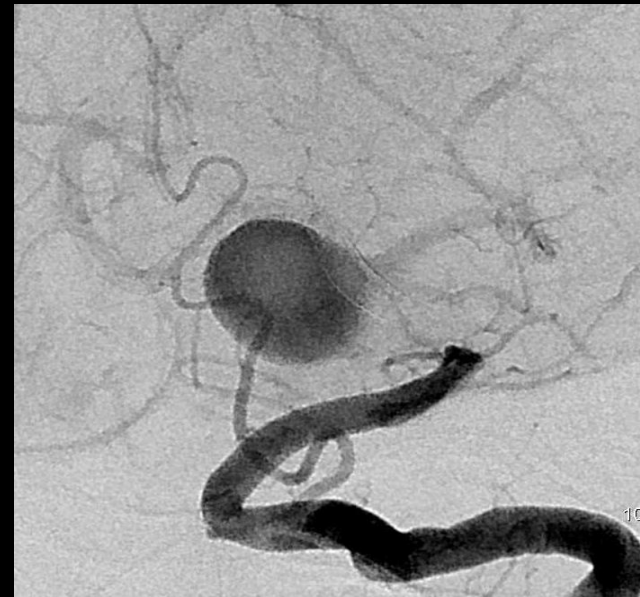
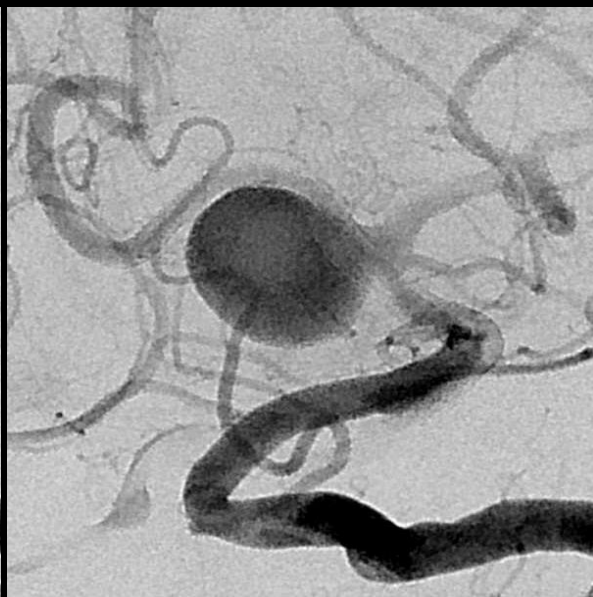
**18 MONTH CTA CONT : CALLED CLASS  
5 OCC STABLE FLOW REMODELLING**





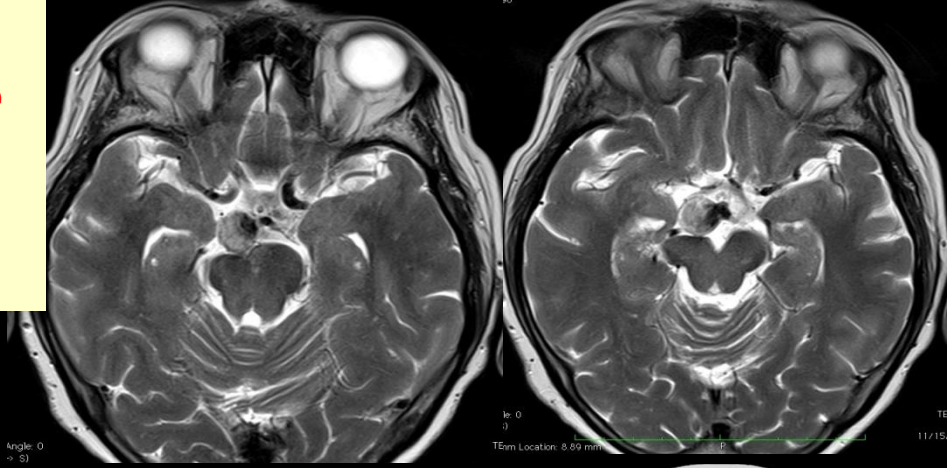


**BUT WE JUST COULD NOT PREDICT THAT THIS PROBLEM COULD GO TO THIS FAR.....**

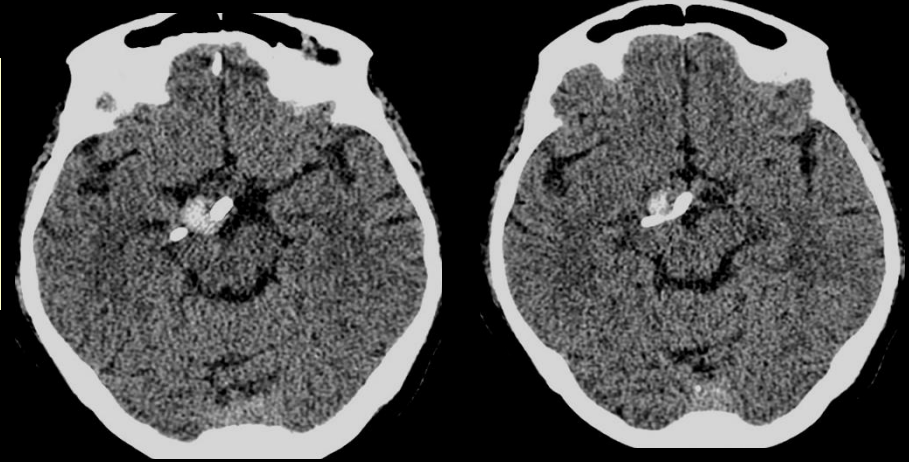




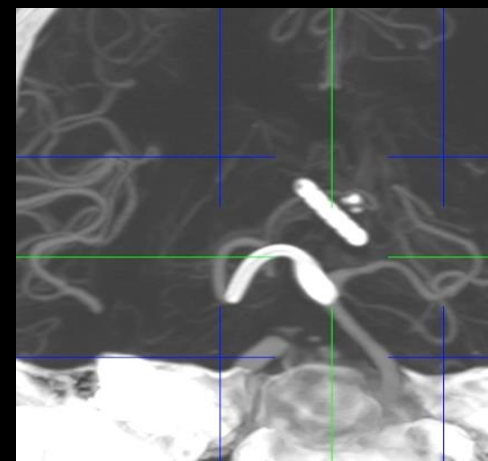
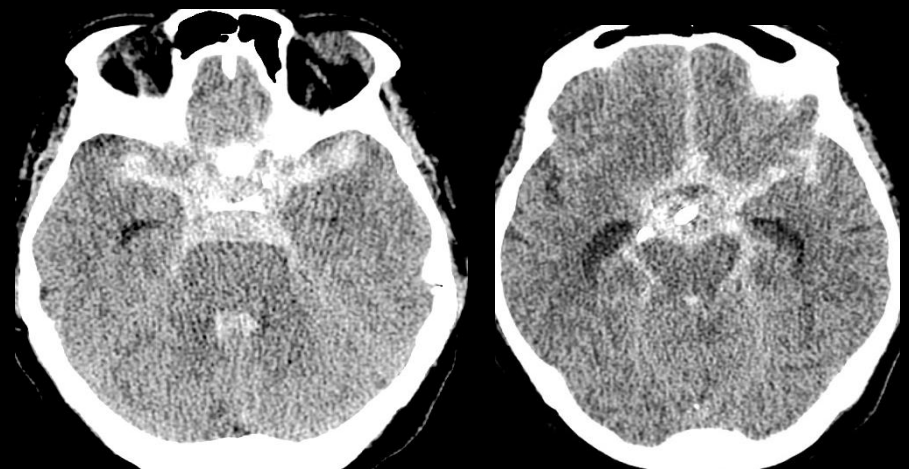
**Post op 4th day ,  
she started to have  
slight headaches  
and 5th day , she  
had severe vertigo**

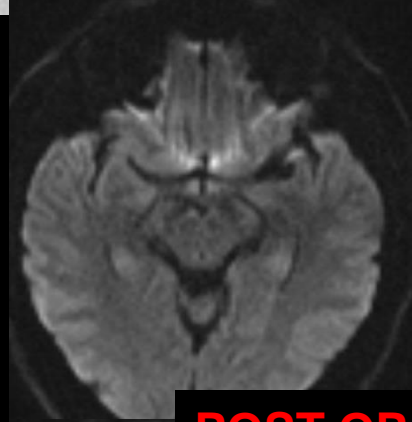
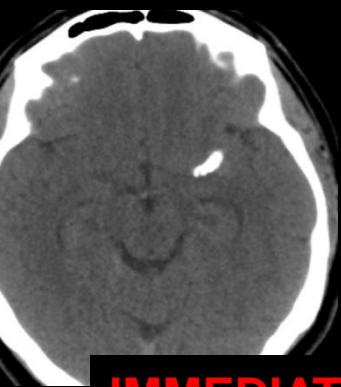
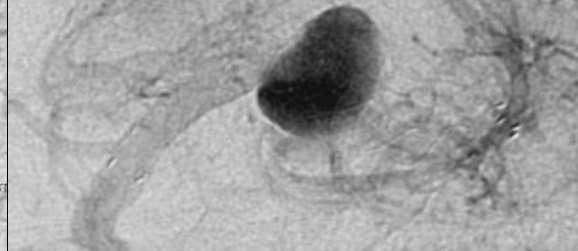
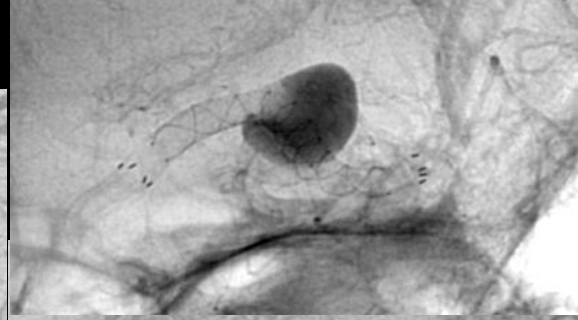
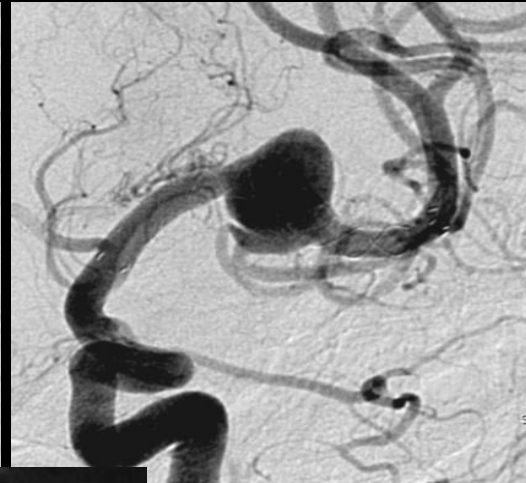
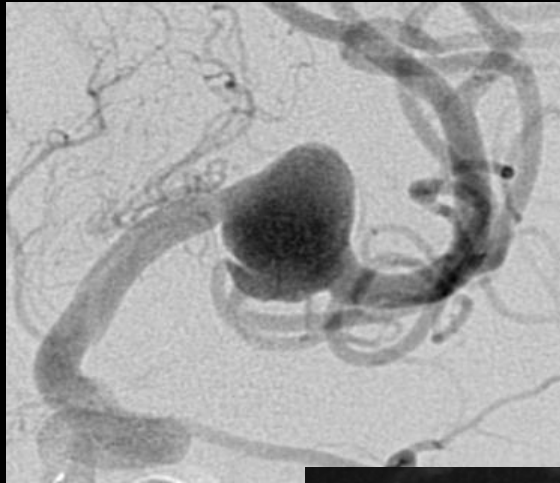


**Post op 7th day ,  
she started to have  
very severe  
headache**



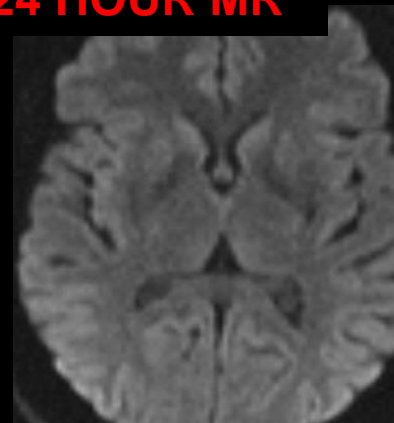
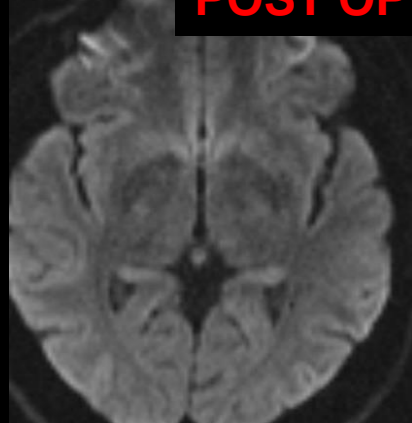
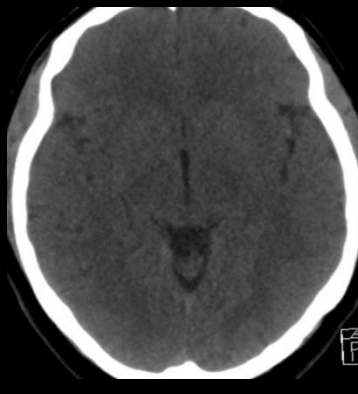
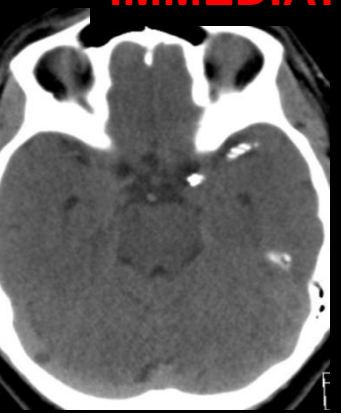
**Post op 10 th  
day , she had  
a severe SAH  
and then  
died...**

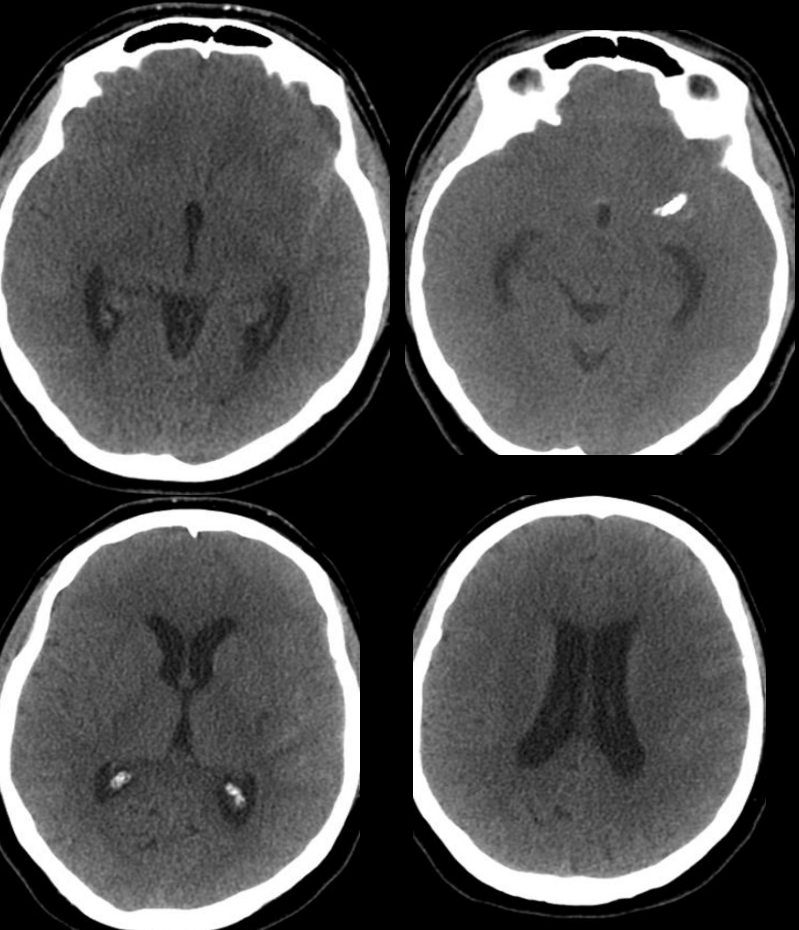




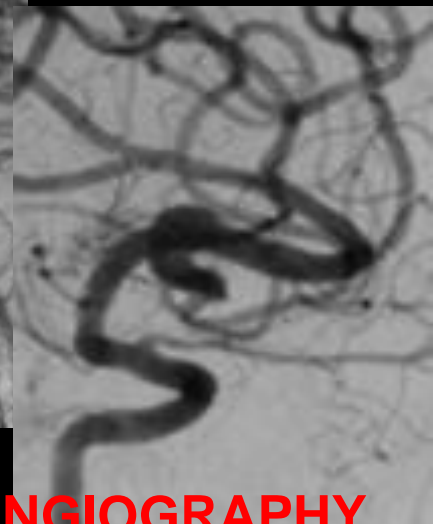
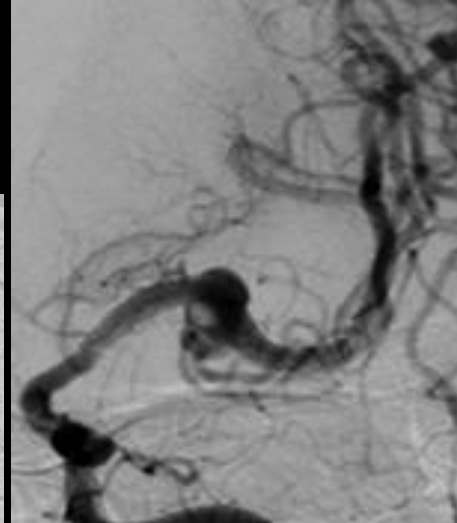
**IMMEDIATE POST OP CT**

**POST OP 24 HOUR MR**

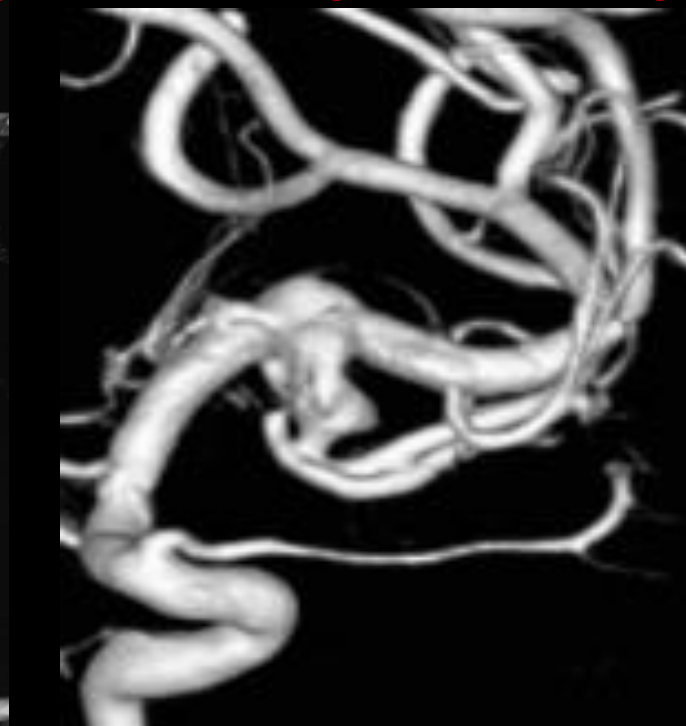


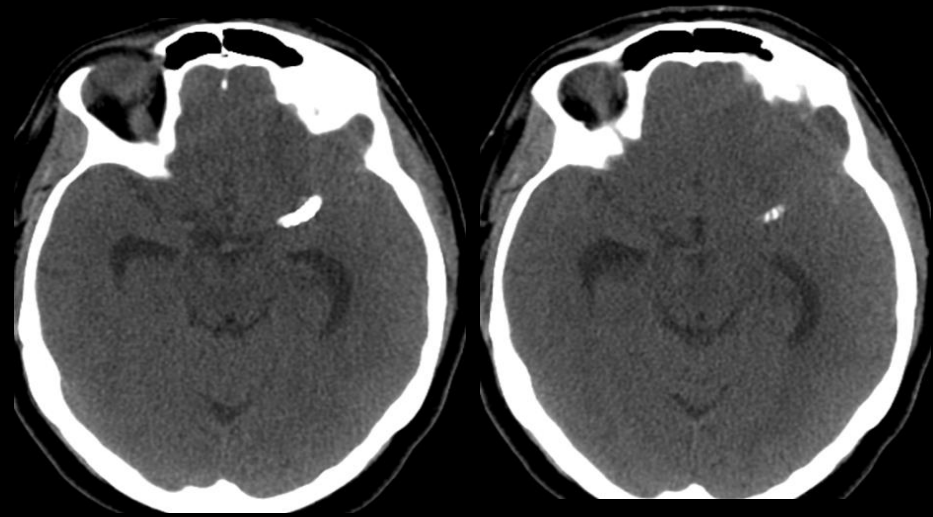


**POST OP 8TH DAY**



**CONTROL ANGIOGRAPHY  
ON THE DAY OF BLEEDING**

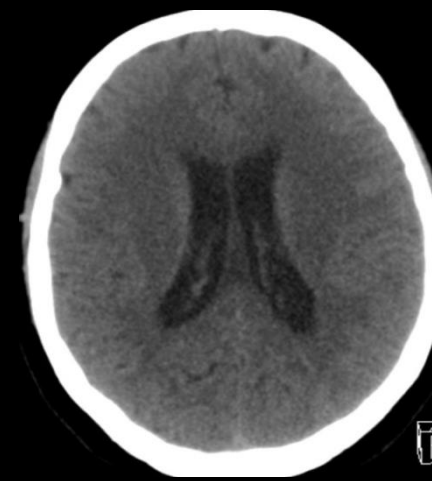
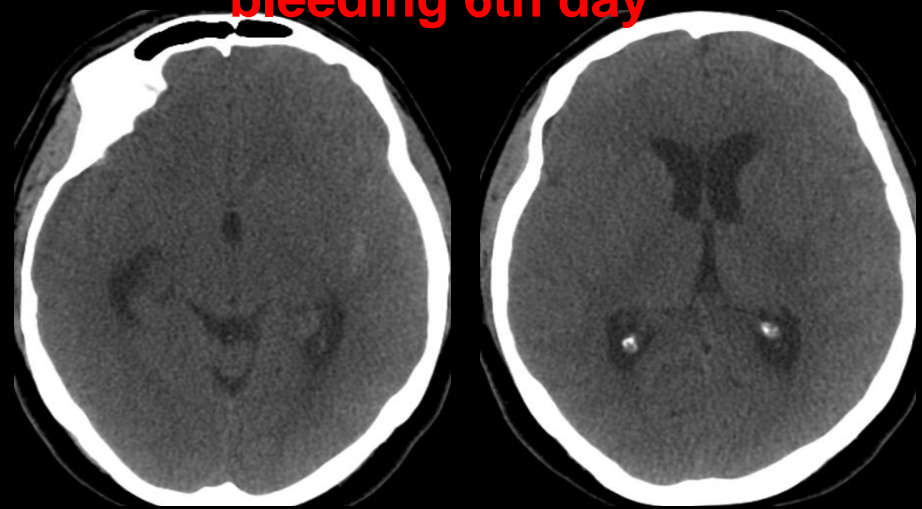


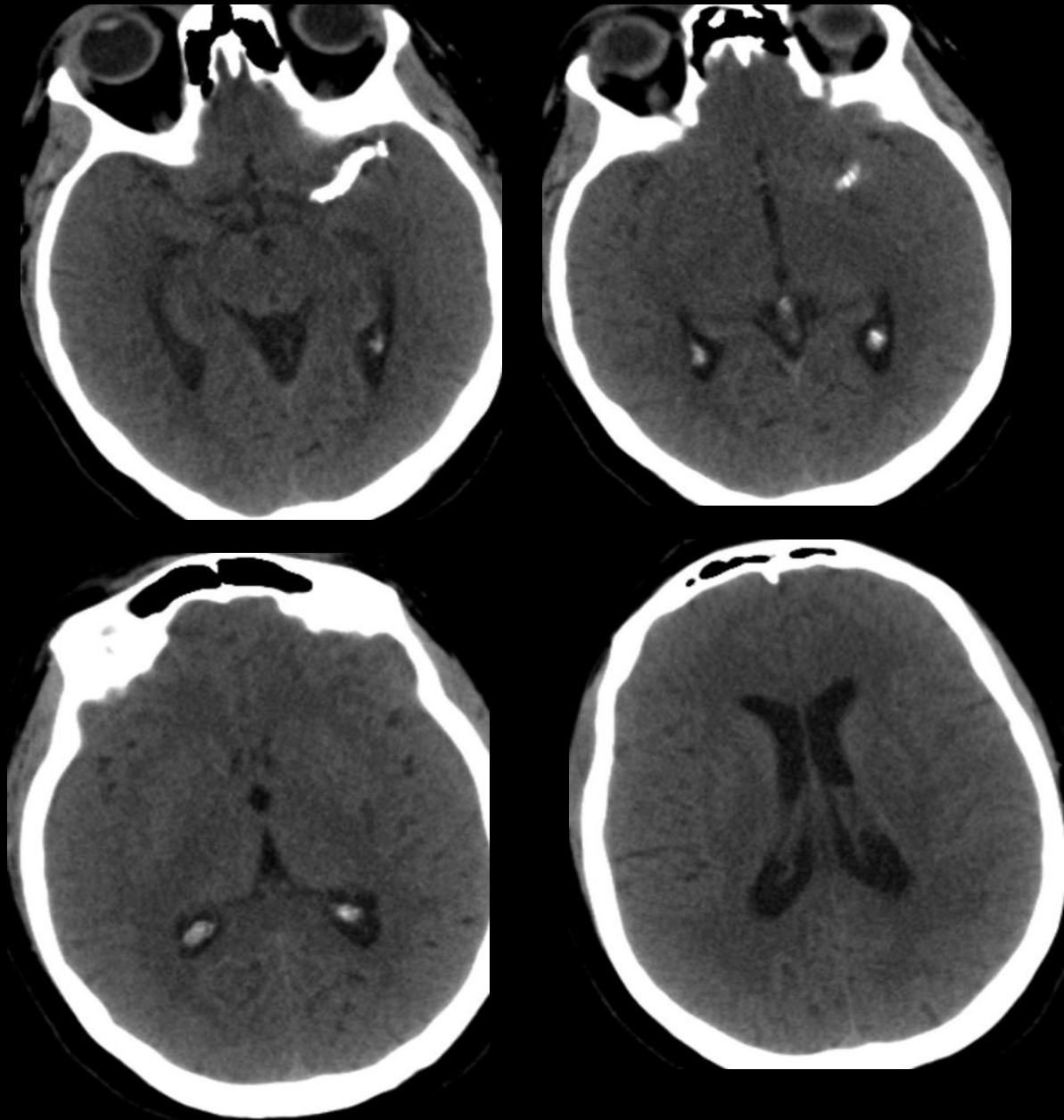


Post op 14th Post  
bleeding 6th day



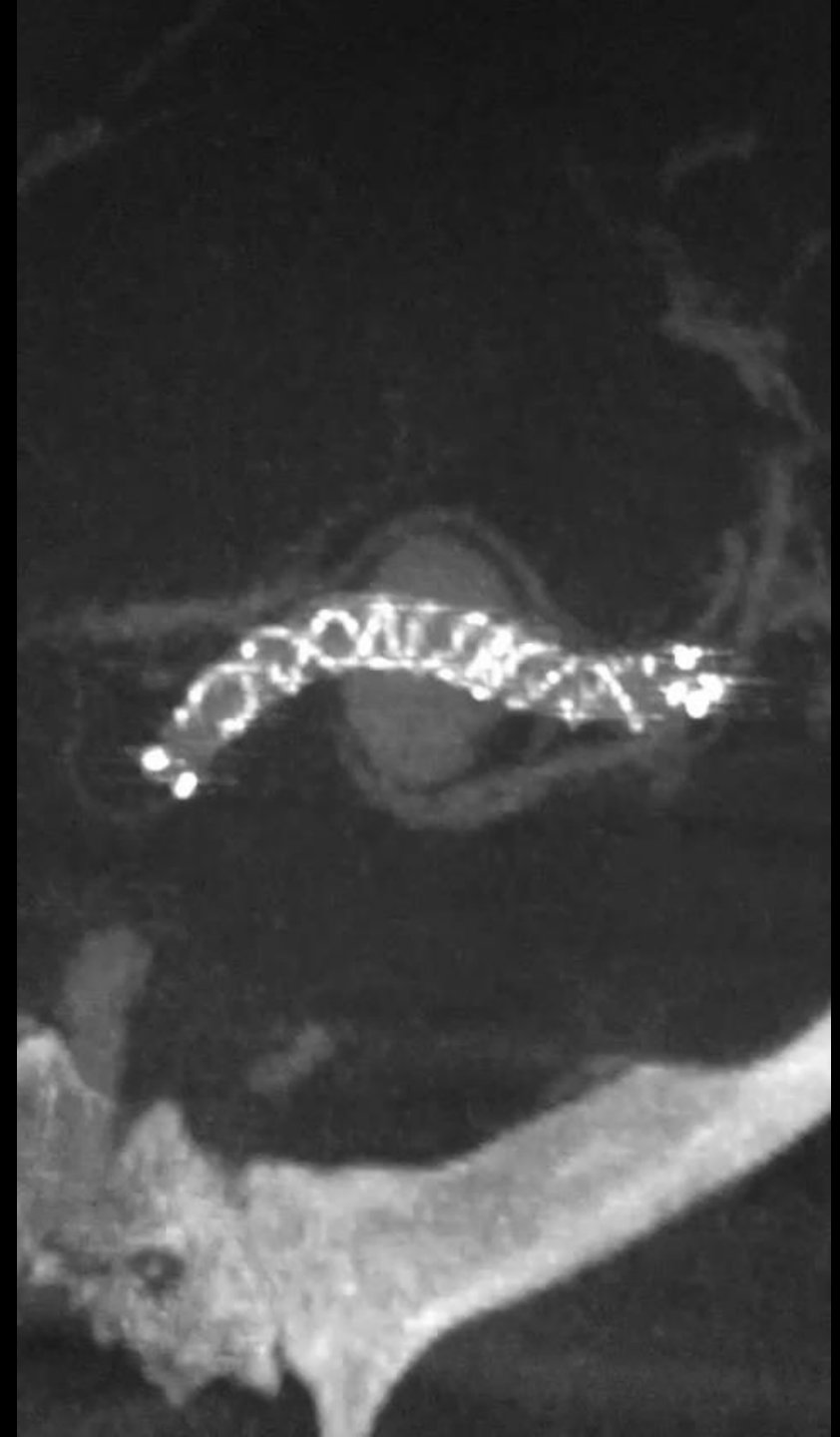
Post op 16th day  
Postbleeding 8th day



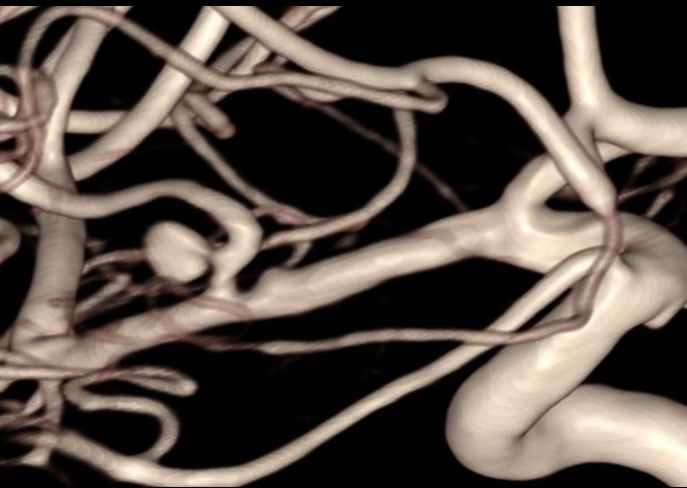
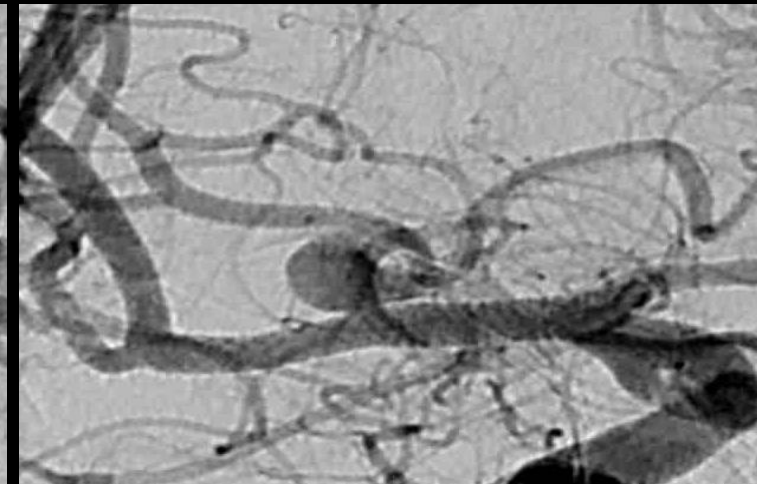
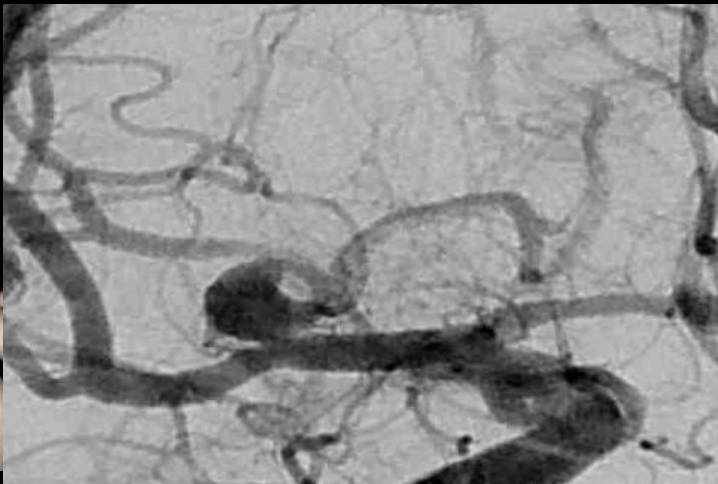
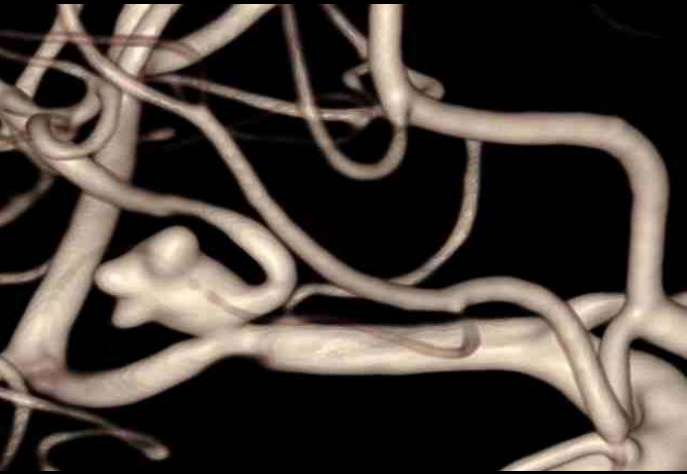


Postop embo 39th day  
Postbleeding 31th day  
The patient is intact.

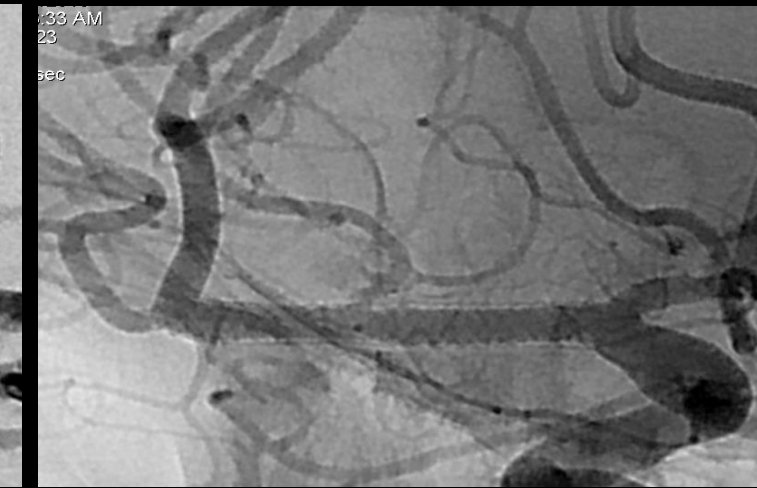
H







**6 months control**

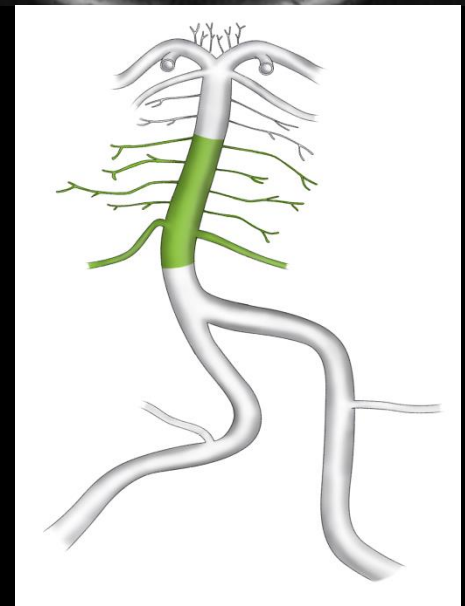
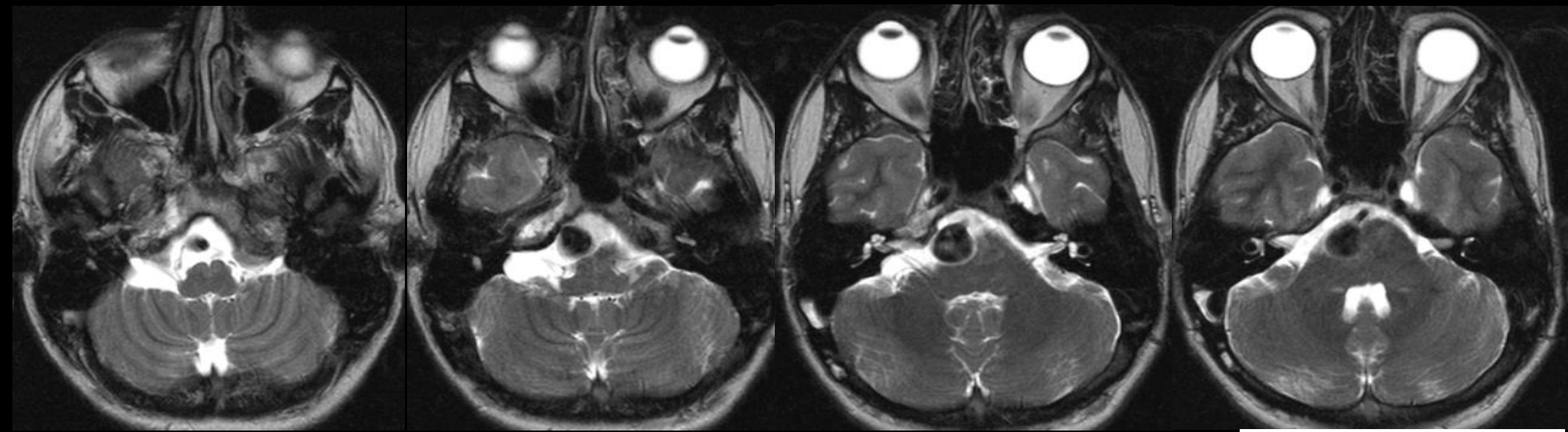


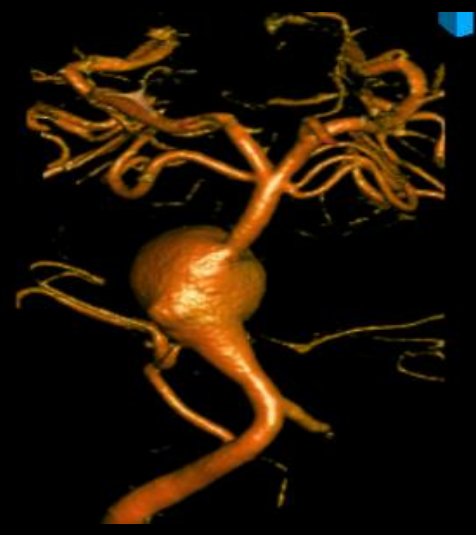
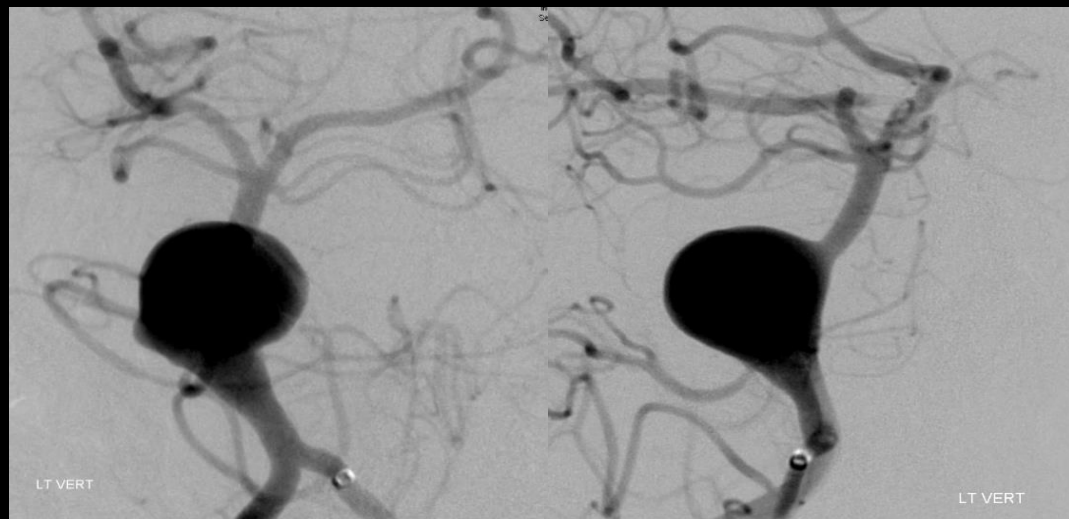
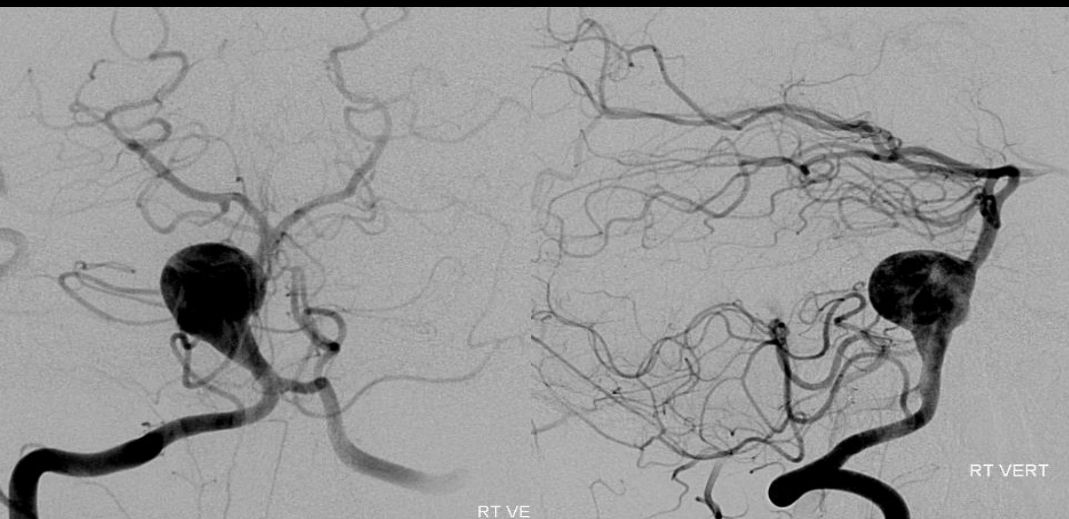


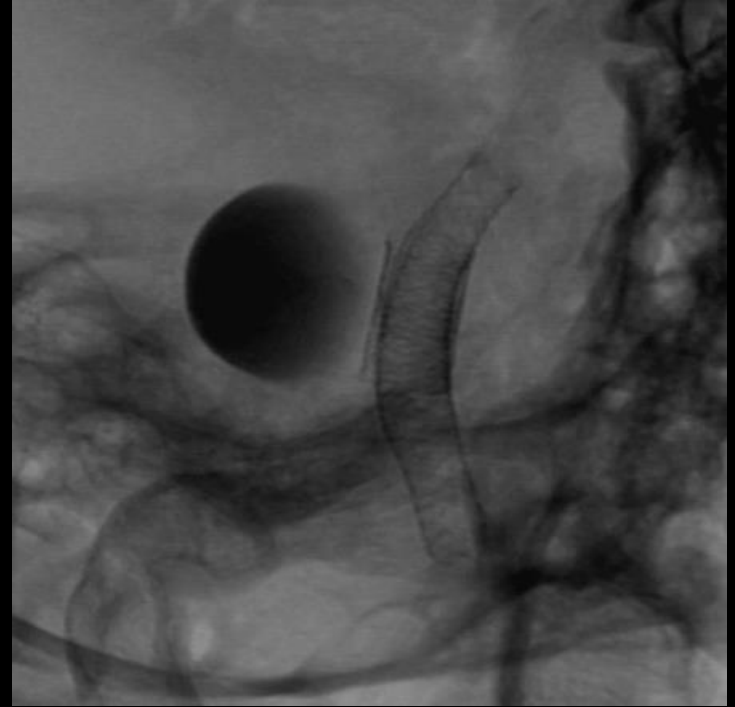


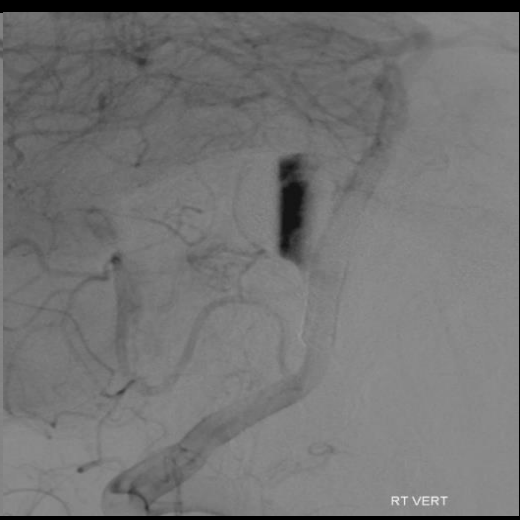
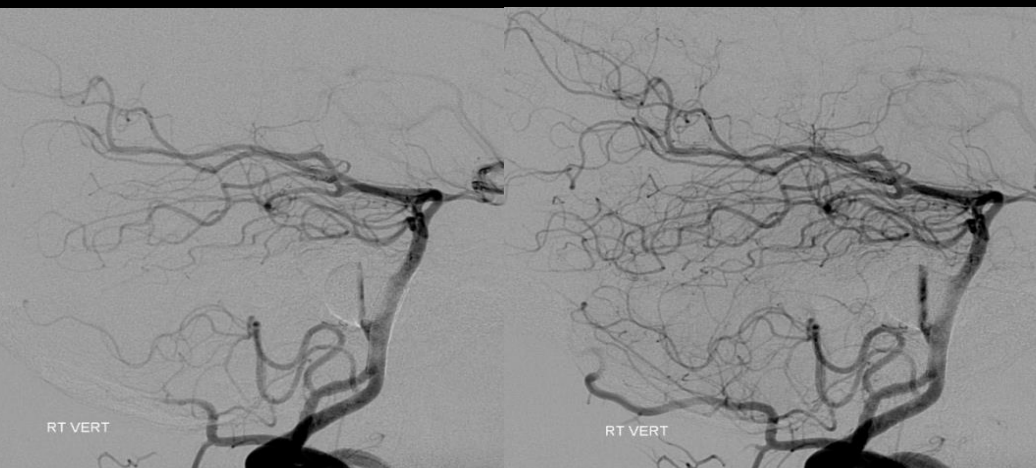
# Fusiform Basilar Artery Aneurysm

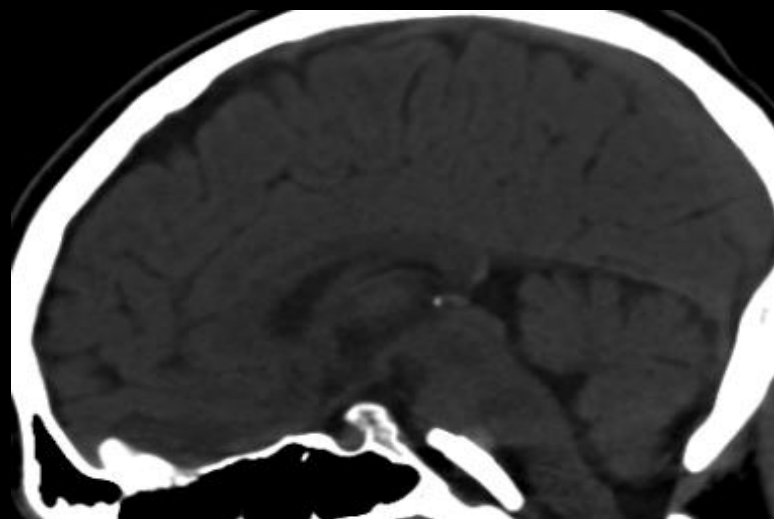
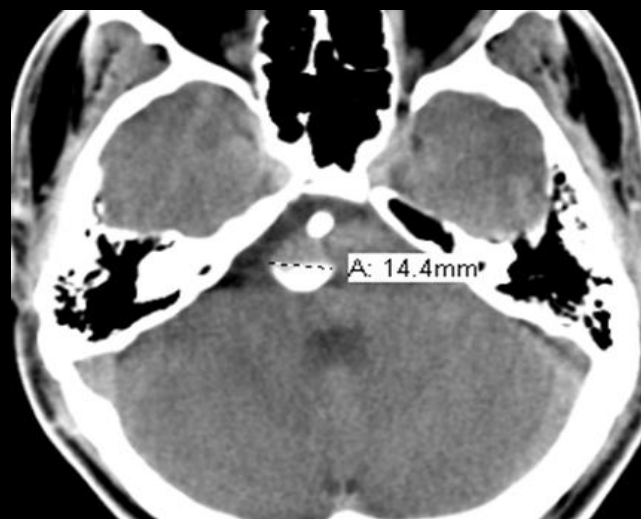
- 25 year old right handed gentleman presenting with acute onset of diplopia
- Neurologic exam: significant for right sixth nerve palsy.

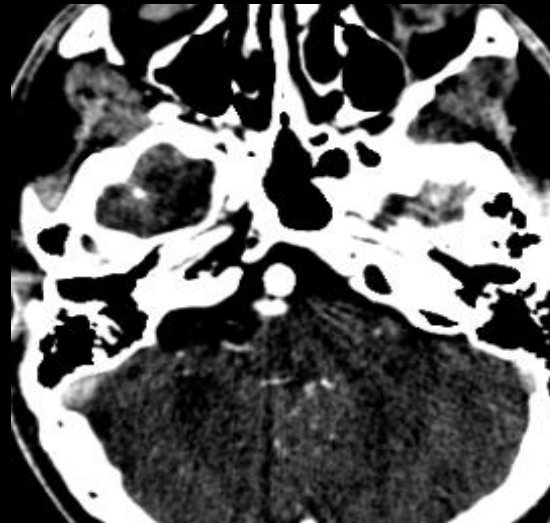
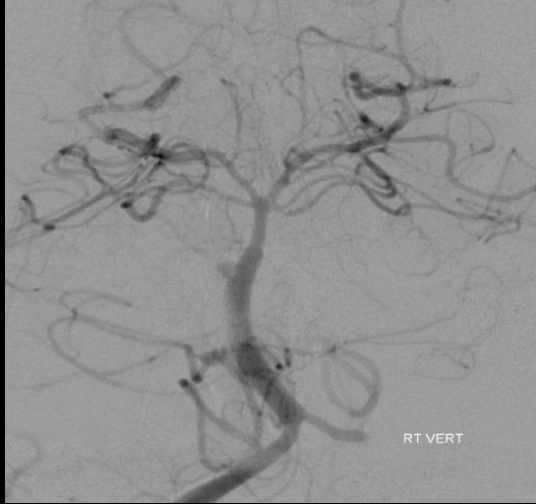




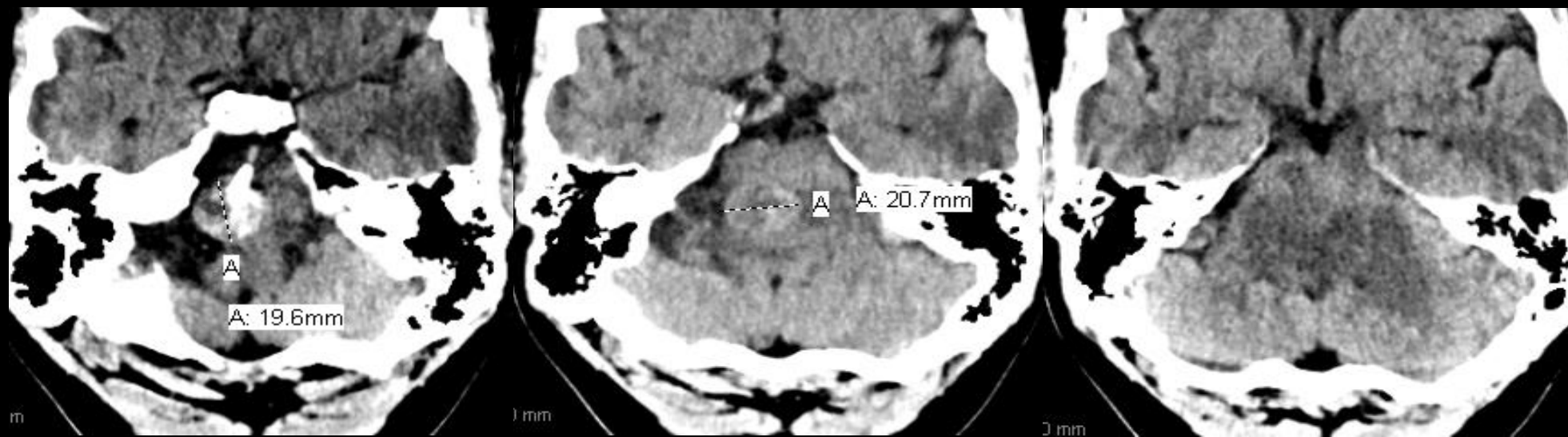


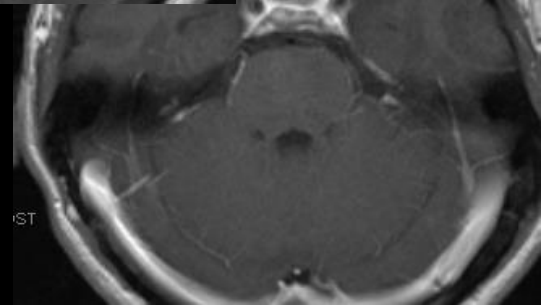
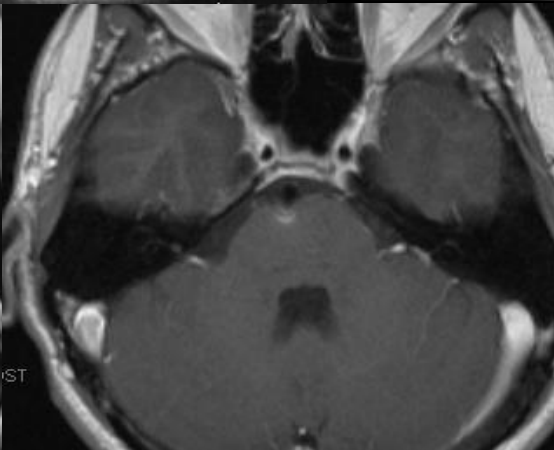
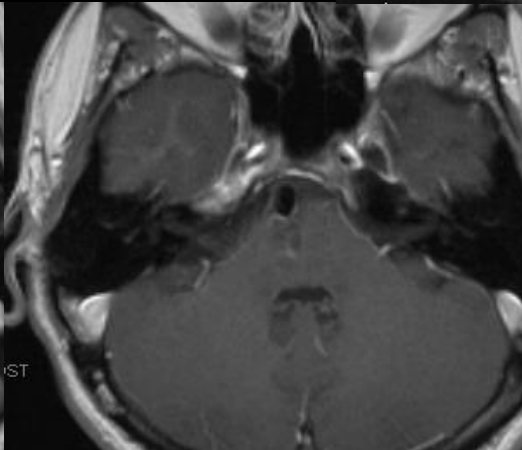
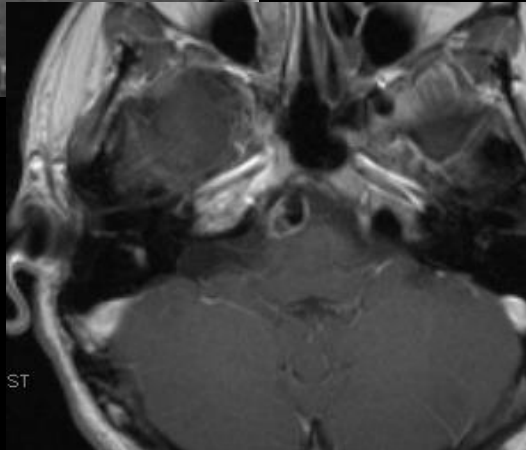
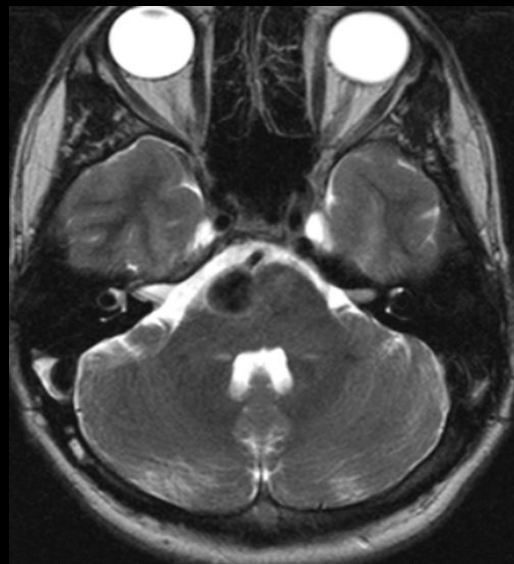
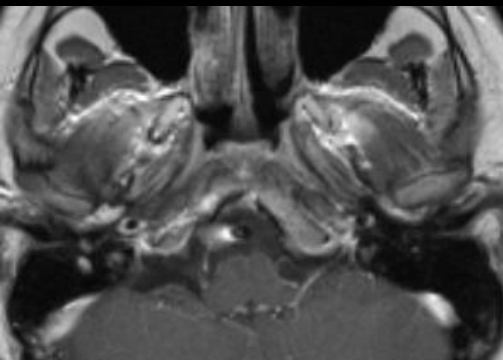


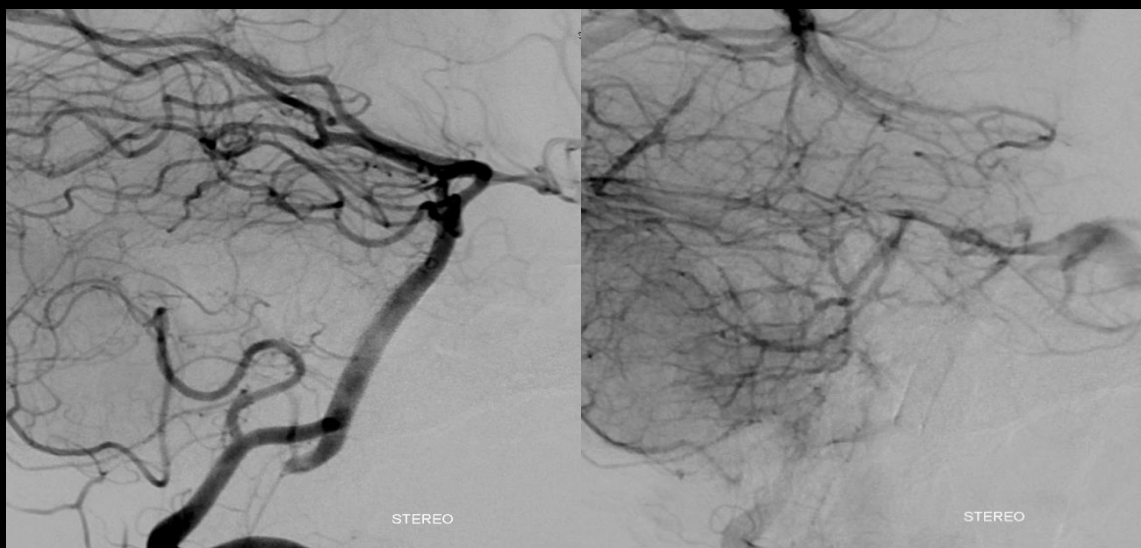
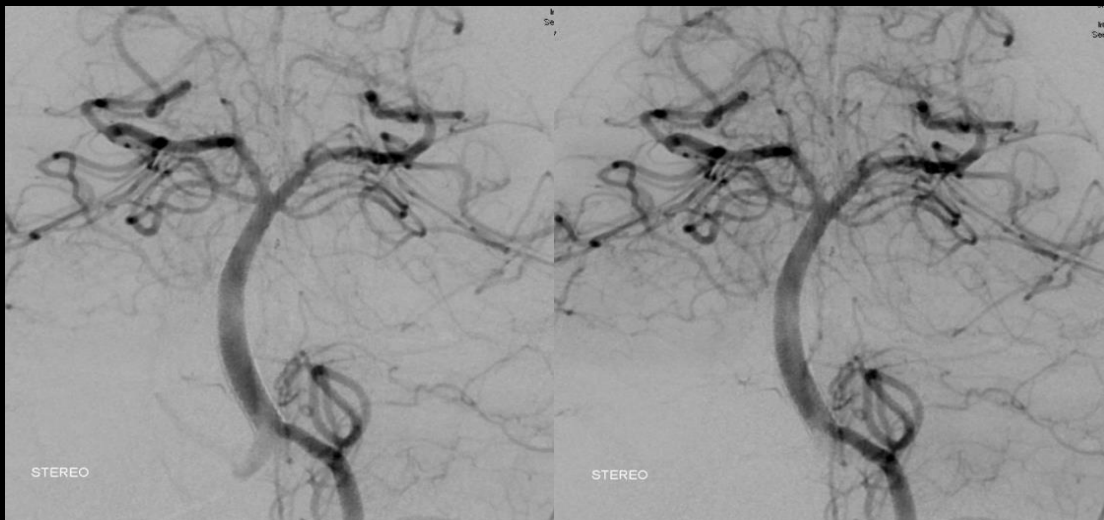






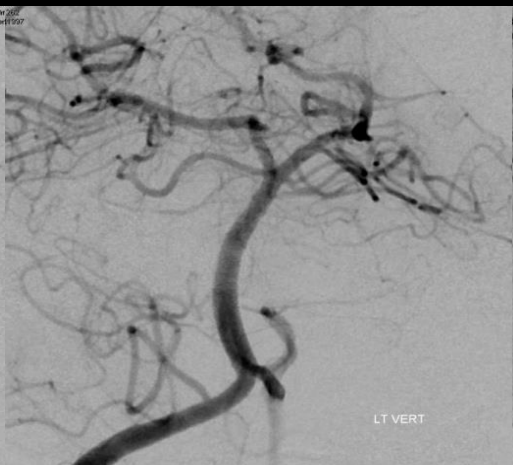








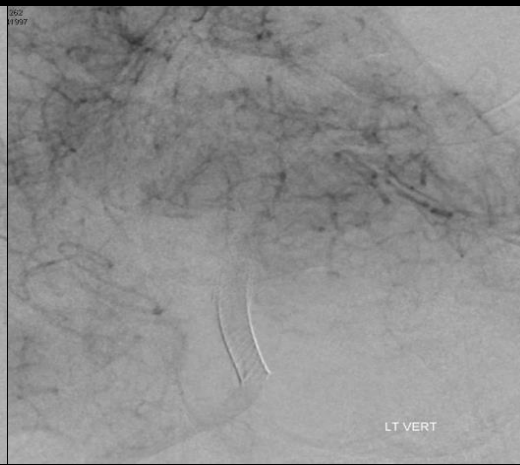
LT VERT



LT VERT



LT VERT



LT VERT



LT VERT 10 MO POST PED



LT VERT 10 MO POST PED