

POSTERIOR CIRCULATION PED

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Disclosures: consultant for Medtronic Neurovascular, Codman

Posterior PED Usage

Overall 40 per year

2011- 2

2012- 8

2013- 8

2014- 10

2015- 8

2016- 0

Washington University

LOCATIONS	CVA	DEATHS
Vertebral- 11	3	1
PICA- 2	0	0
V-B junction- 5	3	2
Basilar-3	1	0
SCA & TOB- 1	1	0
SCA- 4	1	0
PCA- 3	0	0
	25%	8%

Washington University

36 procedures in 29 patients (21 F, 8 M)

7 two procedures, 5 re-treatments,

3 acute SAH- last resort (2 dissecting TOB, 1 dissecting vertebral)

Previous: SAH-3; coil- 3

1 PED- 16

1 and 1 PED- 3

2 PED- 2

2 PED and 1- 2

3 PED- 2

4 PED and 1- 1

6 PED- 1

49 devices: average 1.75

All 5 VBJ and 2 vertebrals coiled after PED placement, 1 SCA prior

Unsuccessful-4 (2 subsequently successful-spasm,1 size,
1perforation)

Washington University

3 Deaths (Constructs 2)

Over DAPT

Under DAPT

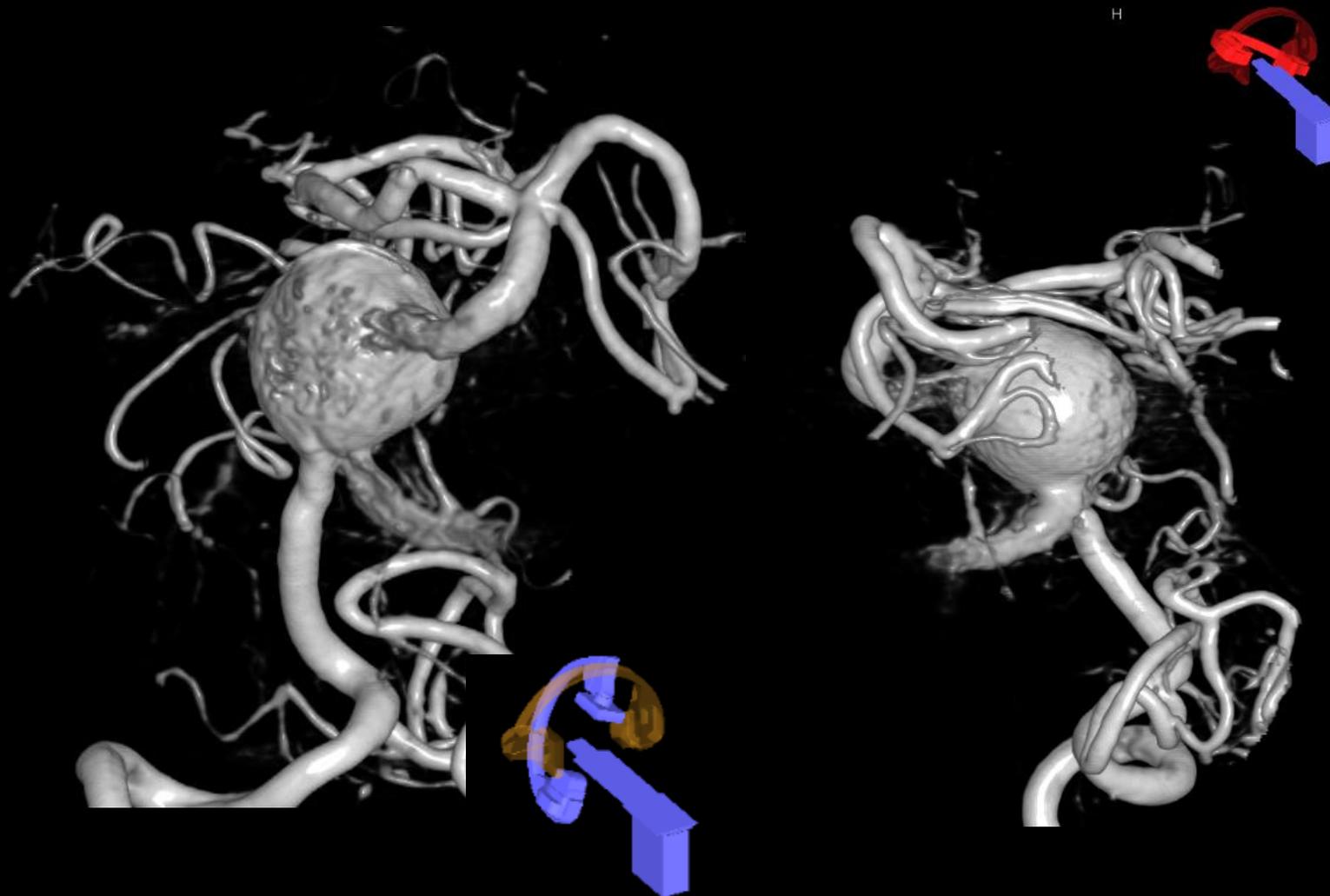
Judgement

7/18/2013

- ▣ 59-year-old female with past medical history of seizures, who had an MRI at an outside hospital, which showed a large basilar aneurysm. The patient presents today for diagnostic angiography, and treatment of basilar aneurysm with a pipeline embolization device and placement of coils. She currently has no complaints and is neurologically intact.
- ▣ She is currently on ASA 325mg daily and Plavix 75mg every third day and is therapeutic on the Verify now platelet function test.

Angiogram 7/18/13

R Vert 3D



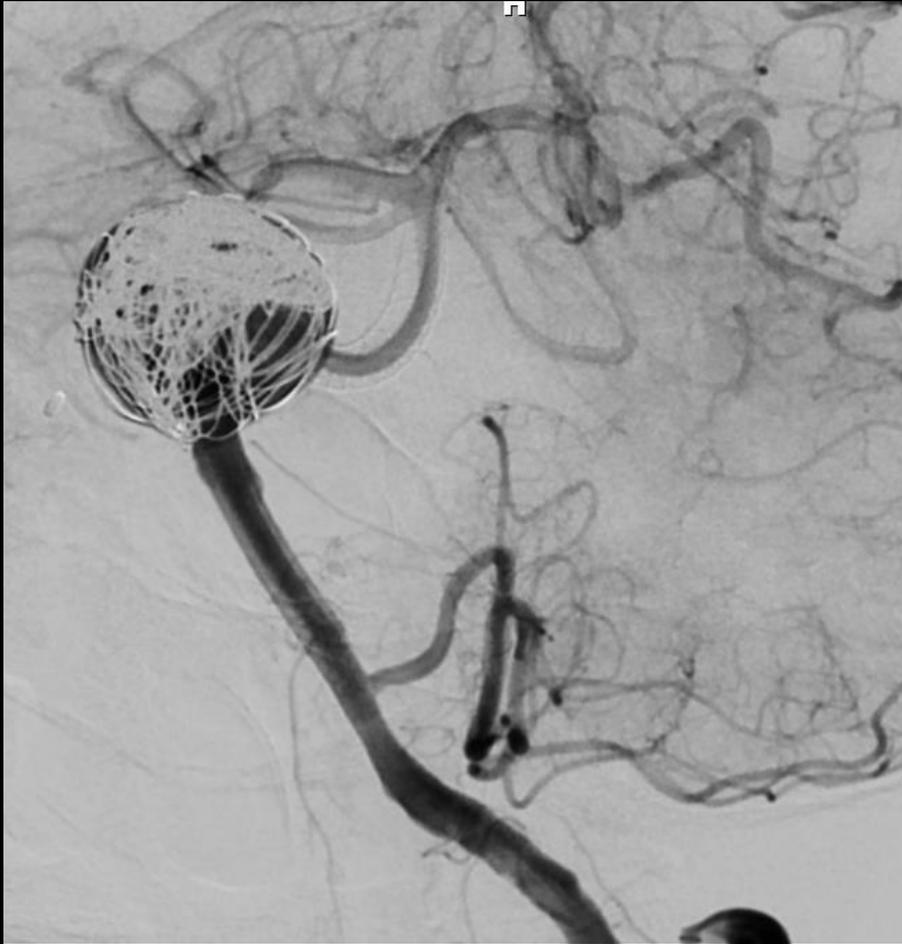
RES/SHADE

LAO/RAC
CRAN/CAUT

RT VERT

RT

Post coils



7/24/13

Patient presented to OSH in Oklahoma with weakness.

On ASA 325mg daily and Plavix 75mg every third day.

Both DC'ed

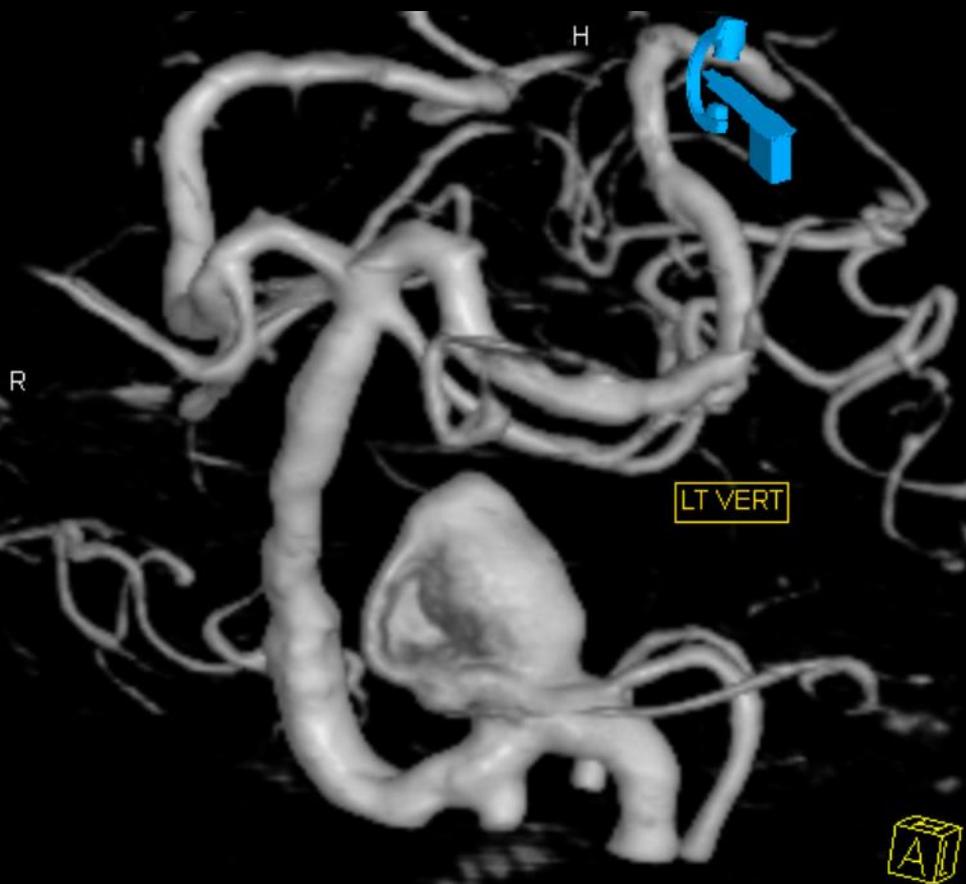
Thrombosed basilar 5 days later

Expired despite recanalization

History

62-year-old woman PMHx CAD, CHF, HTN, Afib, dyslipidemia, gout, & depression referred for treatment of an incidentally detected left vertebral artery aneurysm on contrast CT from an outside hospital

Rotational 3D Angio 09/28/2012



PED Embolization on 10/08/2012



Final Angio post 4.5X20 PED

Diagnostic Angio

02/06/2013

Lt Vert



Cerebral angiogram 2/11/14



Anti-platelets & Anti-coagulants

Heparin until certain about anti-platelets

Check anti-platelets at 2 weeks

6 months angiogram & check anti-platelets

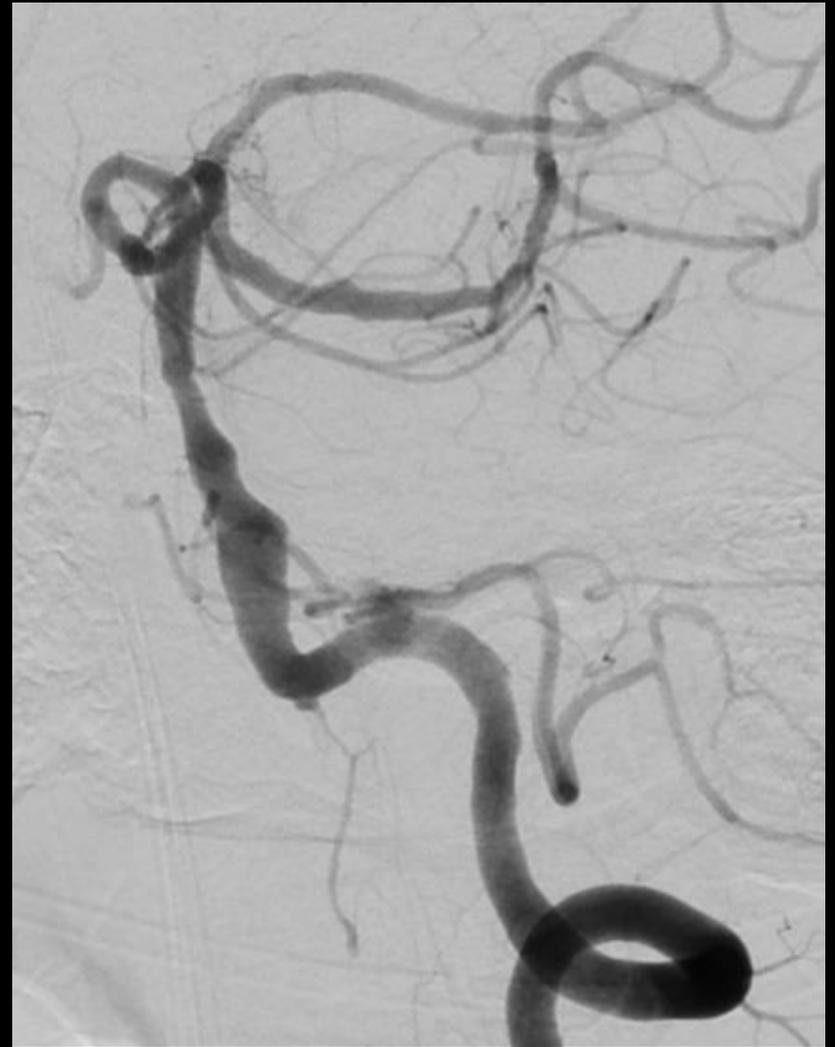
Non-filling: stop clopidogrel slowly; ASA continues

Filling: another PED? Stop clopidogrel?

Fusiform; V-B Circulation; Perforators: 1 year

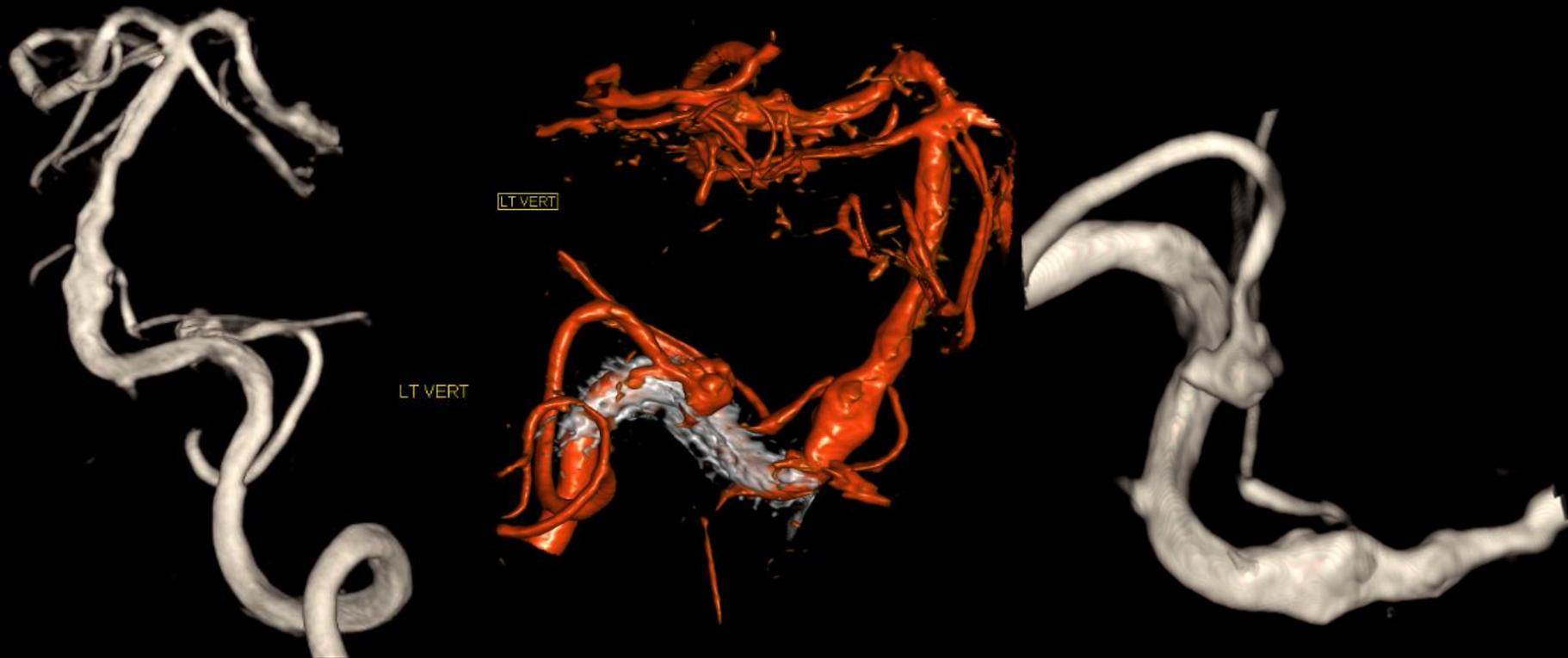
Parent narrowing: continue for another 6 months

Cerebral angiogram 10/29/14

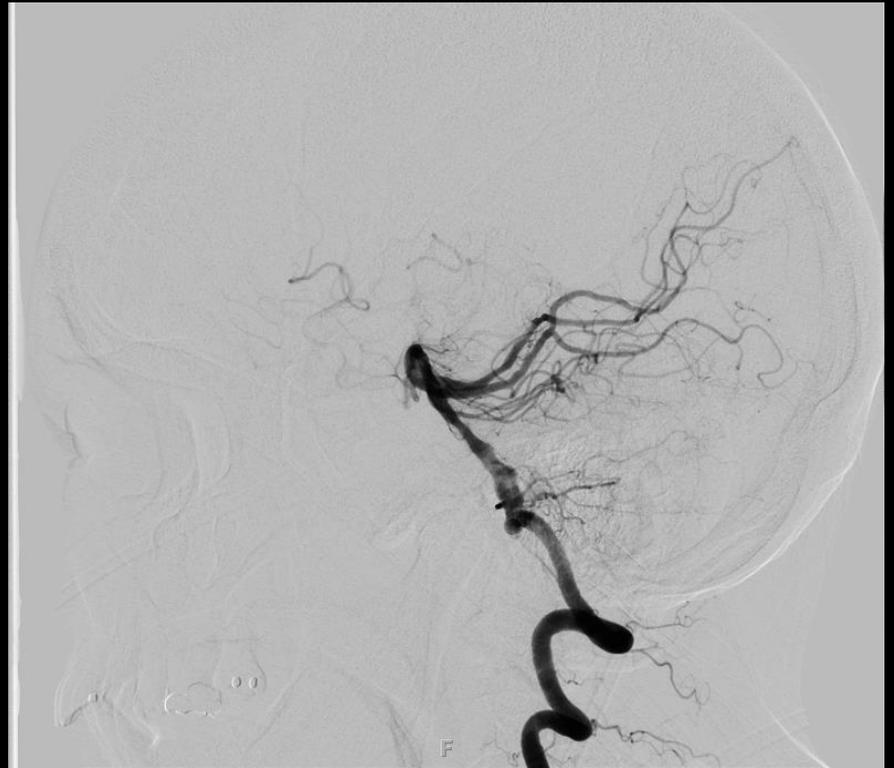


Cerebral angiogram 10/29/14

4.75X20



Cerebral angiogram 7/20/15



Cerebral angiogram 7/20/15



Anti-platelets & Anti-coagulants

ASA 325 mg. po 21-28 days prior

Clopidogrel 75 mg. po 21-28 days prior

Anti-Platelet Testing

Platelet aggregometry

Verify Now (100-200 PRU)(cancel procedure)

Heparin (monitored by ACT)

Post procedure: ASA & clopidogrel 6 months(taper)

ASA indefinitely

Prasugrel instead of Clopidogrel

Delgado et al JNIS: <60 hemorrhagic PRU >240 ischemic

J Am Coll Cardiol 2011;58:1945-54 PCI <90 bleeding PRU >208 thrombotic

Washington University

3 ReoPro- 8% procedures

- All 3 PCA-Basilar (of 8)

Filling- 4

Occluded- 13

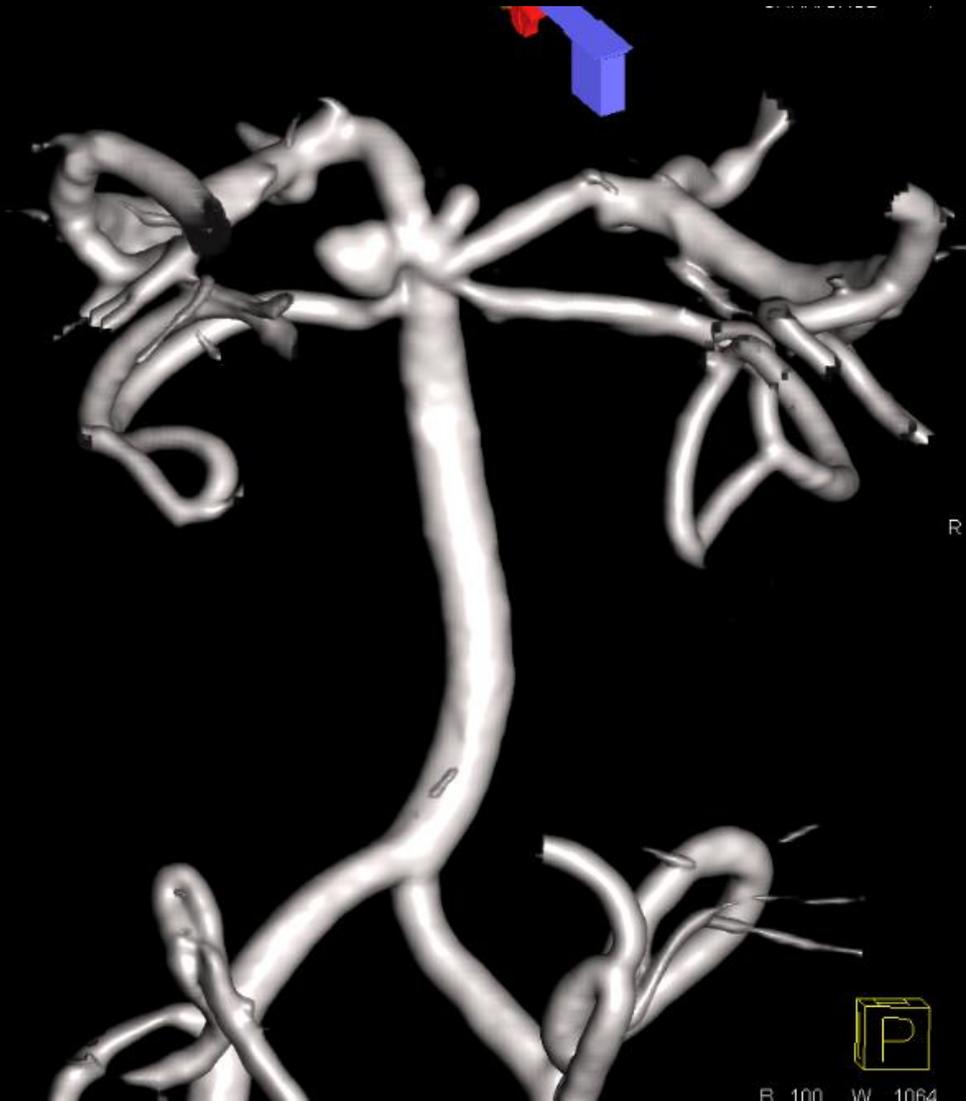
Awaiting F/U- 9

4 Balloons- 11% procedures

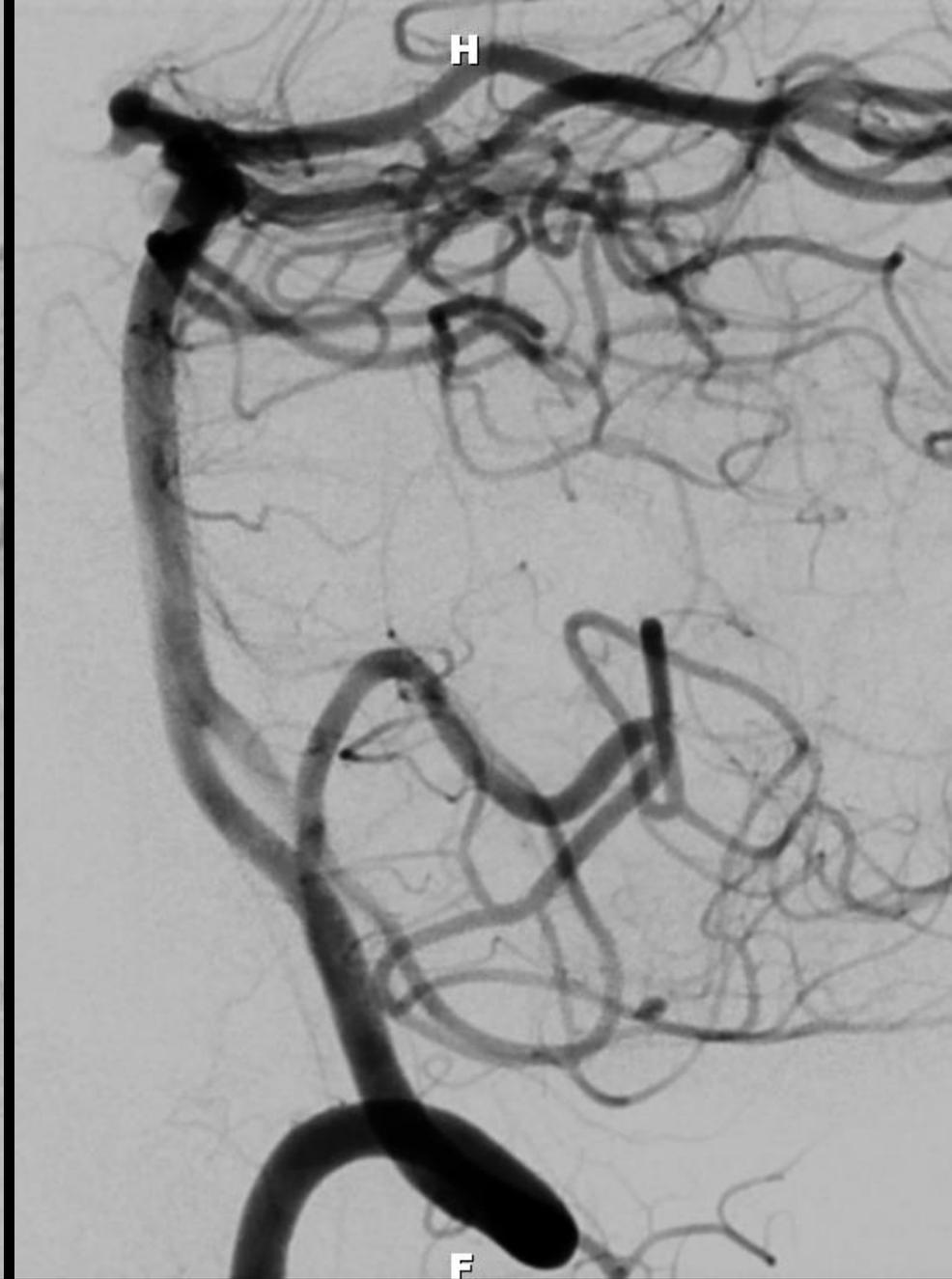
- 3 of 4 were of 11 constructs

- ▣ 42-year-old female with a history of autosomal dominant polycystic kidney disease, had a screening MRA which revealed posterior circulation aneurysms. Subsequent angiography demonstrated an approximately 5 mm SCA aneurysm, and a smaller 2 mm basilar artery aneurysm. The patient is neurologically intact, and presents today for embolization of these aneurysms. She is on Effient as she was resistant to Plavix.

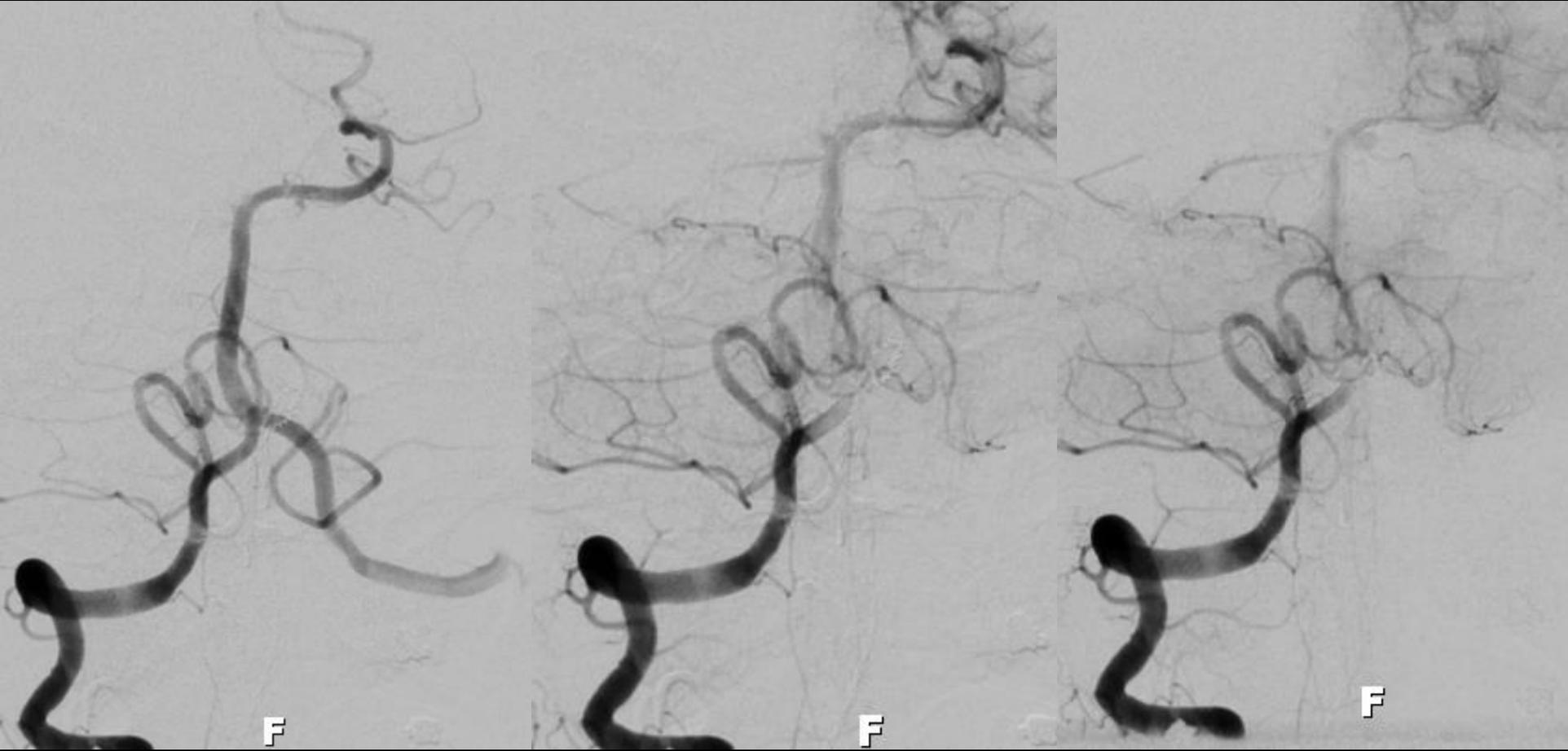
3D Angiography Pre-Embolization



- Larger aneurysm originates from basilar near left SCA
- Smaller aneurysm originates near junction of basilar and left P1
- One PED should treat both

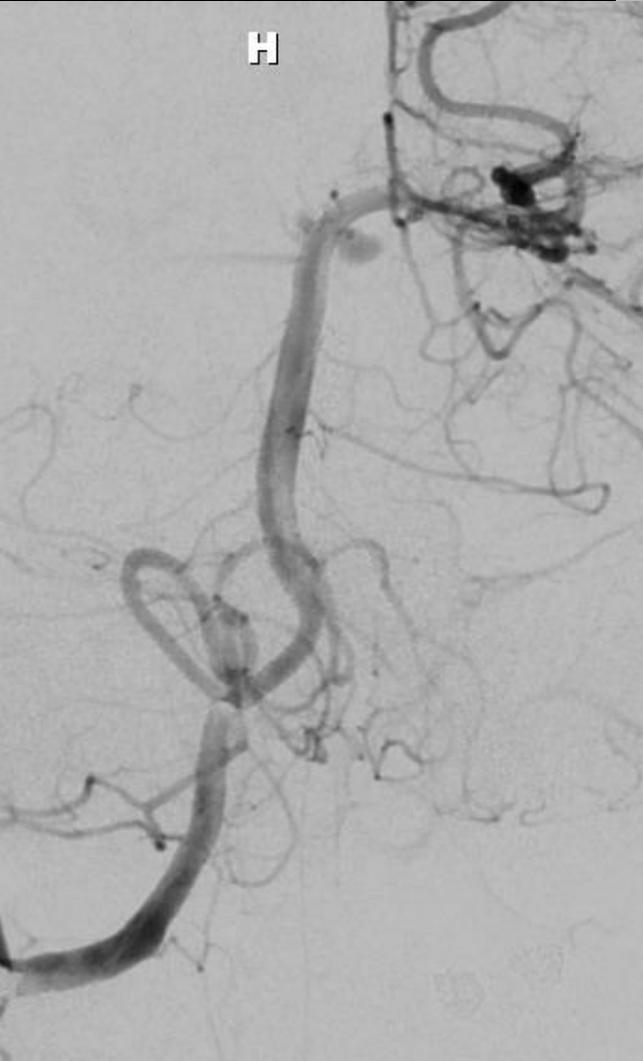


Right Vertebral Working Projections Pre-Embolization

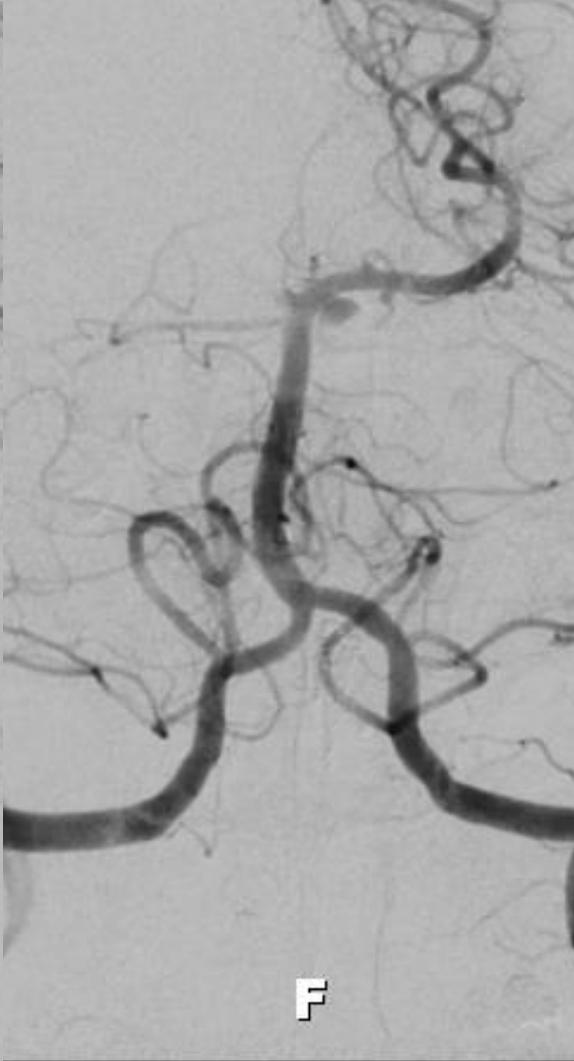


Right Vertebral Artery Post-Embolization 3.0 x 16 mm PED

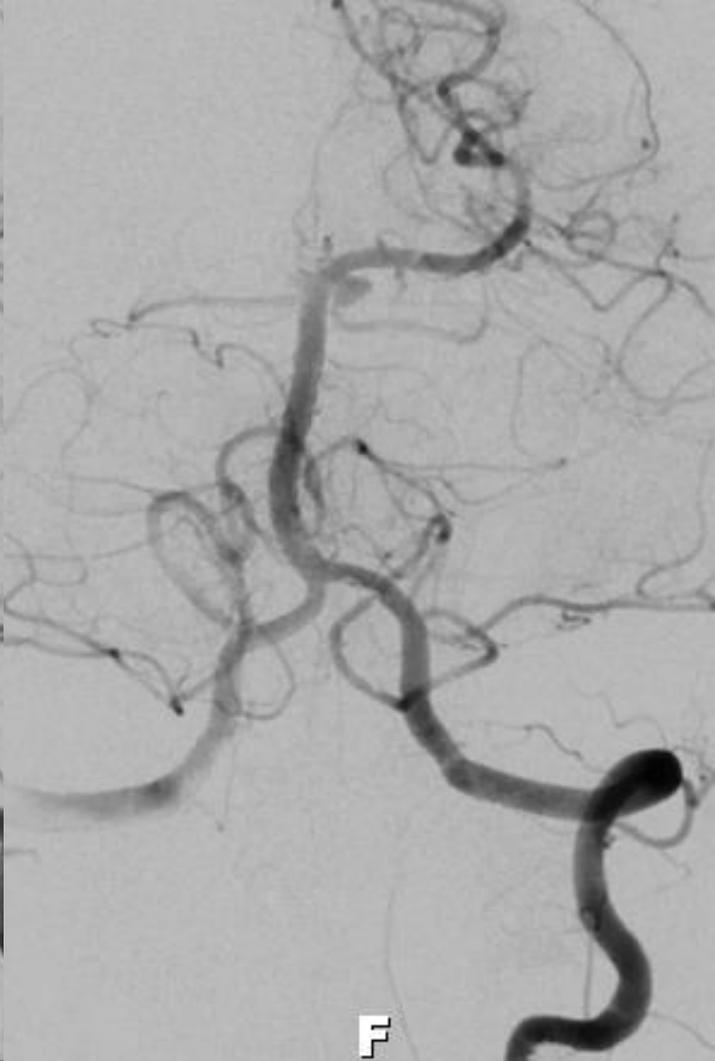
- Right SCA opacifies in a delayed fashion
- Left SCA does not opacify
- Right P1 does not opacify



15 minutes post-10mg IA
Reopro

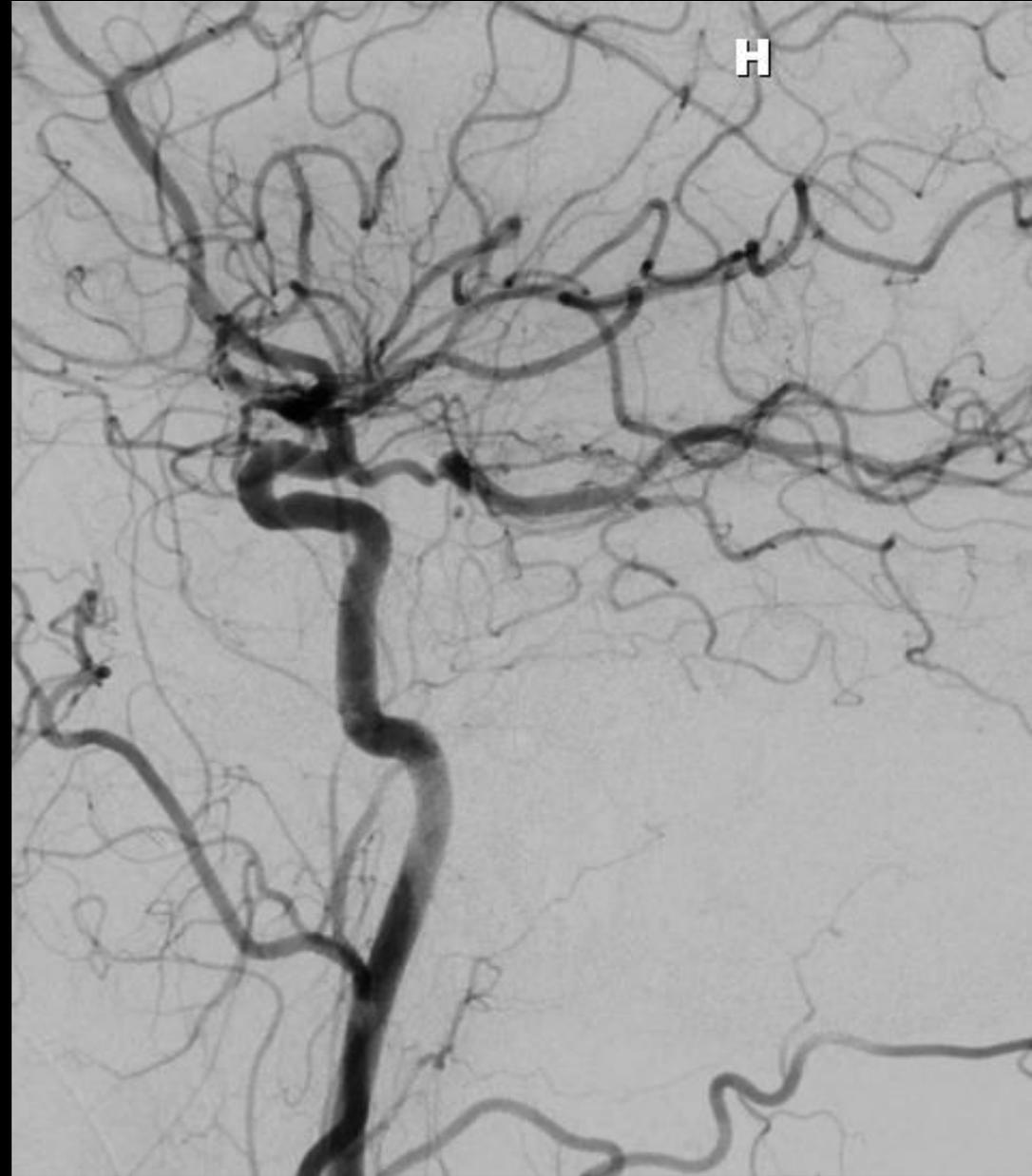
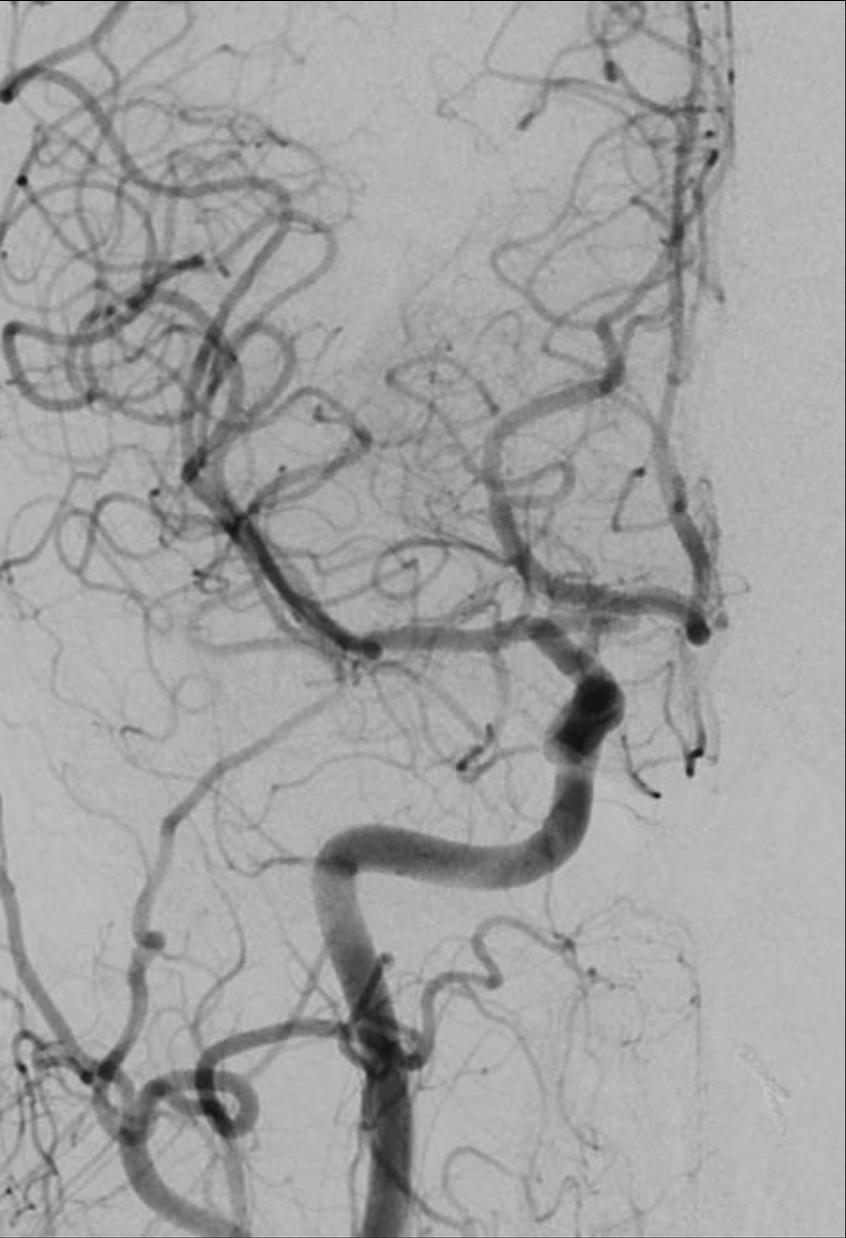


15 minutes post-15mg IA
Reopro



30 minutes post-15mg IA
Reopro

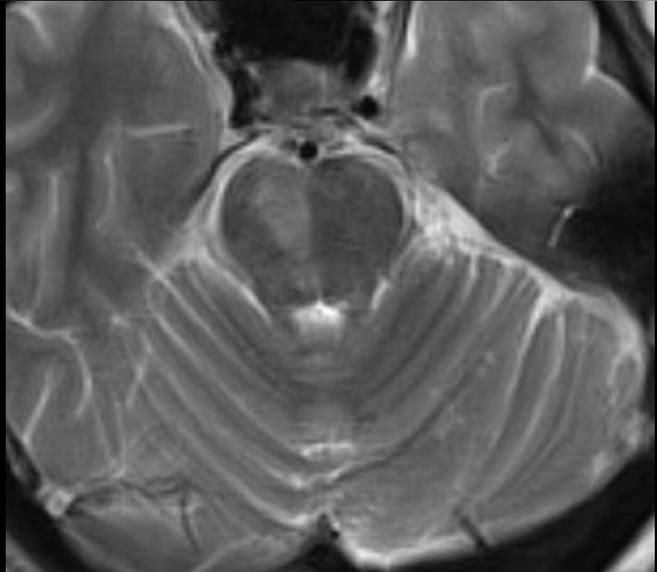
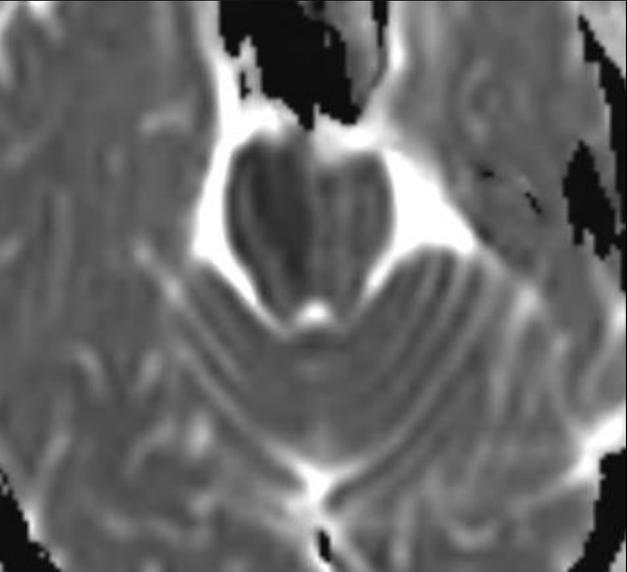
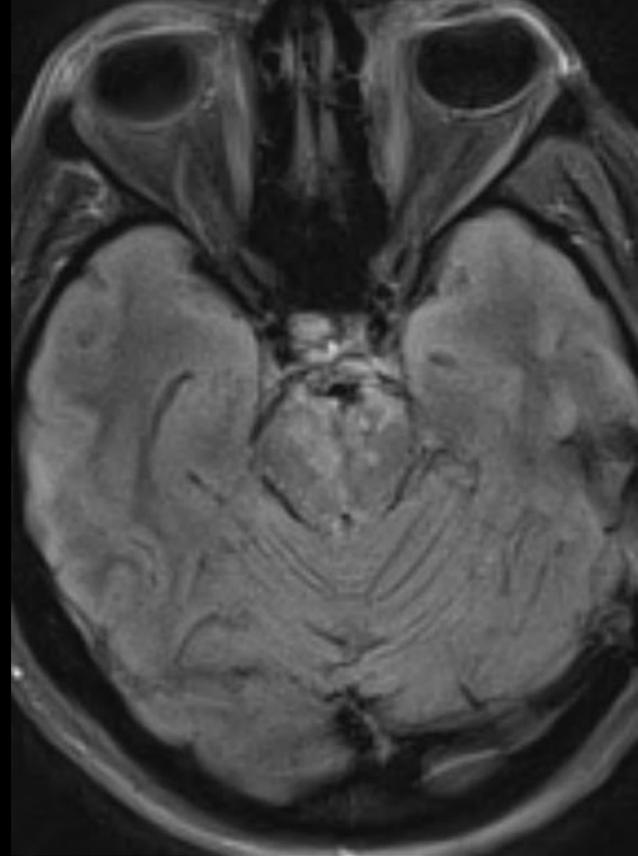
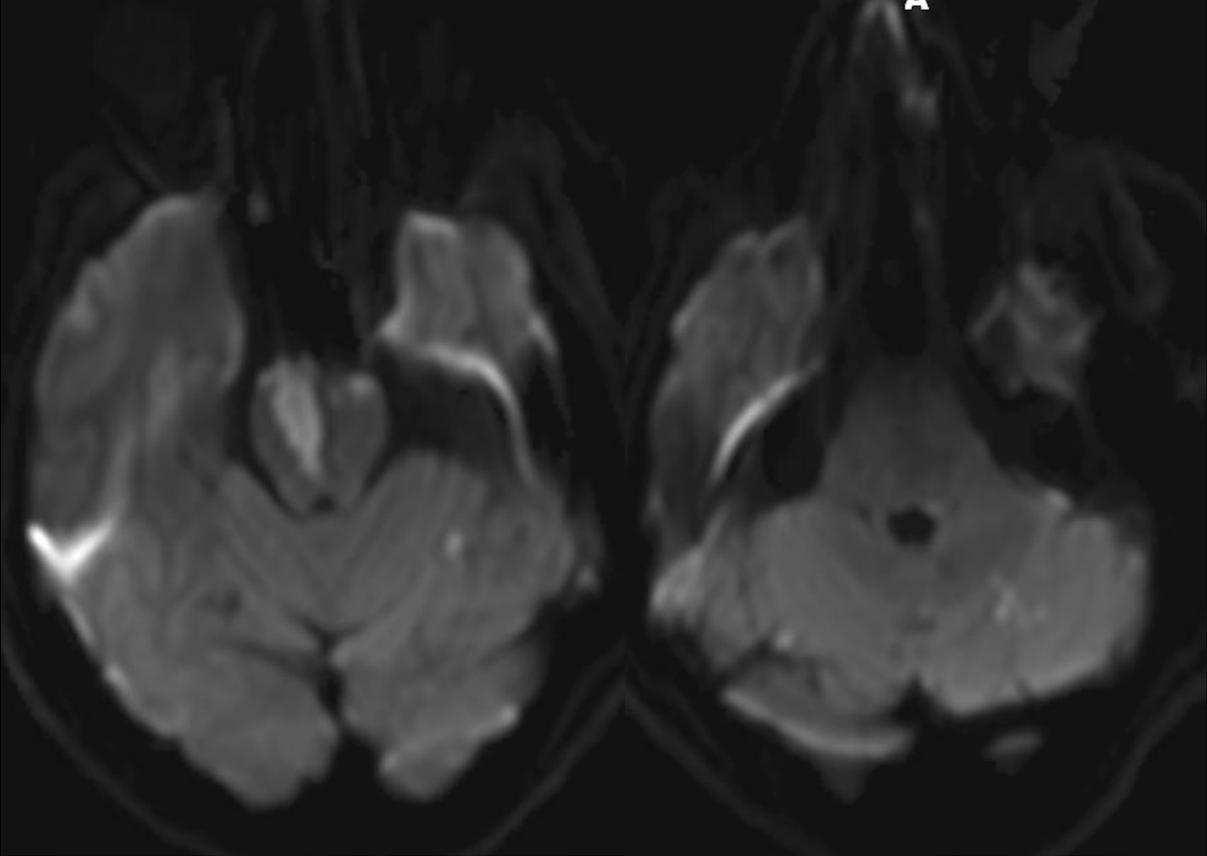
- Improving opacification of both SCAs with additional time and Reopro



Right CCA Post-Embolization

- Right PCA opacifies via the PCOM, as does the right SCA

- ▣ The patient was placed on an IV Reopro infusion of 10 mcg / minute for 12 hours.
- ▣ She awoke neurologically intact but soon developed blurry vision with disconjugate gaze
- ▣ The patient was placed on heparin with a goal PTT of between 50 and 70, pending an MRI

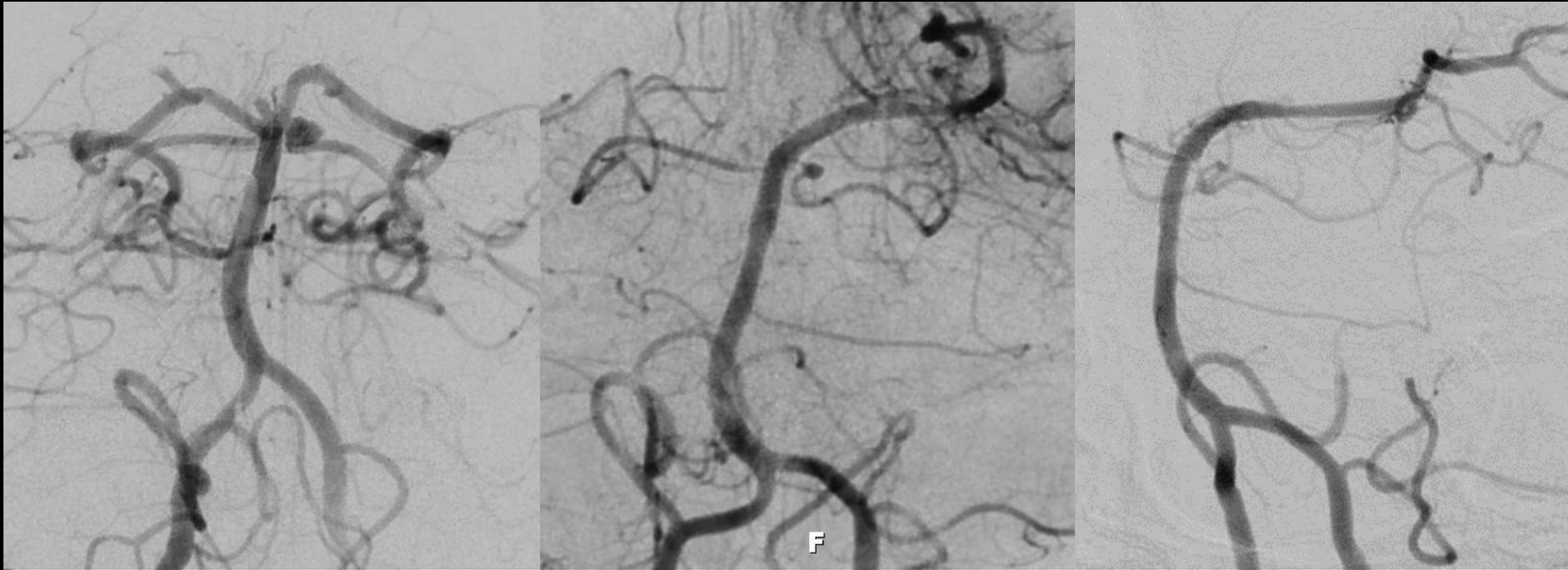


- ▣ After the MRI, the heparin gtt was stopped
- ▣ The patient improved on POD #2, with decreased visual symptoms and was discharged home on POD#2 with outpatient rehab.

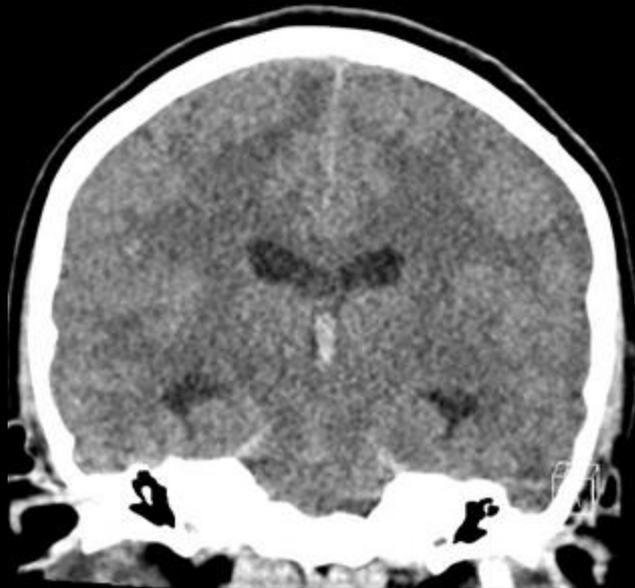
Working Projection Pre

6 month follow-up

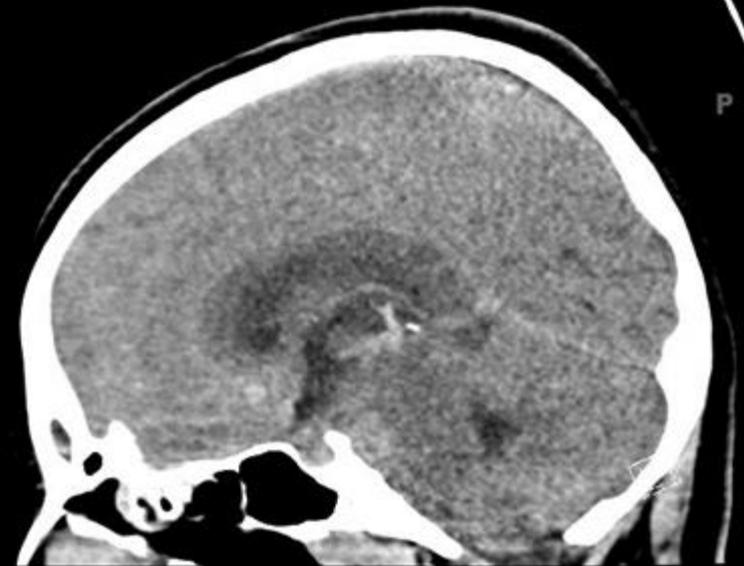
1 year follow-up



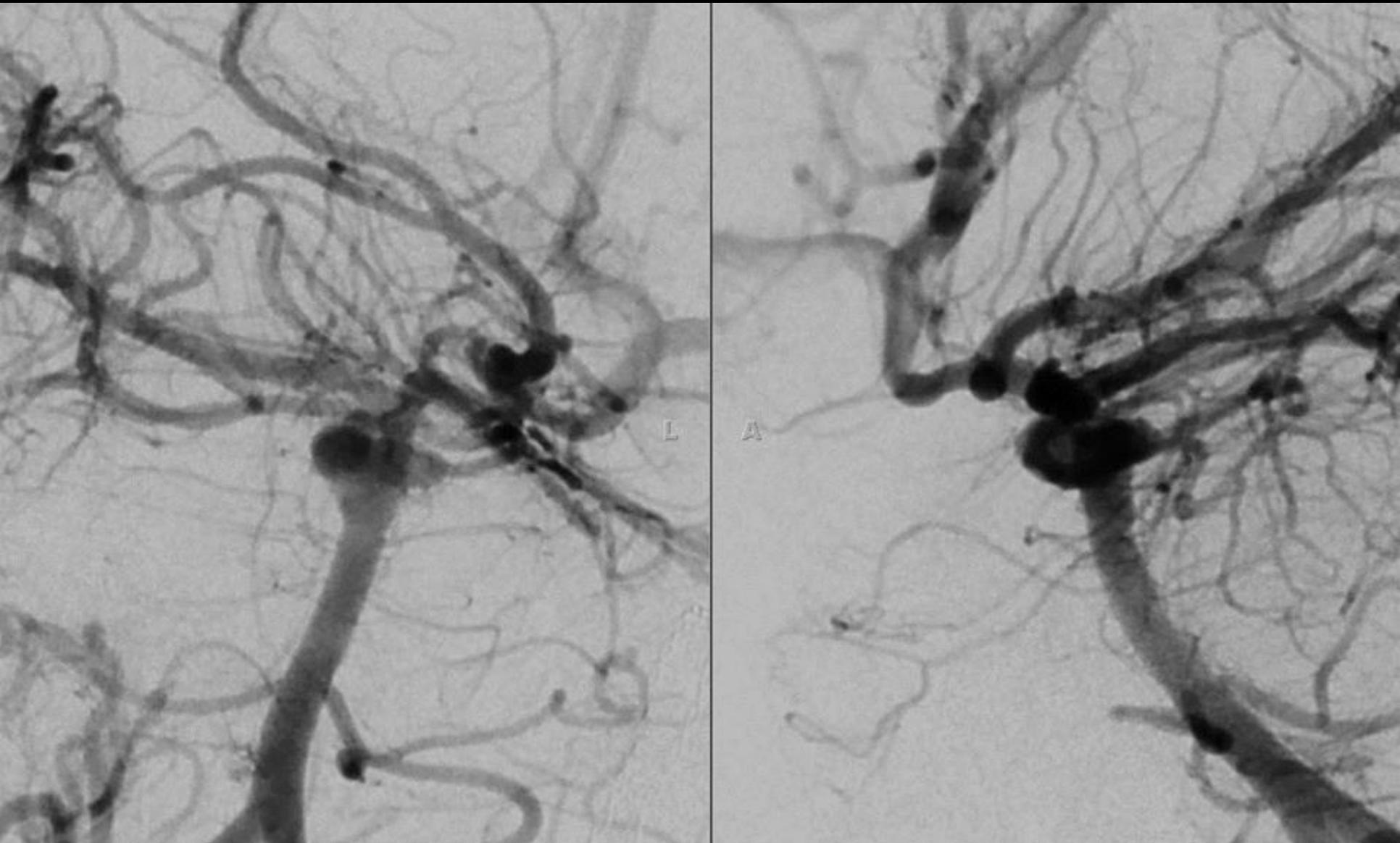
CT Head in 15y/o girl
12/26/14



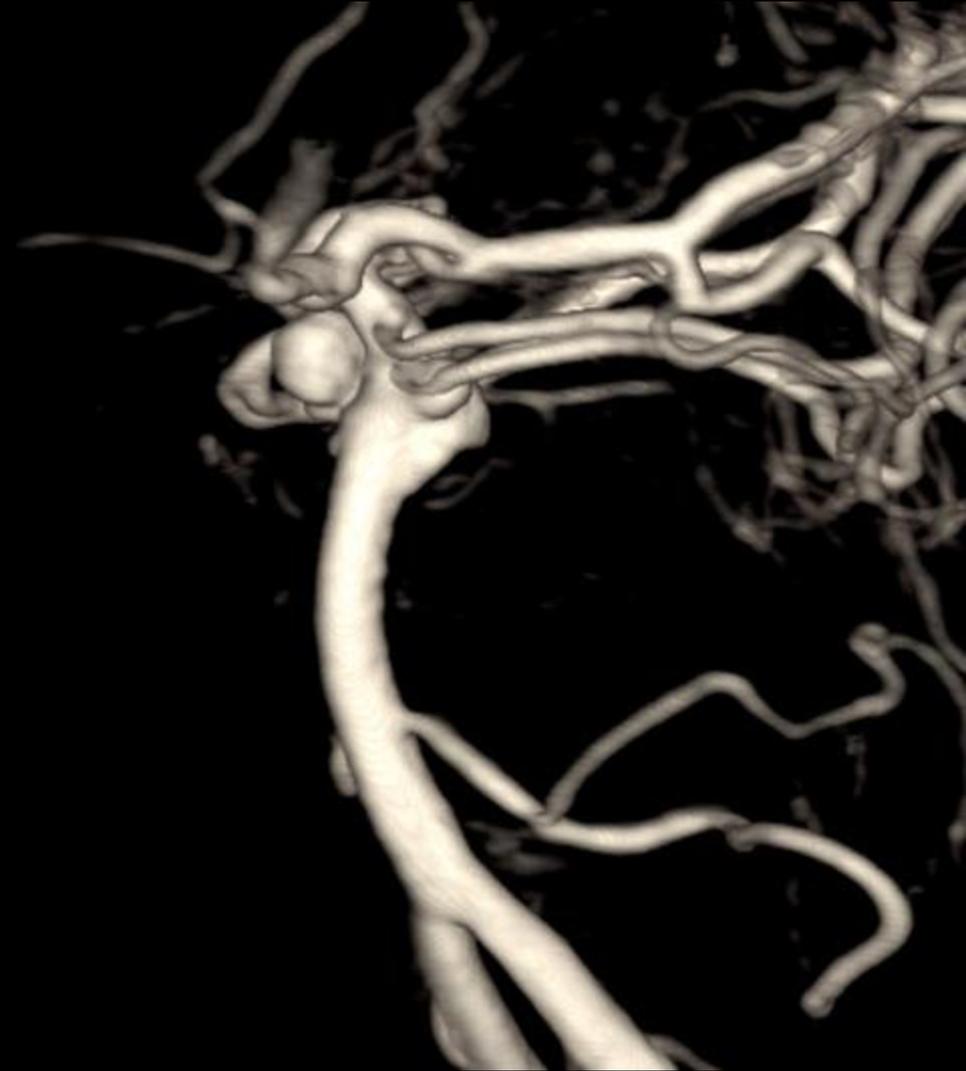
Diffuse basilar cistern
SAH with IVH and
mild hydrocephalus



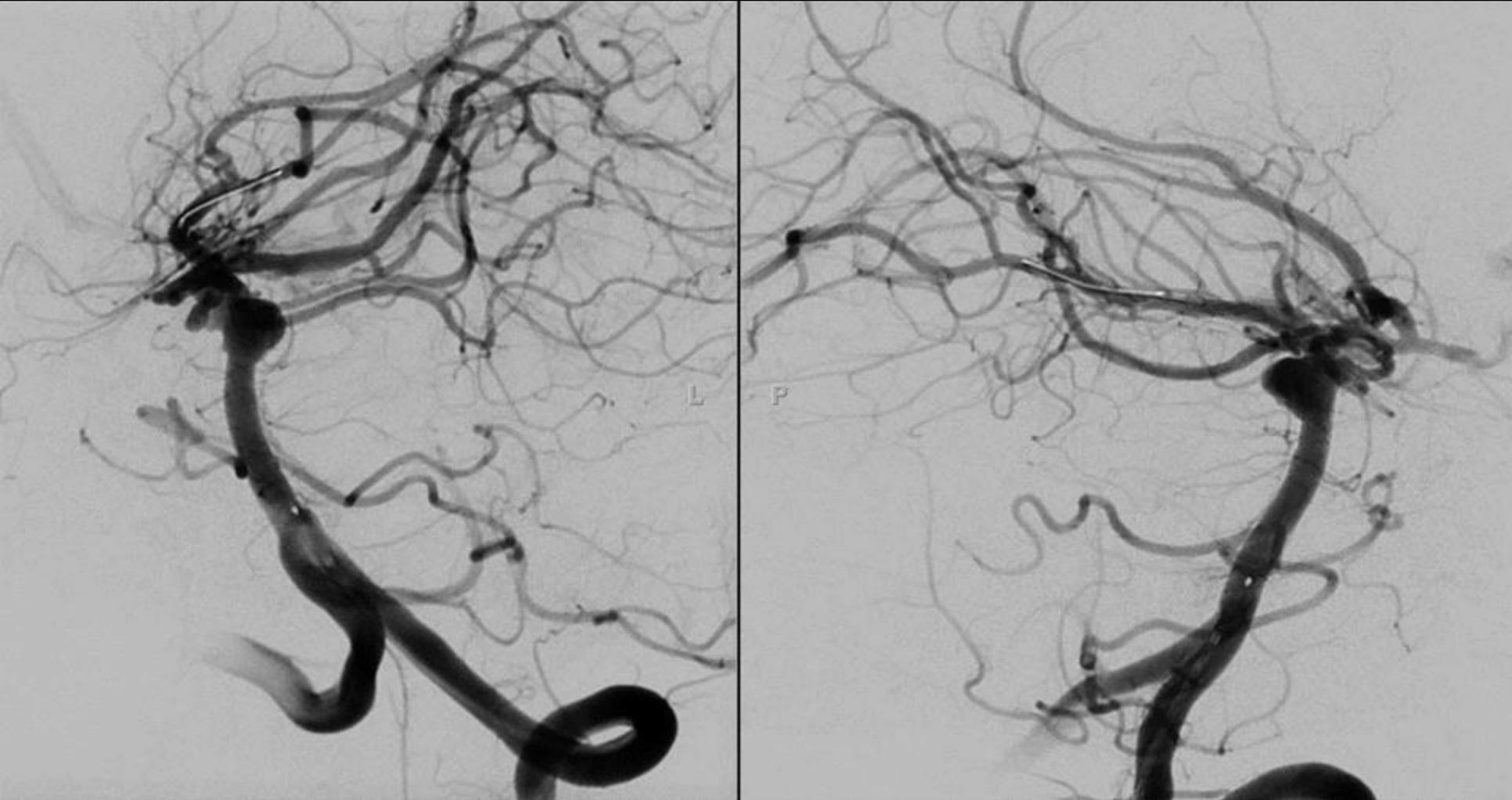
An EVD was placed
and an angio
performed



Atypical basilar artery aneurysm, likely dissecting. The aneurysm is just below the SCA origins with a duplicated left SCA.

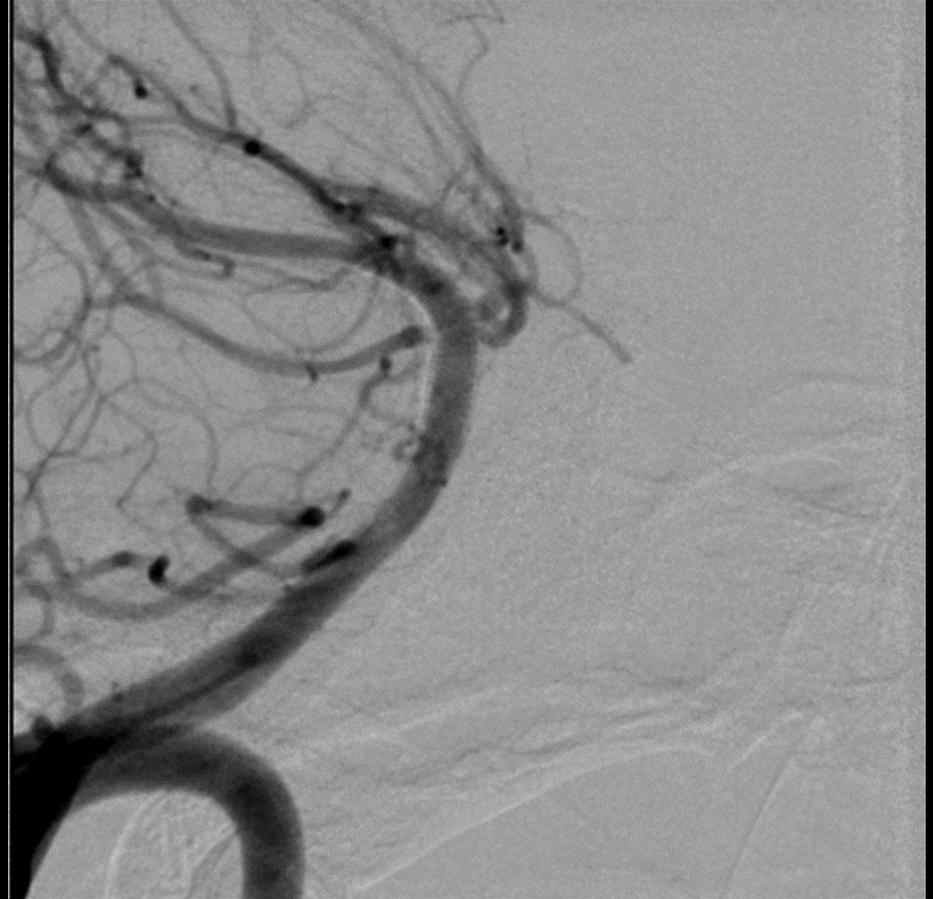


Atypical basilar artery aneurysm, likely dissecting. The aneurysm is just below the SCA origins with a duplicated left SCA.



▣ L ICA angiogram following PED placement

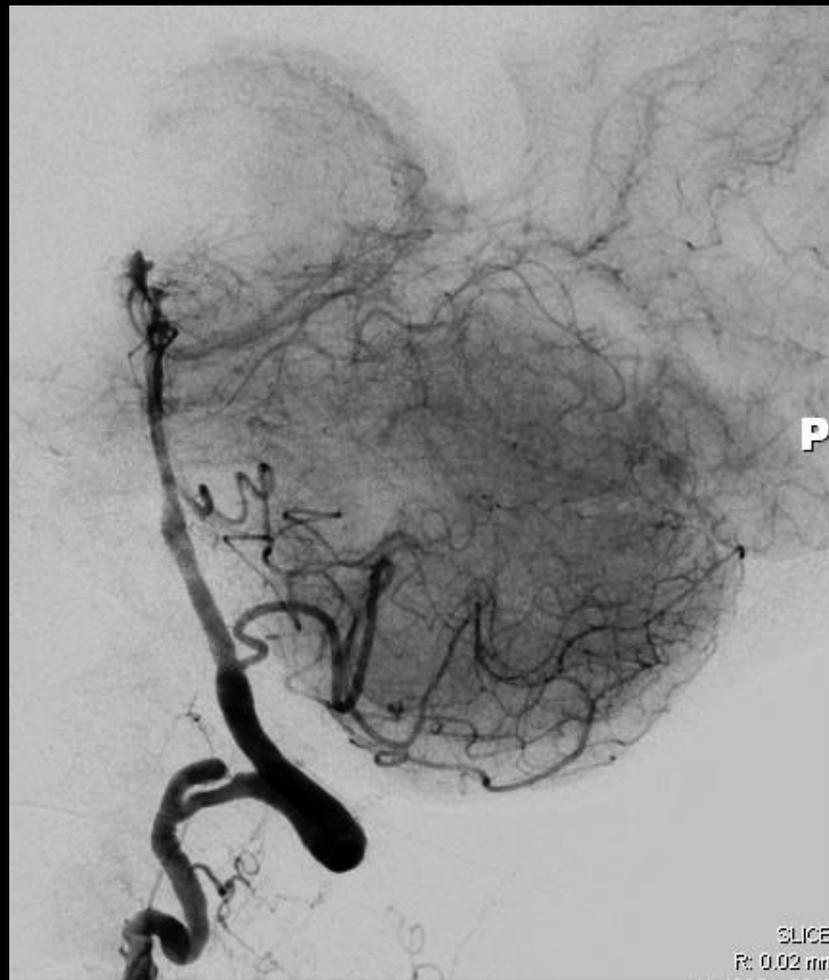
One Year



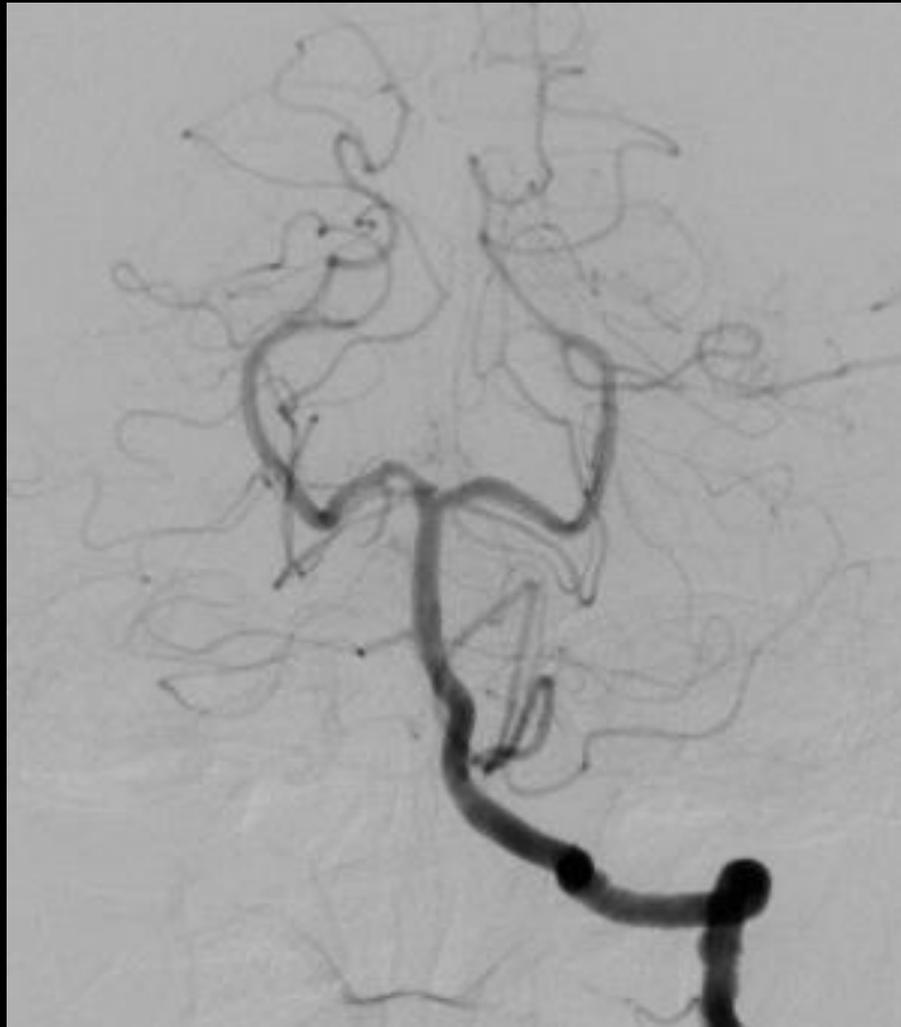
68 y/o lady with an incidental left P1 aneurysm



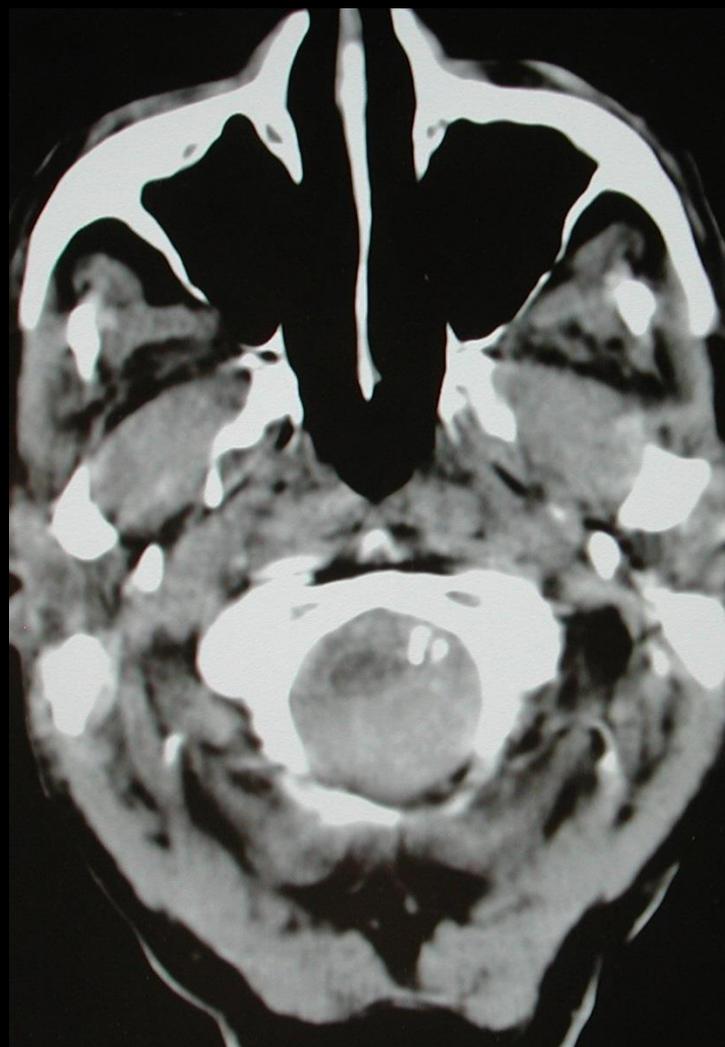
2.75 X 14 PED



Follow Up 2/20/2013



64 y/o man in 2008



Post coil in 2008



Pre PED in 2013



6 months



The crossroads of wisdom

