

*La richiesta di competenza
neurologica nel prossimo futuro*

Sesta edizione

Fortuna Resort, Chianciano Terme (Siena)

13-15 maggio 2022



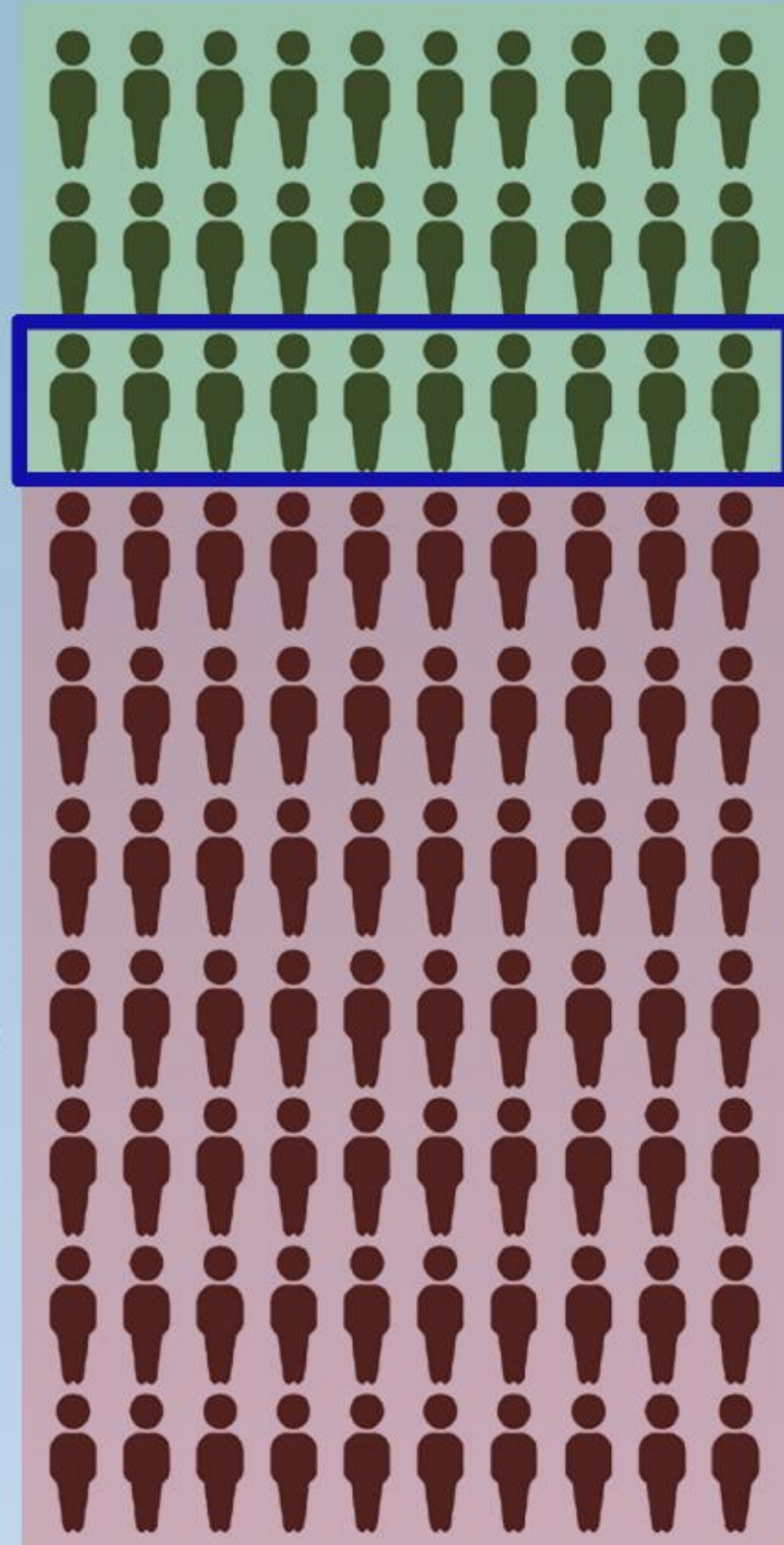
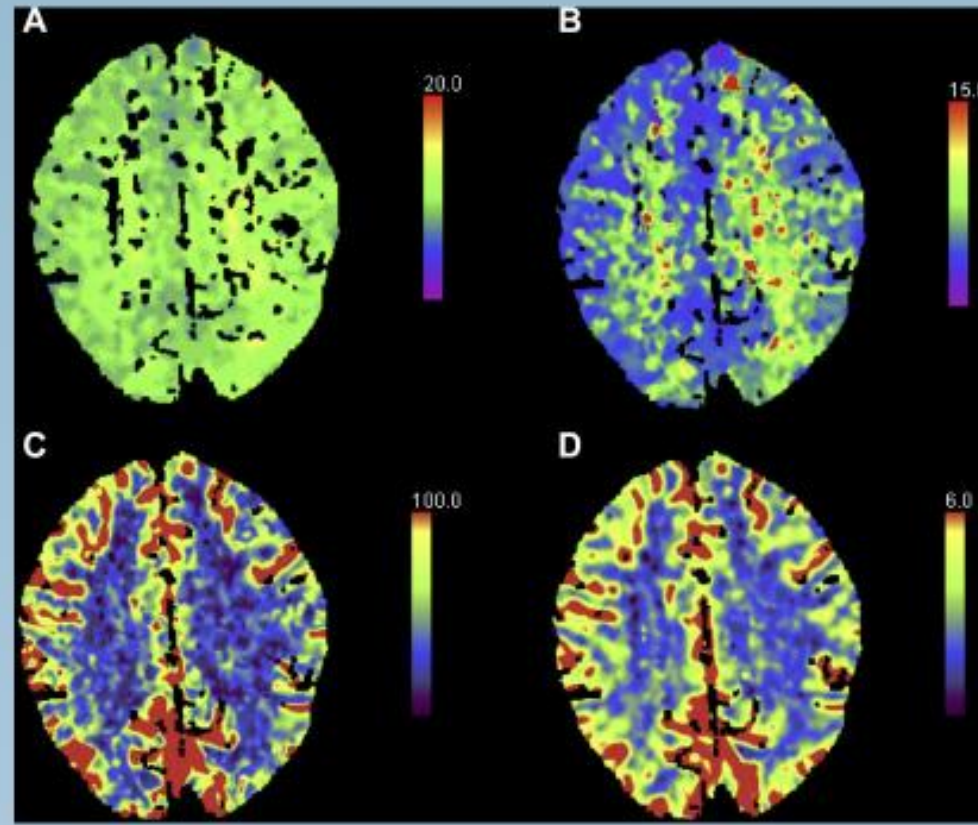
MIND THE VESSEL

Francesco Diana, MD, PhD student
Universities of Limoges and Salerno
A.O.U. San Giovanni di Dio e Ruggi d'Aragona



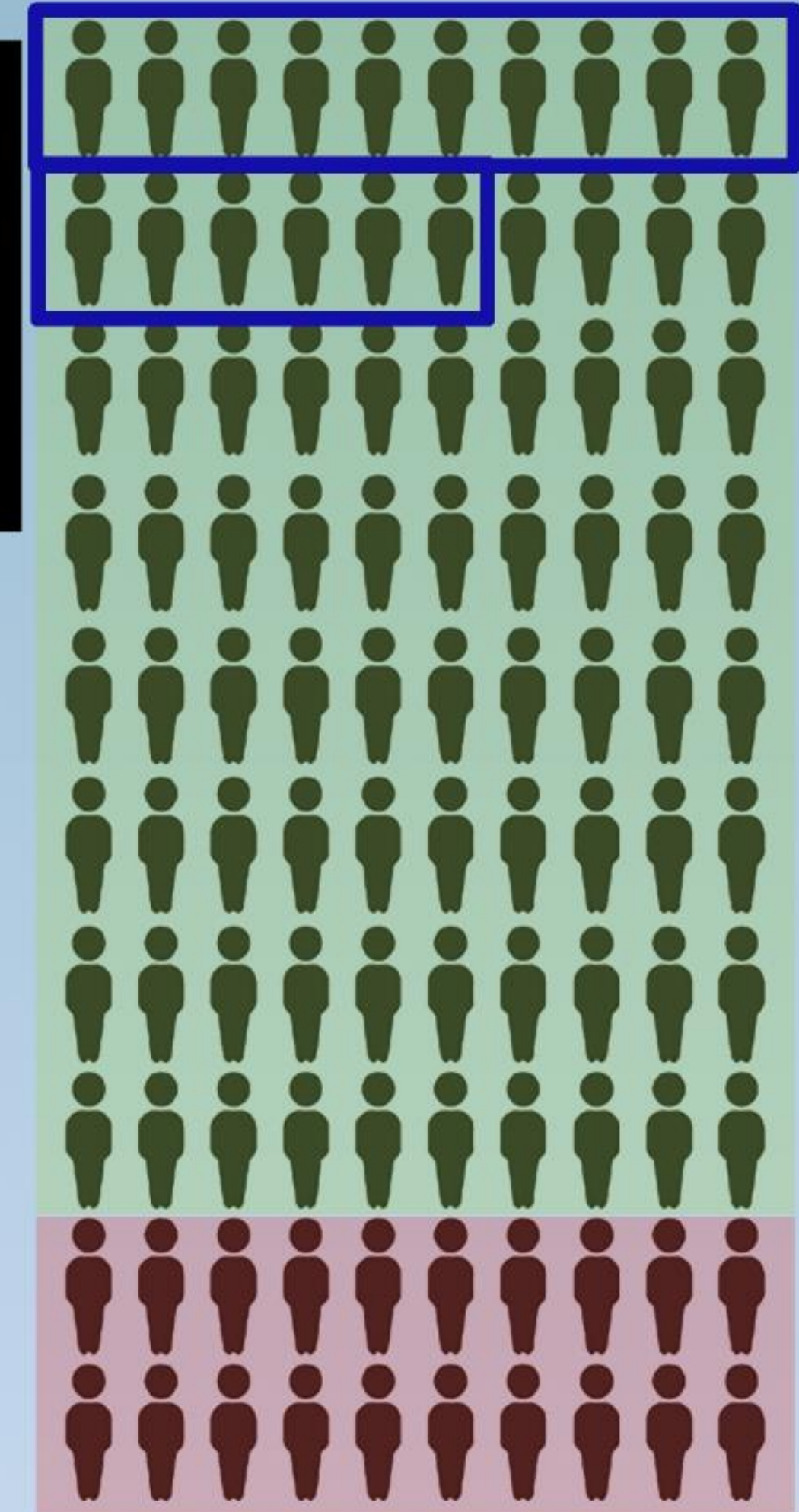
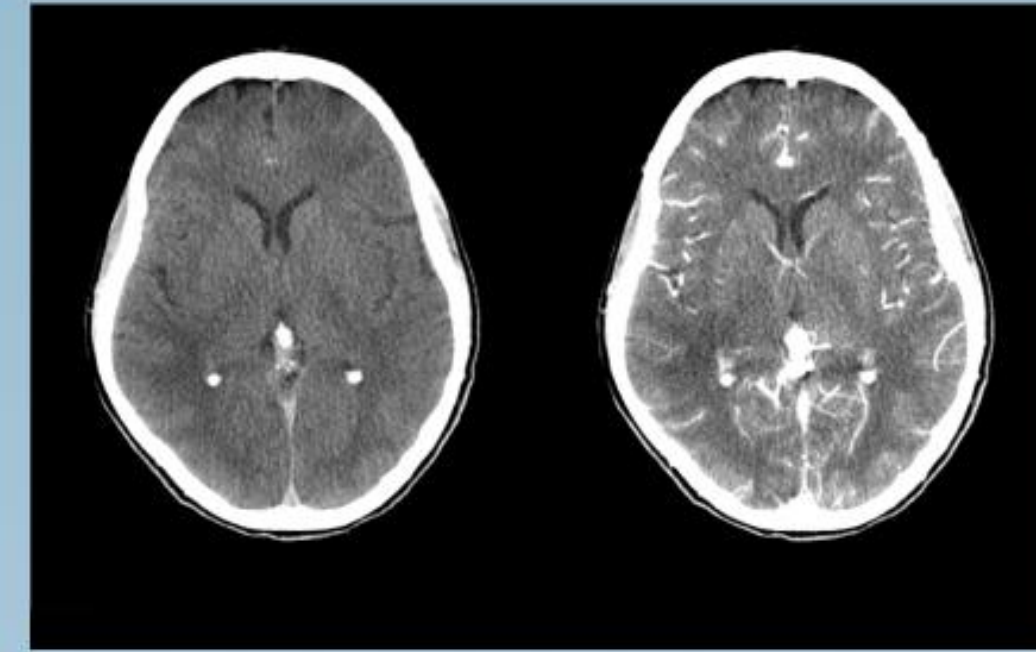
"Miglior" imaging = migliore outcome?

TC perfusionale



Pazienti trattati
NNT= 3
90 days mRs0-2=70%
Beneficio del
trattamento sull'intera
popolazione
10:100 pazienti

TC ed AngioTC



Pazienti trattati
NNT= 5
90 days mRs0-2=30%
Beneficio del
trattamento sull'intera
popolazione
16:100 pazienti

Research

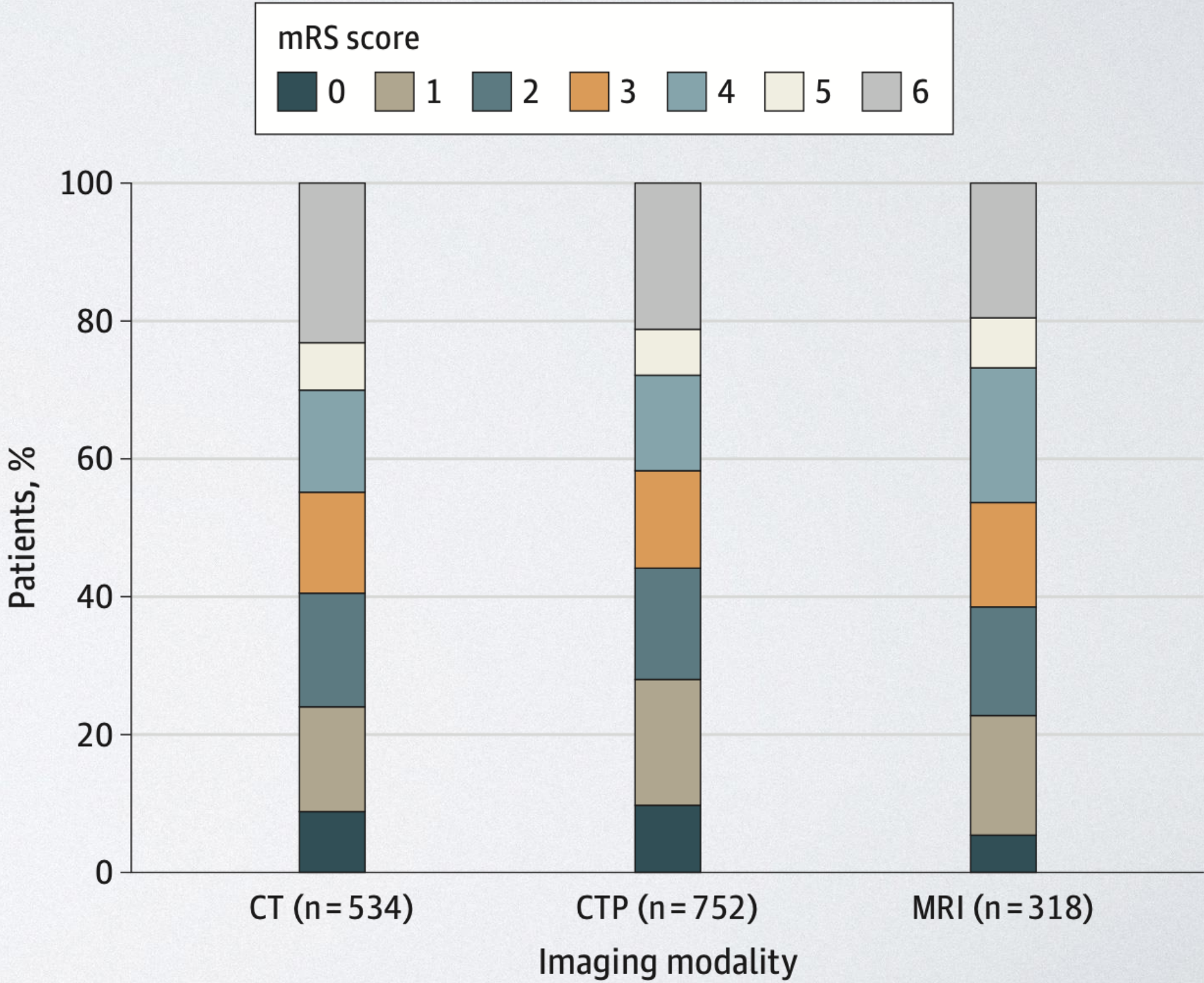
JAMA Neurology | Original Investigation

Noncontrast Computed Tomography vs Computed Tomography Perfusion or Magnetic Resonance Imaging Selection in Late Presentation of Stroke With Large-Vessel Occlusion

Thanh N. Nguyen, MD; Mohamad Abdalkader, MD; Simon Nagel, MD; Muhammad M. Qureshi, MPH; Marc Ribo, MD, PhD; Francois Caparros, MD; Diogo C. Haussen, MD; Mahmoud H. Mohammaden, MD, MSc; Sunil A. Sheth, MD; Santiago Ortega-Gutierrez, MD, MSc; James E. Siegler, MD; Syed Zaidi, MD; Marta Olive-Gadea, MD; Hilde Henon, MD, PhD; Markus A. Möhlenbruch, MD; Alicia C. Castonguay, PhD; Stefania Nannoni, MD; Johannes Kaesmacher, MD; Ajit S. Puri, MD; Fatih Seker, MD; Mudassir Farooqui, MD, MPH; Sergio Salazar-Marioni, MD; Anna L. Kuhn, MD; Artem Kaliaev, MD; Behzad Farzin, MD; William Boisseau, MD; Hesham E. Masoud, MD; Carlos Ynigo Lopez, MD; Ameena Rana, MD; Samer Abdul Kareem, MD; Anvitha Sathya; Piers Klein; Mohammad W. Kassem, MD, MBA; Peter A. Ringleb, MD; Charlotte Cordonnier, MD, PhD; Jan Gralla, MD; Urs Fischer, MD, MSc; Patrik Michel, MD; Tudor G. Jovin, MD; Jean Raymond, MD; Osama O. Zaidat, MD, MS; Raul G. Nogueira, MD

CONCLUSIONS AND RELEVANCE In patients undergoing proximal anterior circulation mechanical thrombectomy in the extended time window, there were no significant differences in the clinical outcomes of patients selected with noncontrast CT compared with those selected with CTP or MRI. These findings have the potential to widen the indication for treating patients in the extended window using a simpler and more widespread noncontrast CT-only paradigm.

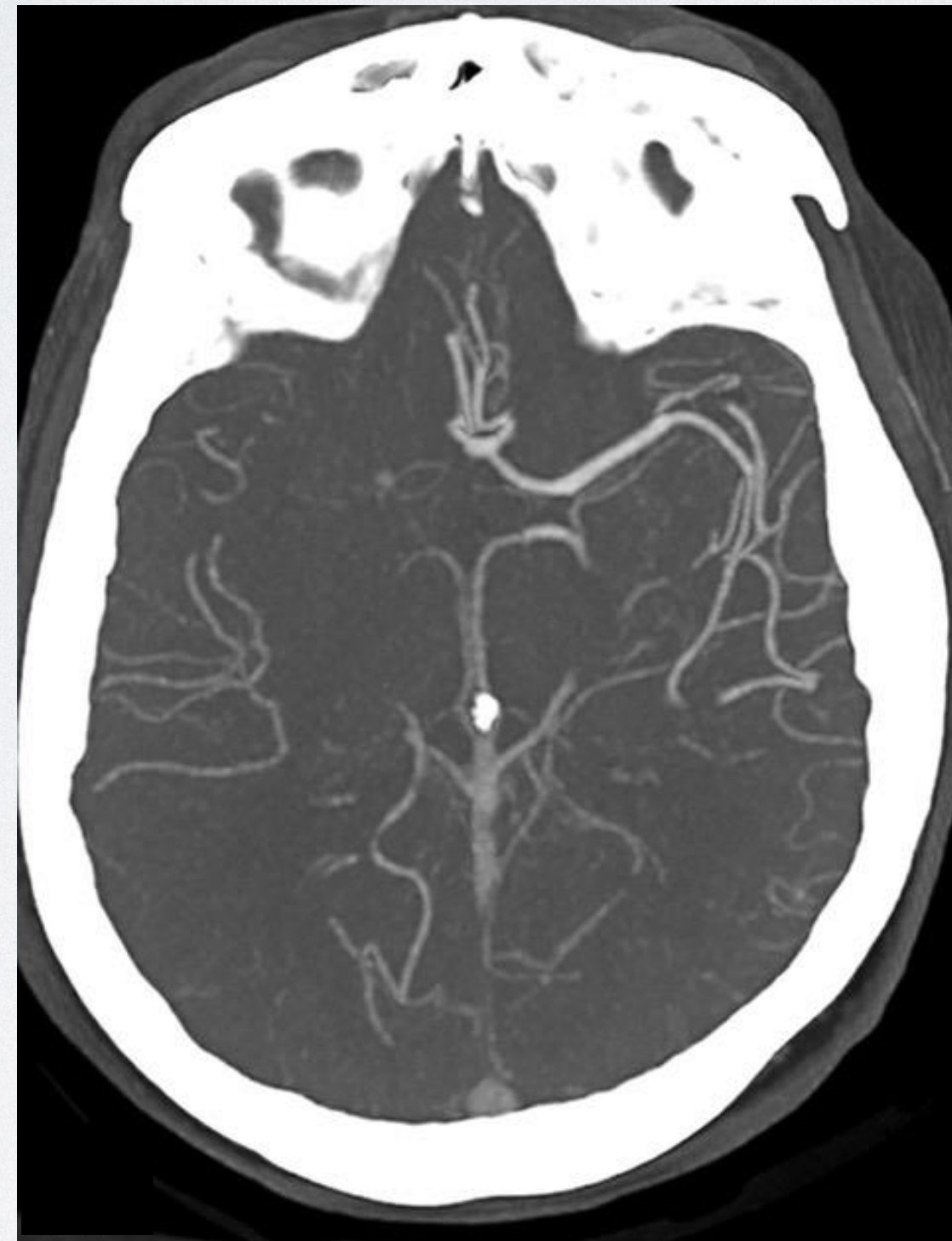
Figure 2. Distribution of 90-Day Modified Rankin Scale Score (mRS) in Patients Presenting in the Window 6 to 24 Hours After Time Last Seen Well With Internal Carotid Artery and Middle Cerebral Artery M1/M2 Occlusions, by Imaging Modality



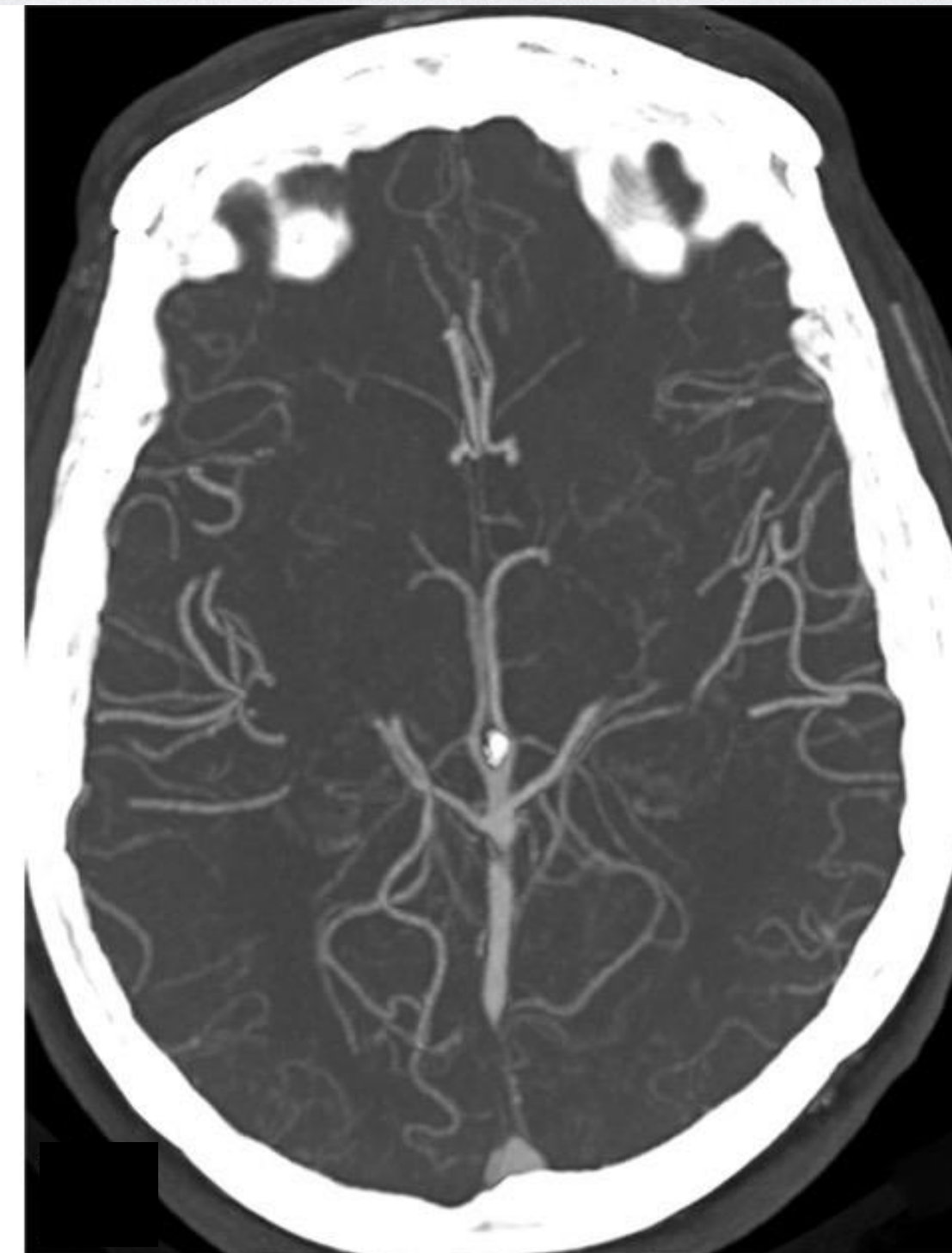
protocol



1st phase



2nd phase

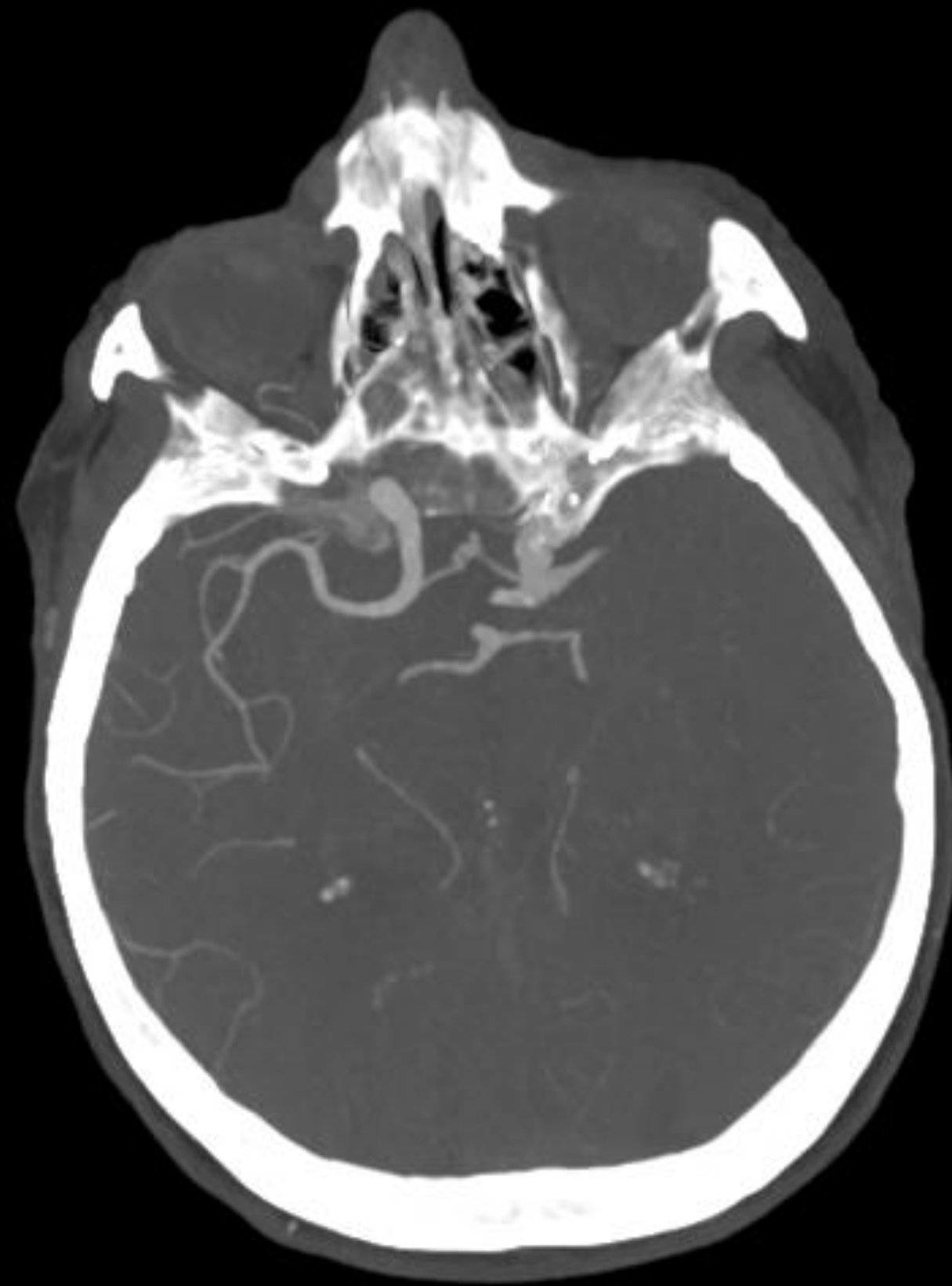


3rd phase

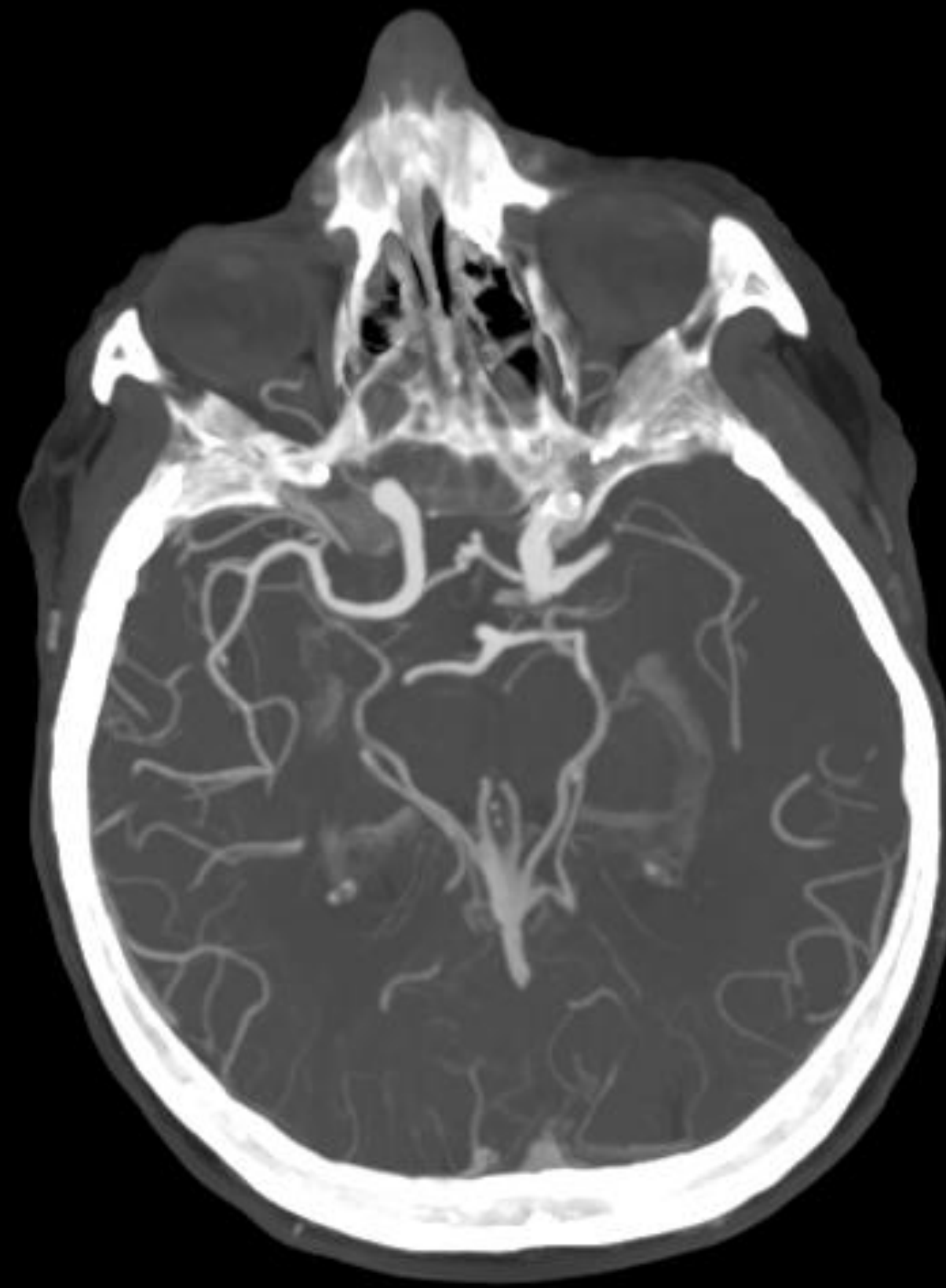


5	no filling delay, normal pial vessels in the affected hemisphere
4	filling delay of one phase with complete filling of distal vessels
3	filling delay of one phase with a significantly reduced number of vessels
2	filling delay of two phases with a significantly reduced number of vessels
1	few vessels in any phase
0	no vessels in any phase

1st phase



2nd phase

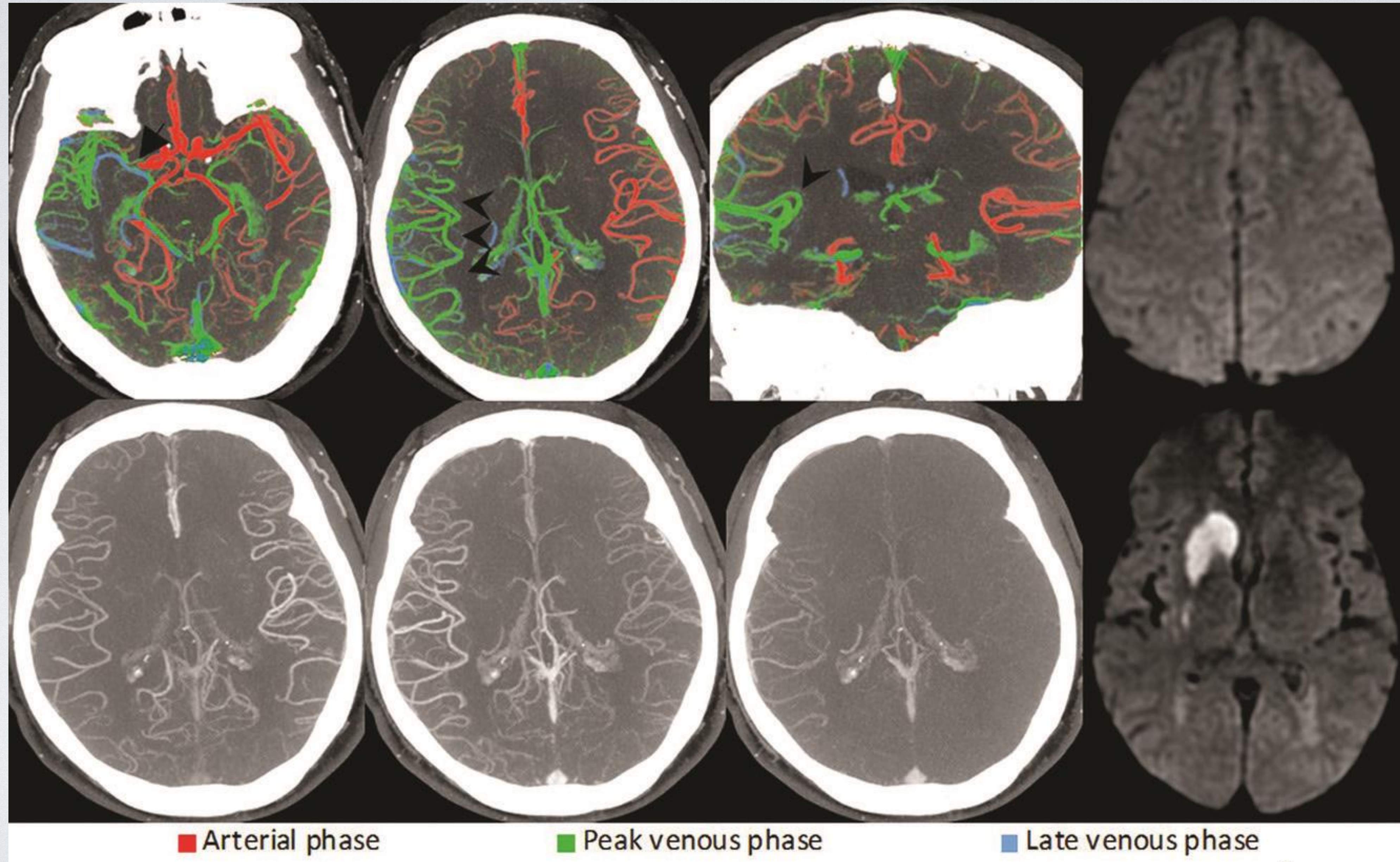


3rd phase

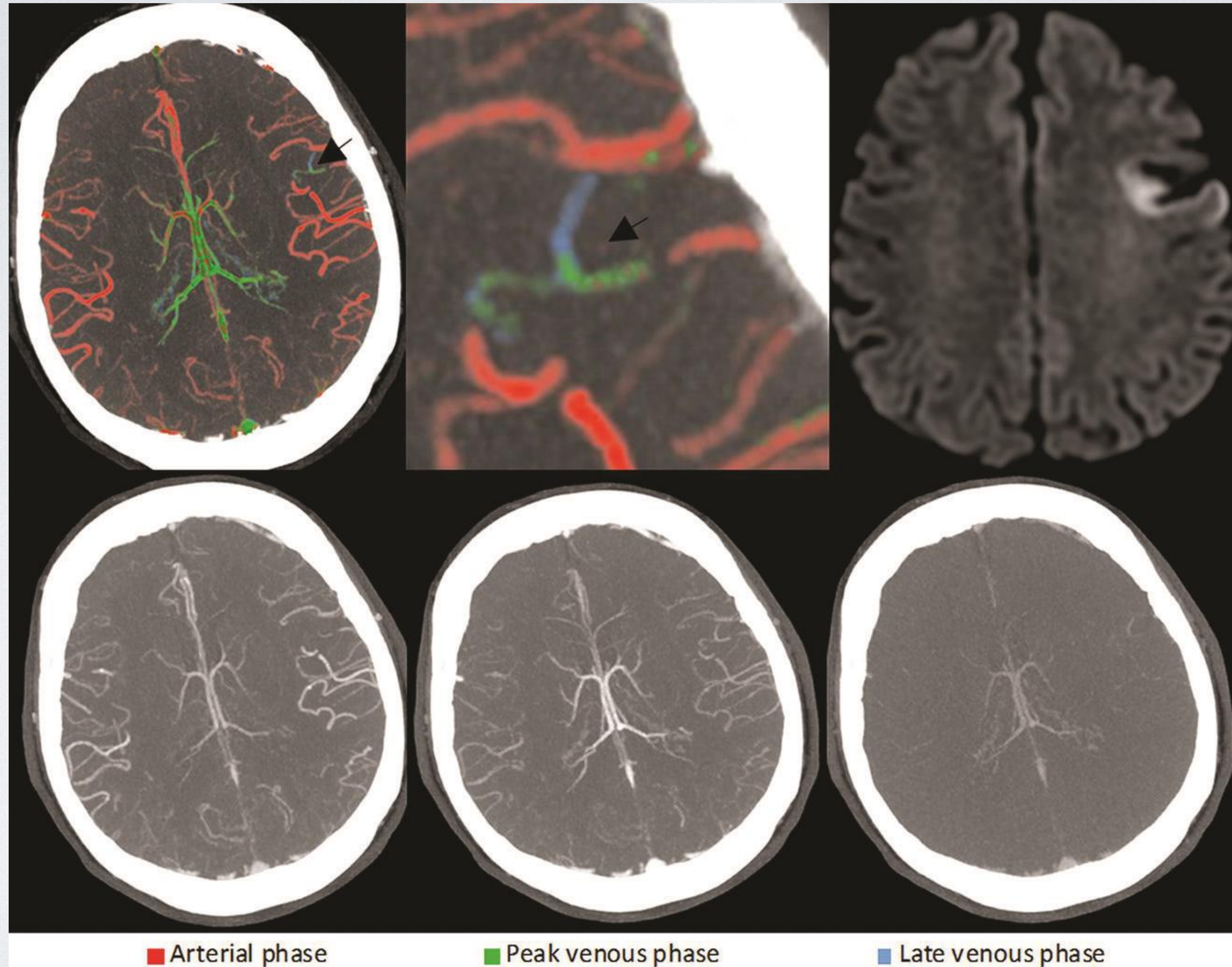


mCTA collateral score of this patient?

HOW TO STUDY? CT ANGIOGRAPHY



HOW TO STUDY? CT ANGIOGRAPHY



protocol



Images acquired:

200-500 images in 10-20 sec

FOV:

48 cm

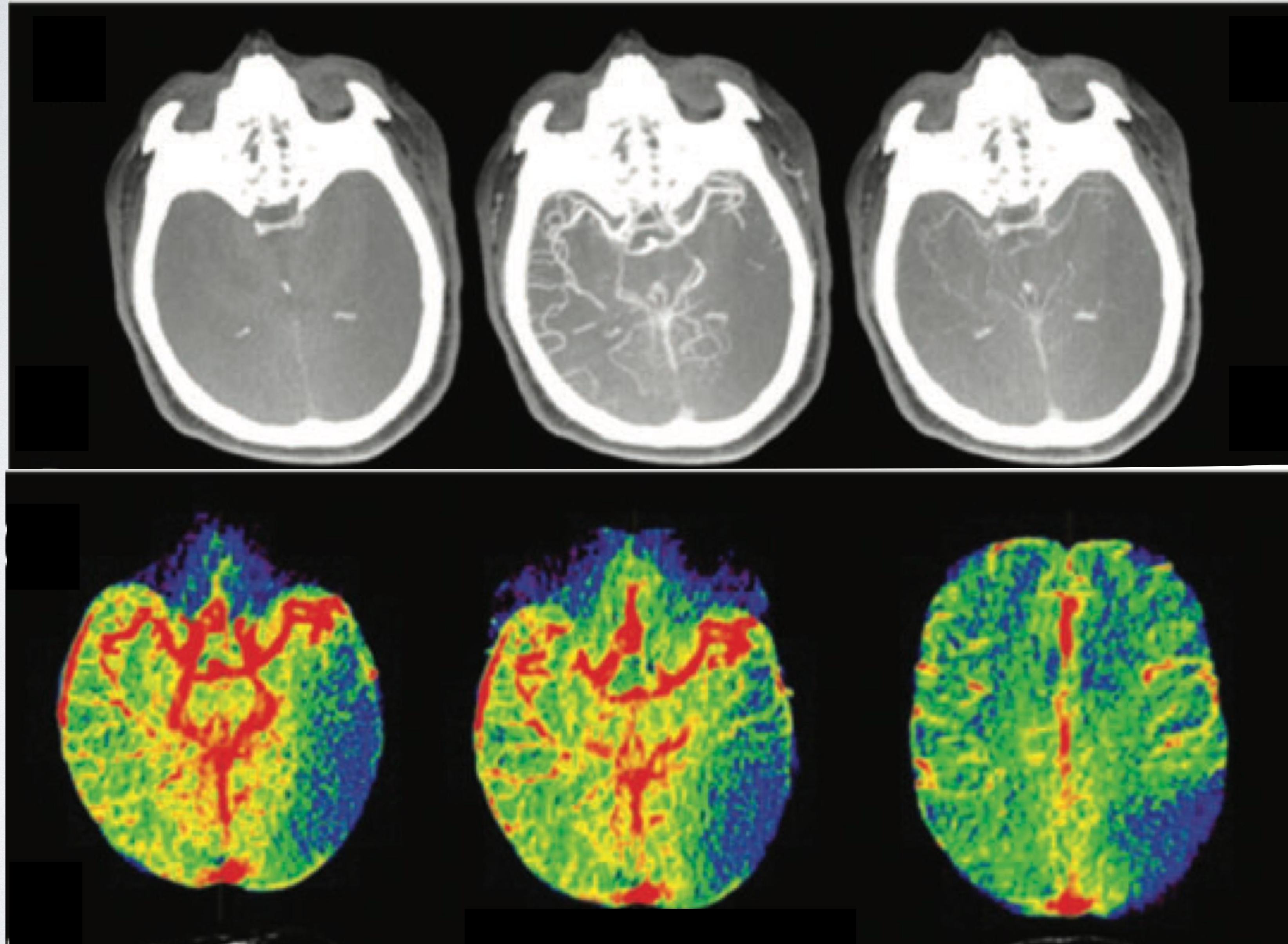
MOC injection:

IV with standard acquisition delay

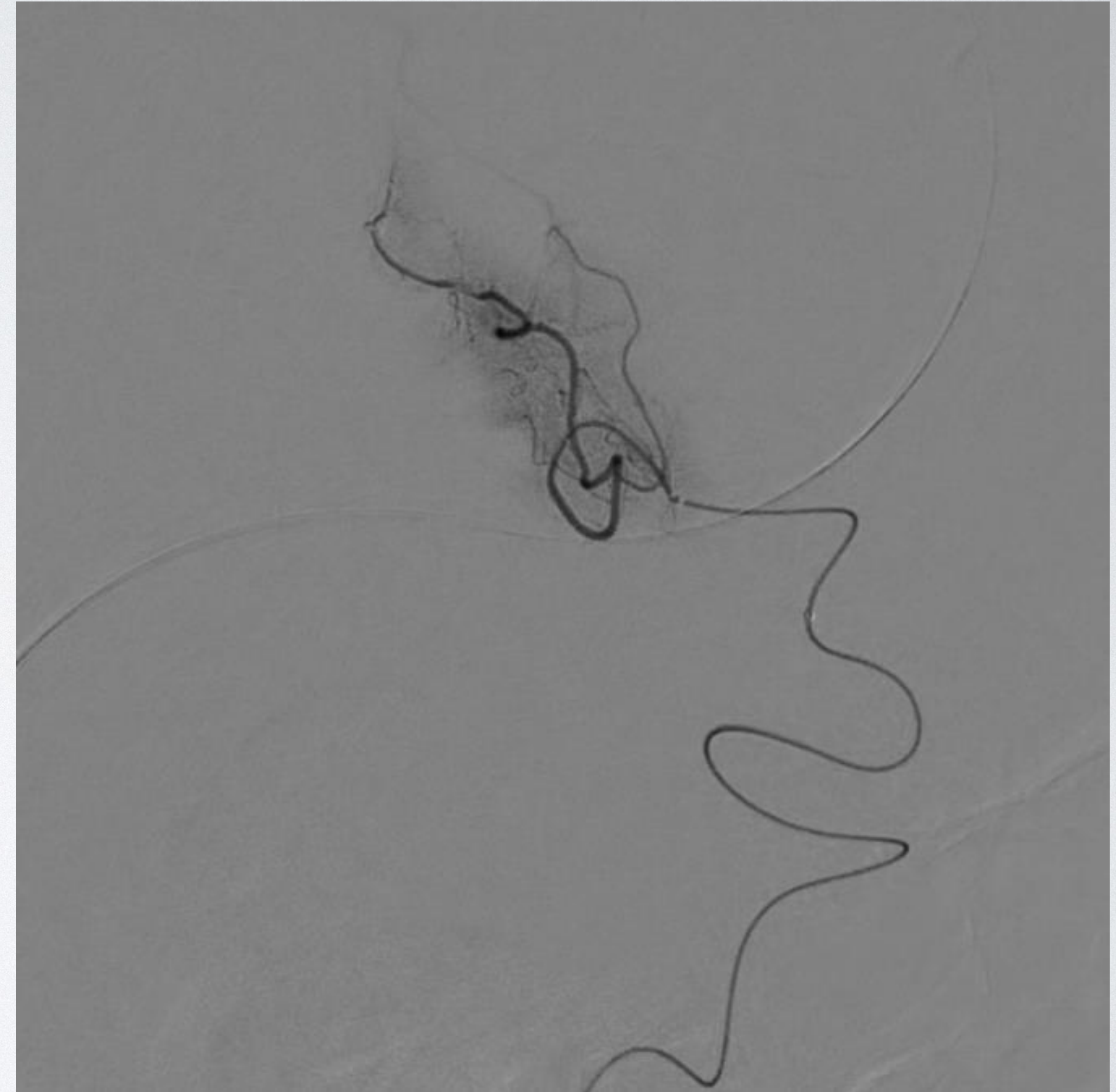
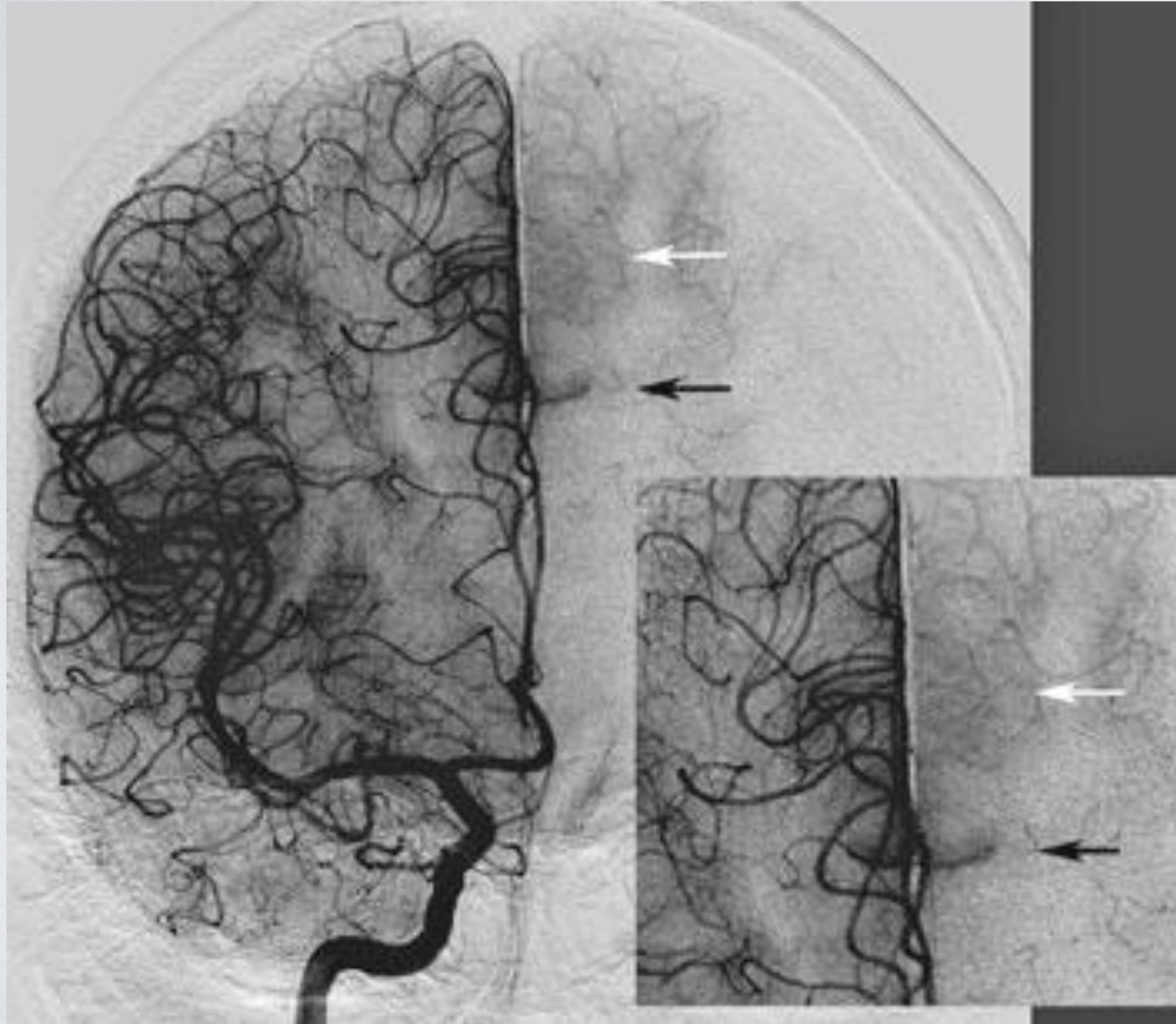
Images details:

0.5 mm voxel size

HOW TO STUDY? FLAT PANEL-multiphase CTA



HOW TO STUDY? 2D ANGIOGRAPHY



protocol



Images acquired:

≈130 for the 3D DSA in 4 sec

≈500 for the CBCT-A in 20 sec

FOV:

15-48 cm for the 3D DSA

≈22 cm for the CBCT-A

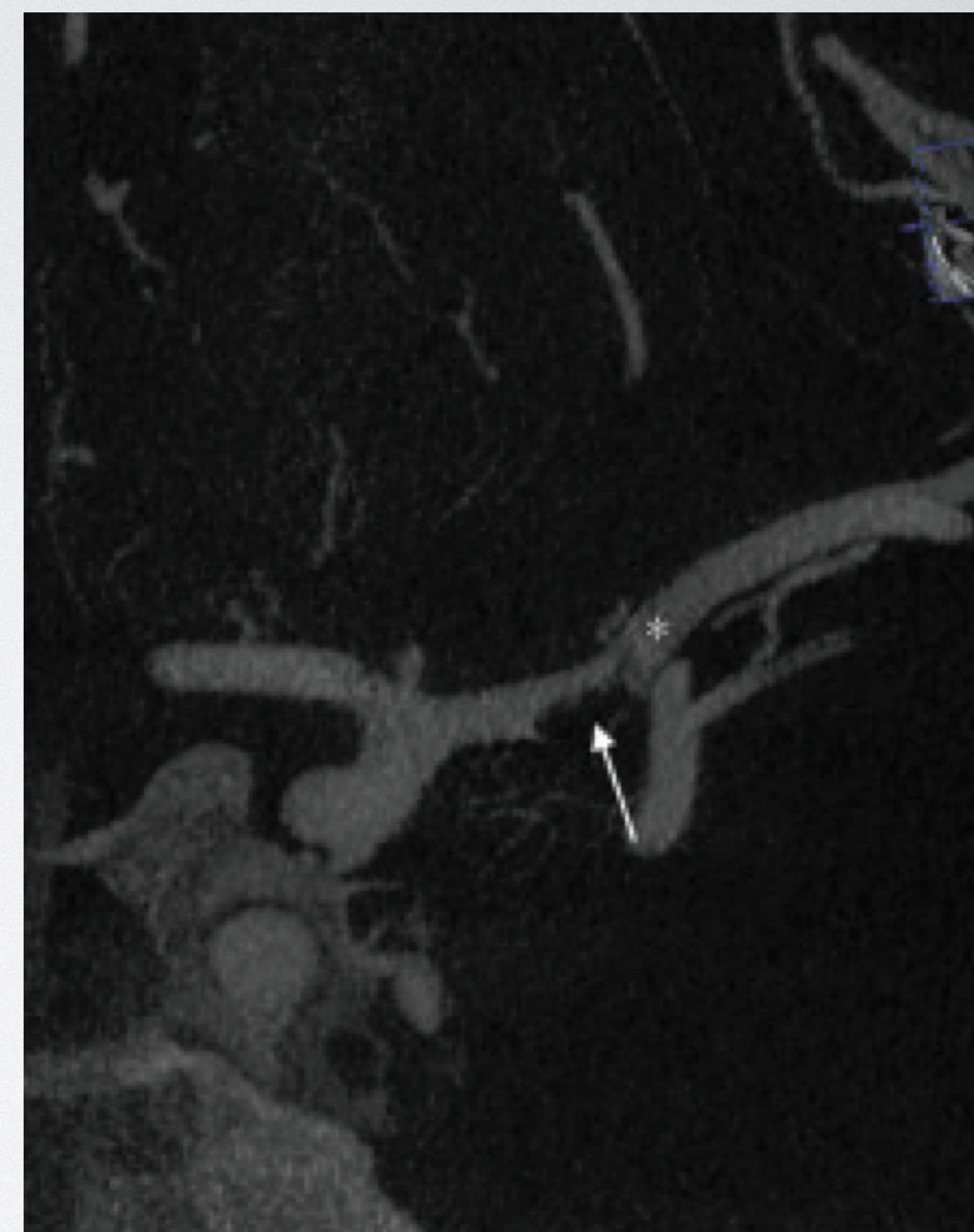
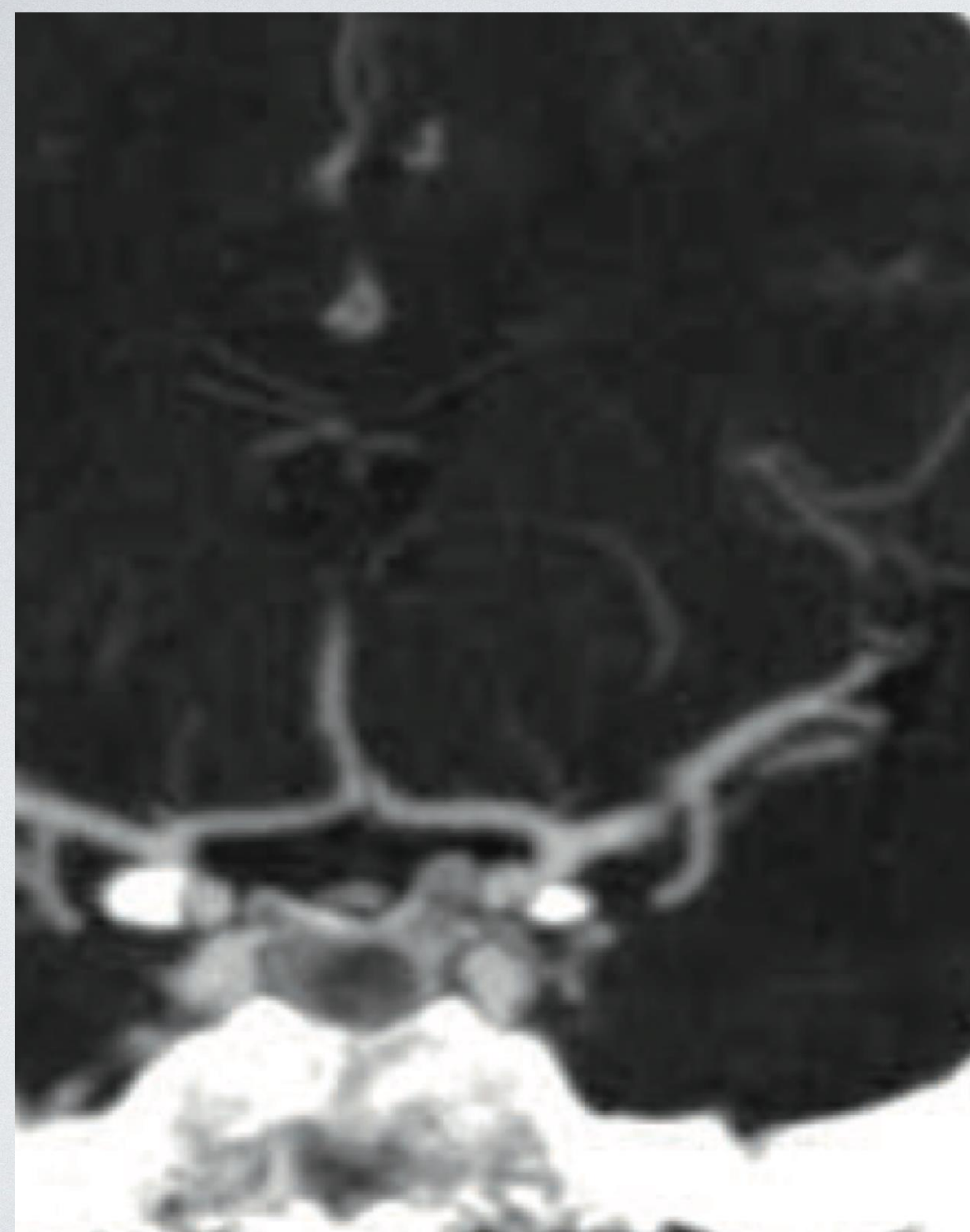
MOC injection:

IA during the whole acquisition

Images details:

0.5 mm voxel size for the 3D DSA

0.02 mm voxel size for the CBCT-A



INFORMATIONS NEEDED?



Collateral status



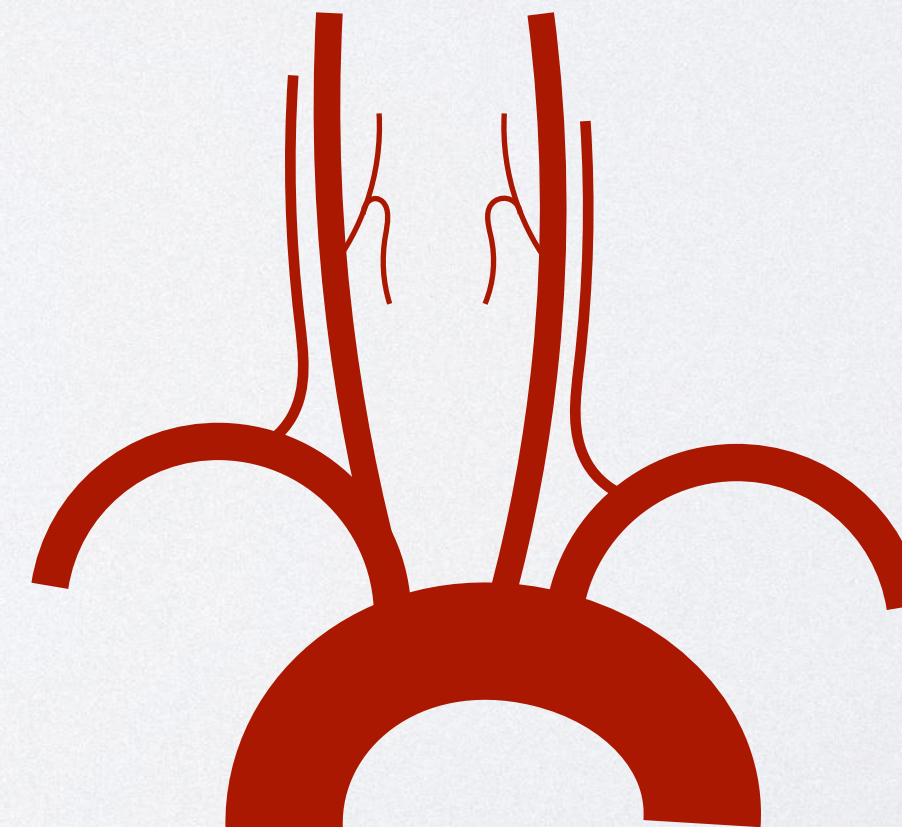
Tissue perfusion



Diagnostic informations

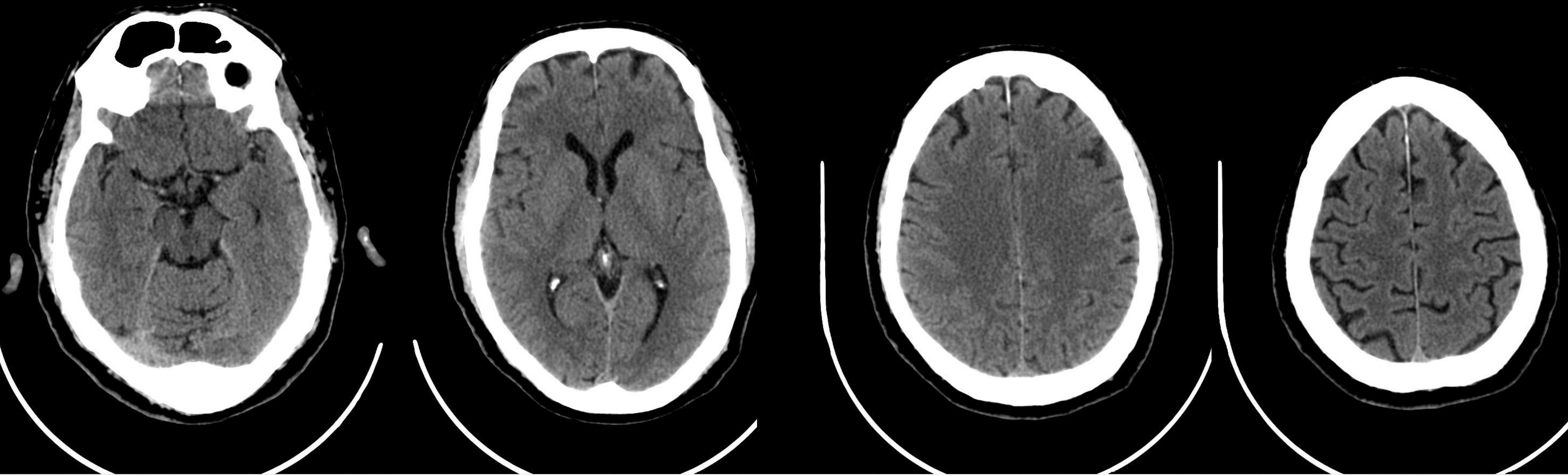


Technical informations

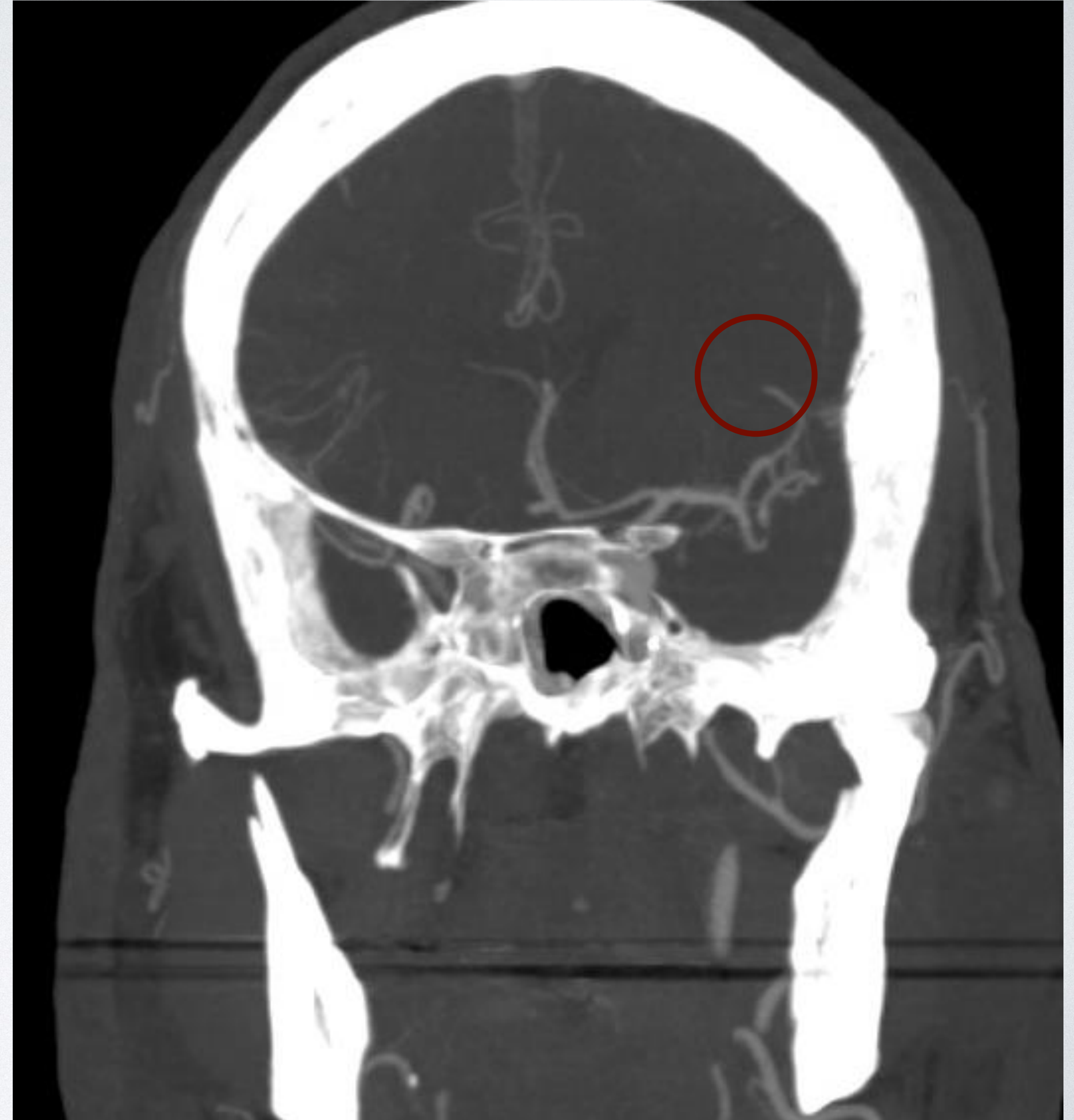


- Uomo, 69 anni
- APR: non patologie note. Non assume alcuna terapia farmacologica.
- Giunge in PS per afasia al risveglio (ore 6 circa).
- Visto l'ultima volta in salute la sera prima, verso le 23:00 dalla moglie.

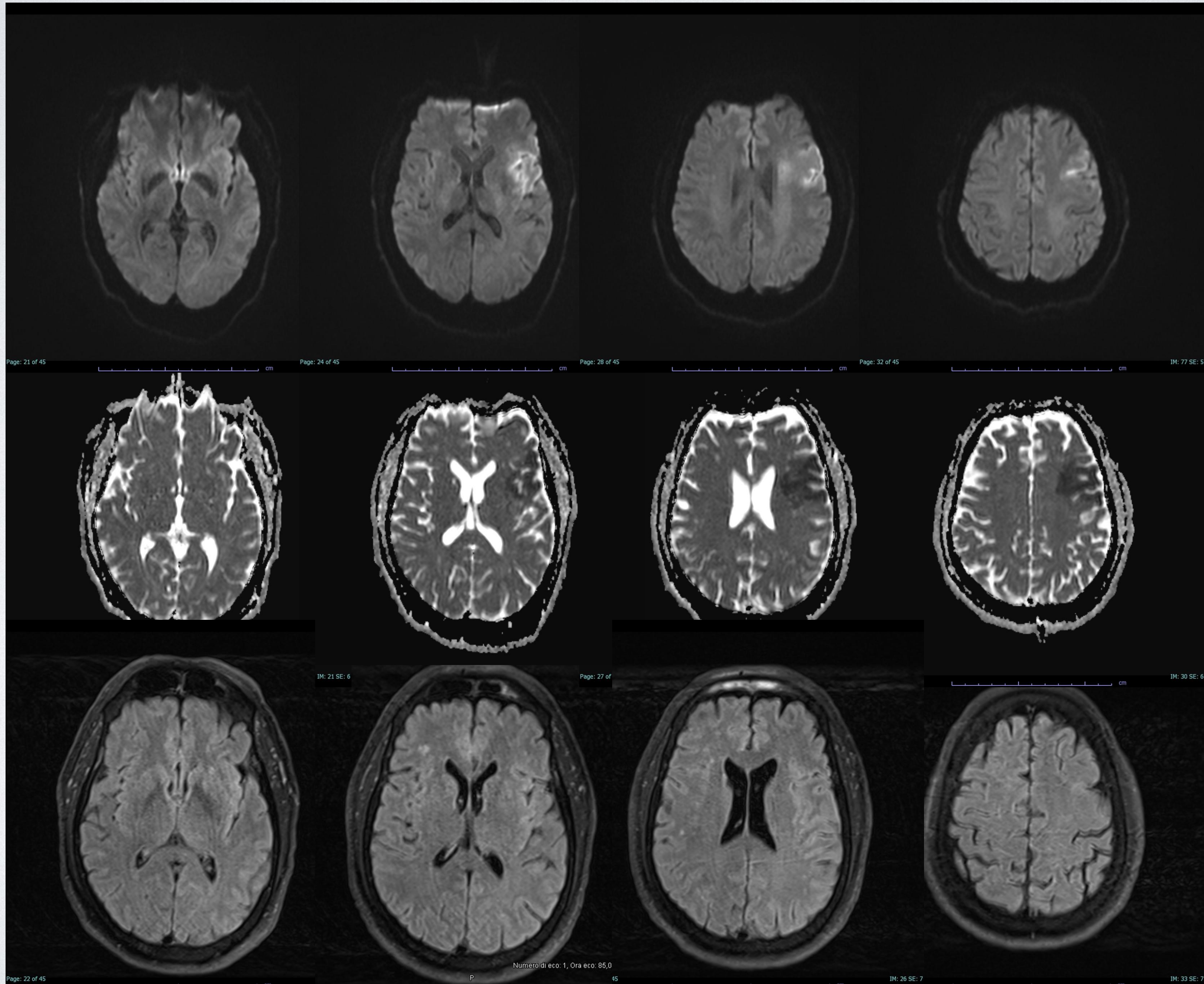
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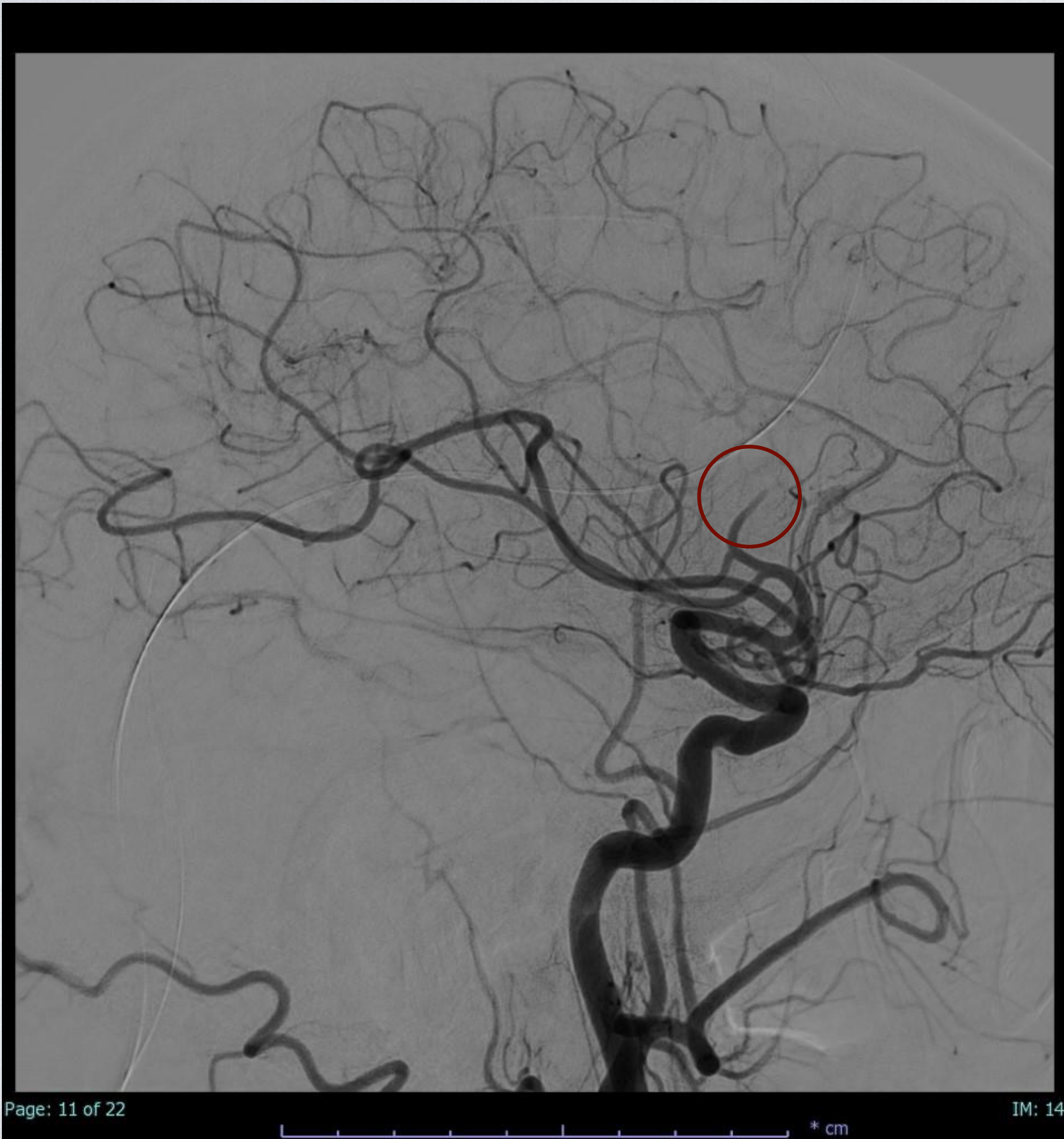


CASE 1

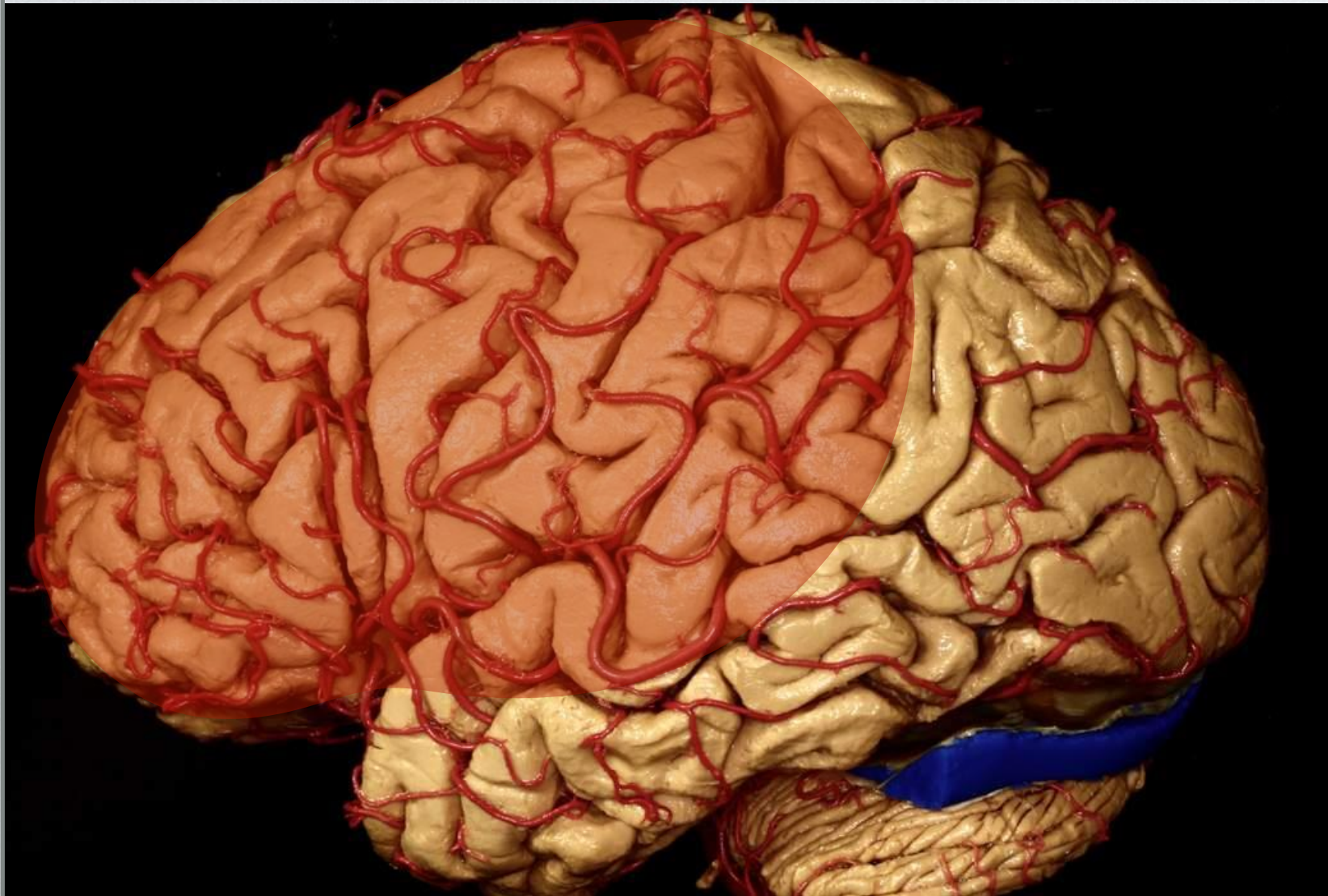


CASE 1



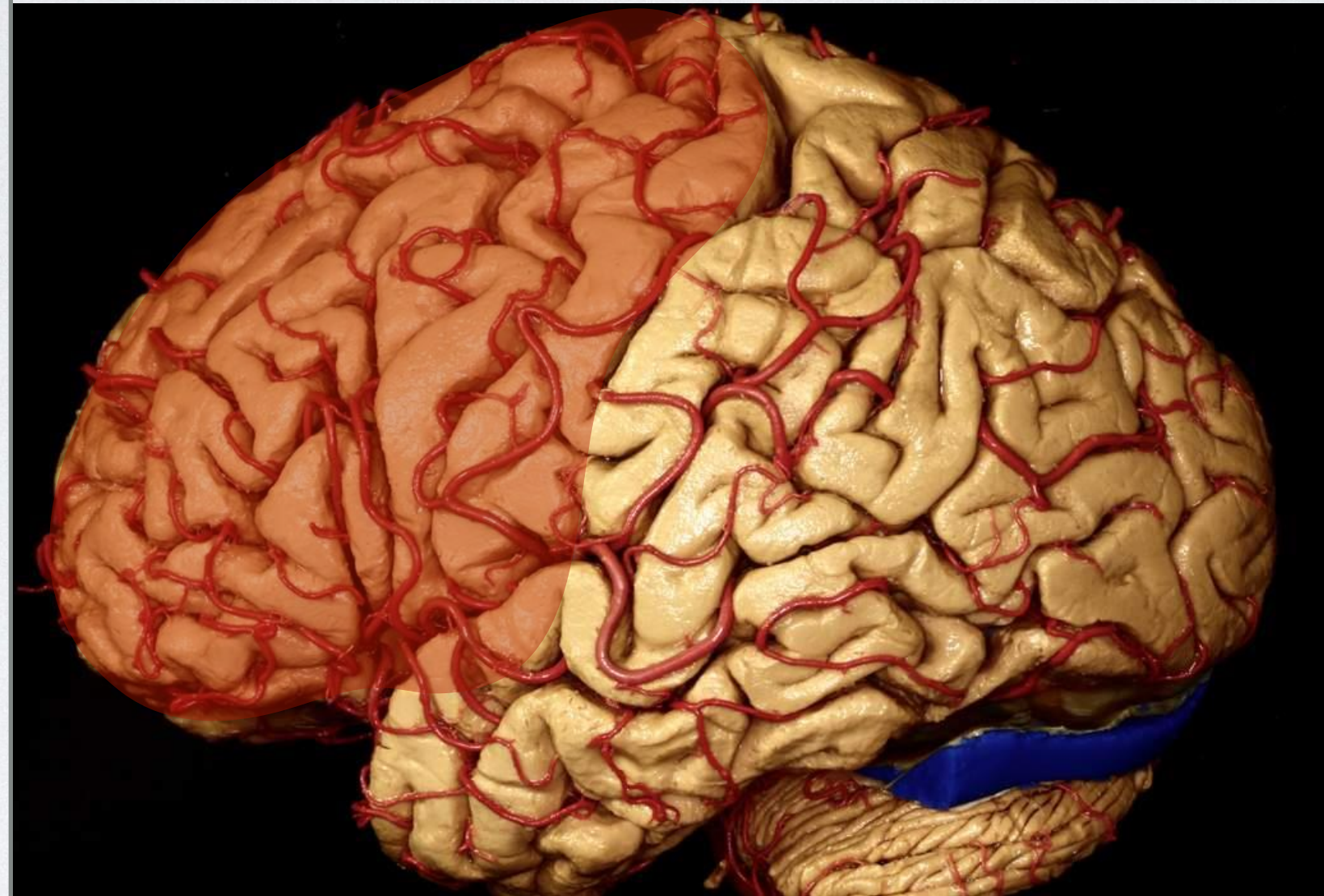


Dominant



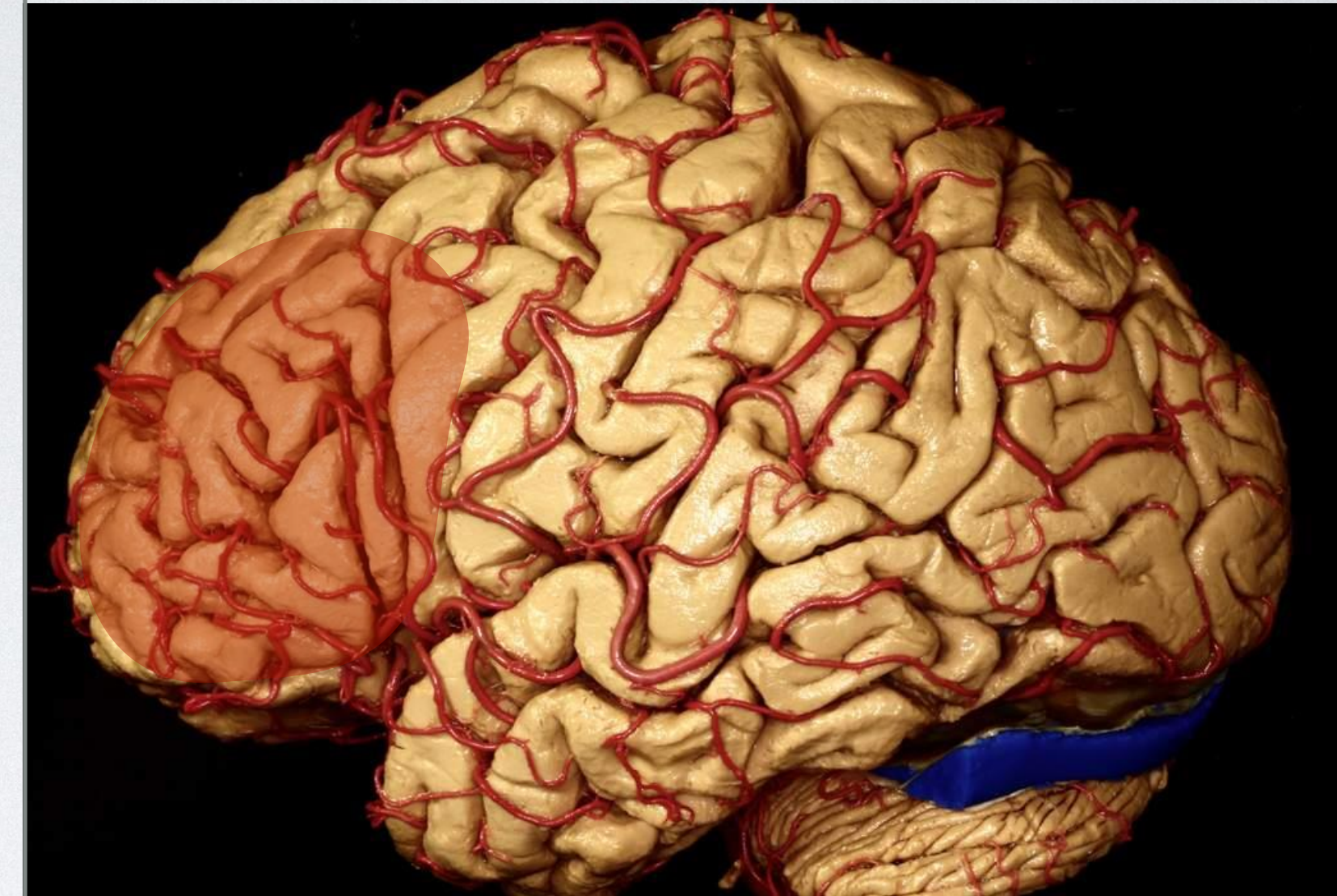
- >50% of MCA territory
- M1-like
- Higher NIHSS
- Higher risk of malignant ischemia

Co-dominant

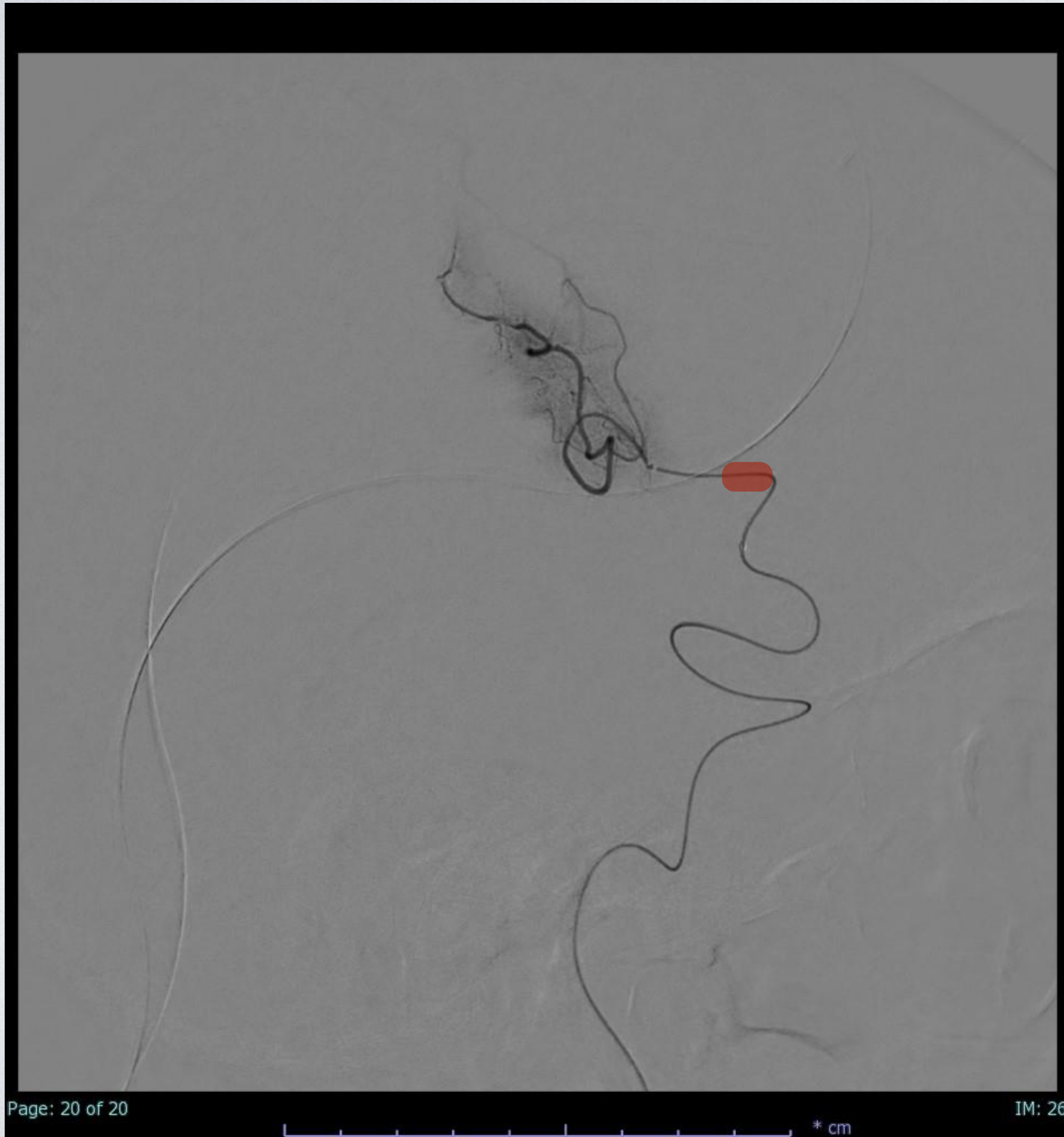


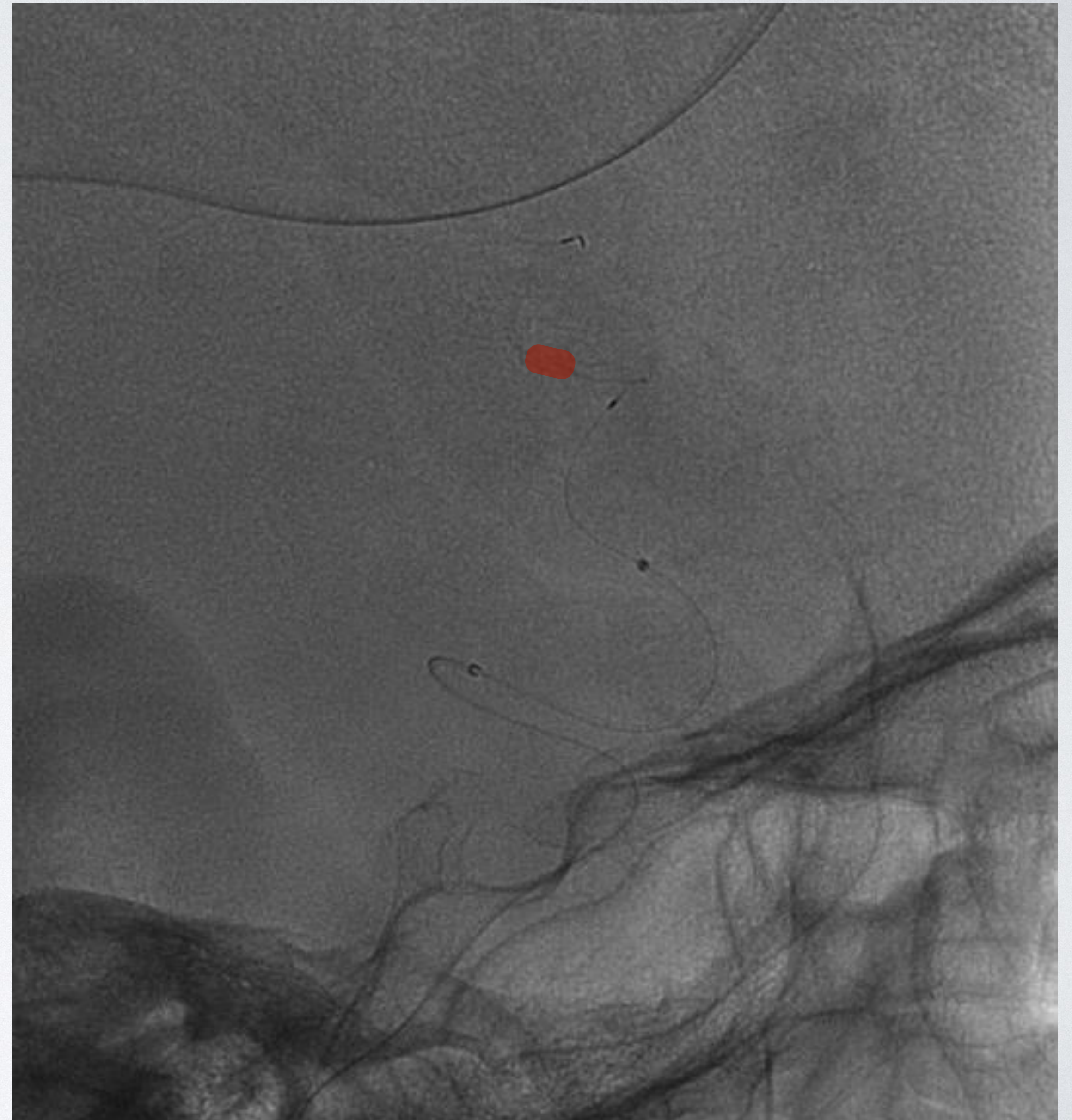
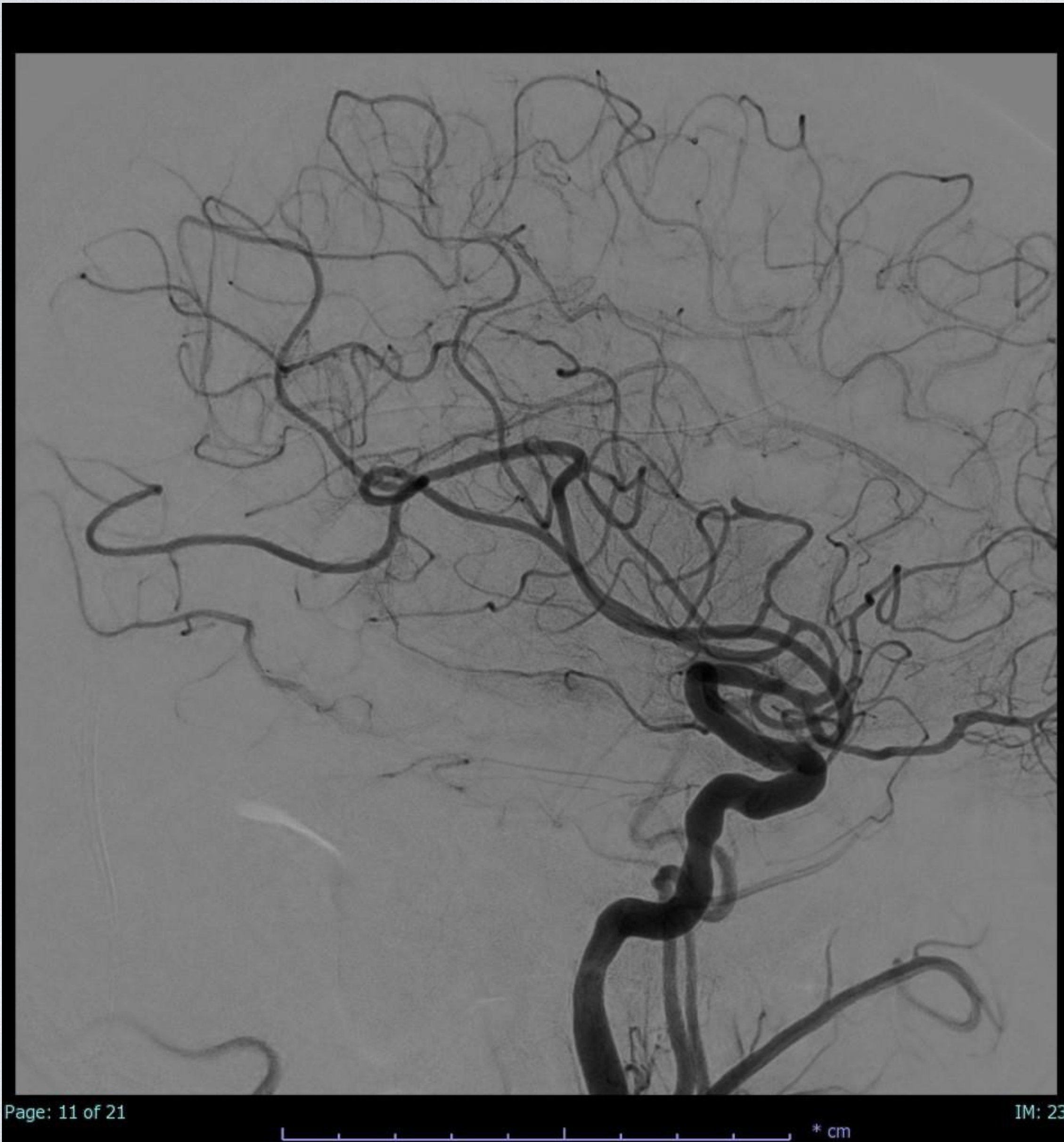
- $\approx$ 50% of MCA territory
- M1-like
- Higher NIHSS
- Higher risk of malignant ischemia

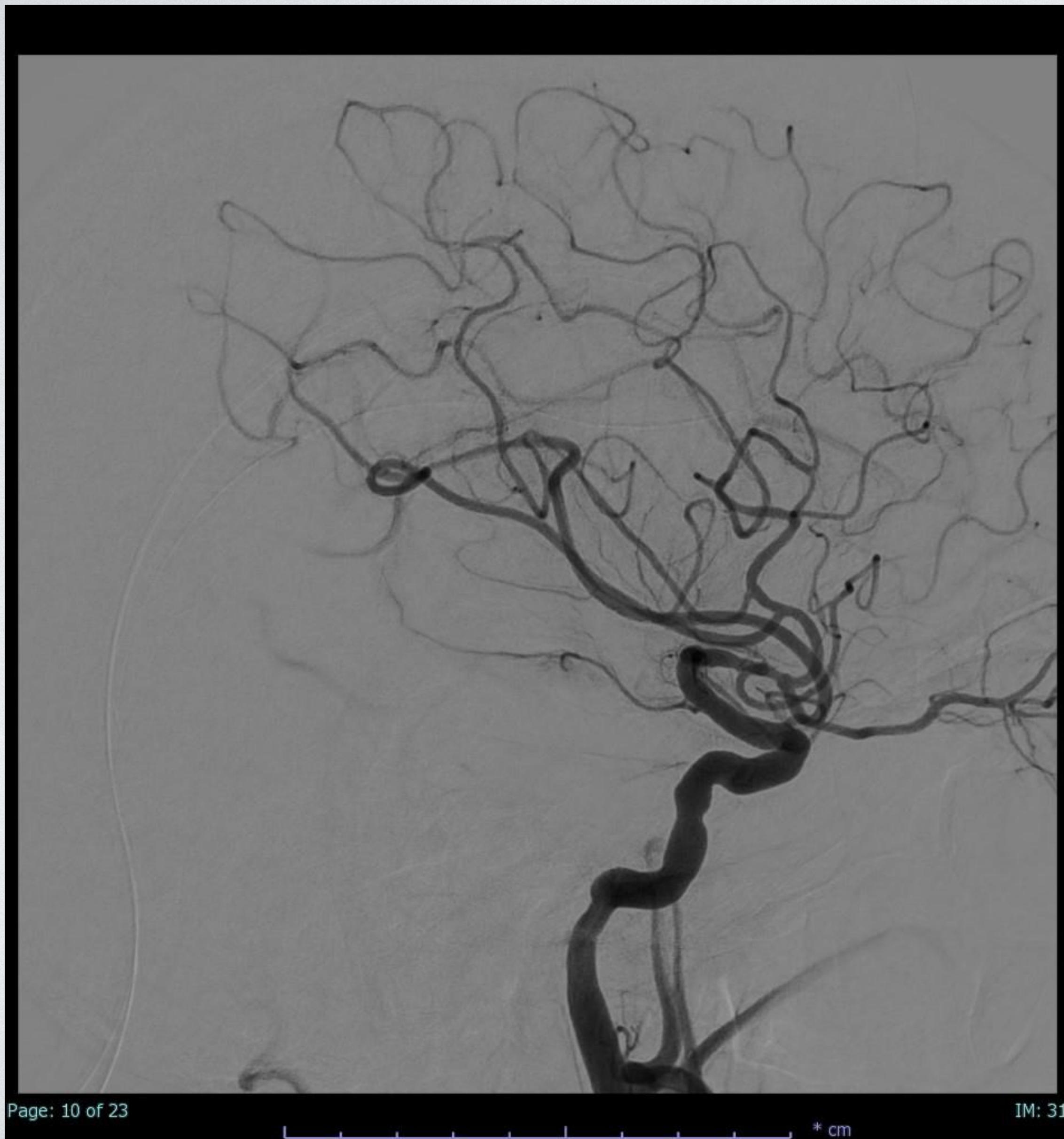
Non dominant



- <50% of MCA territory
- Low NIHSS
- Good outcome with BMM



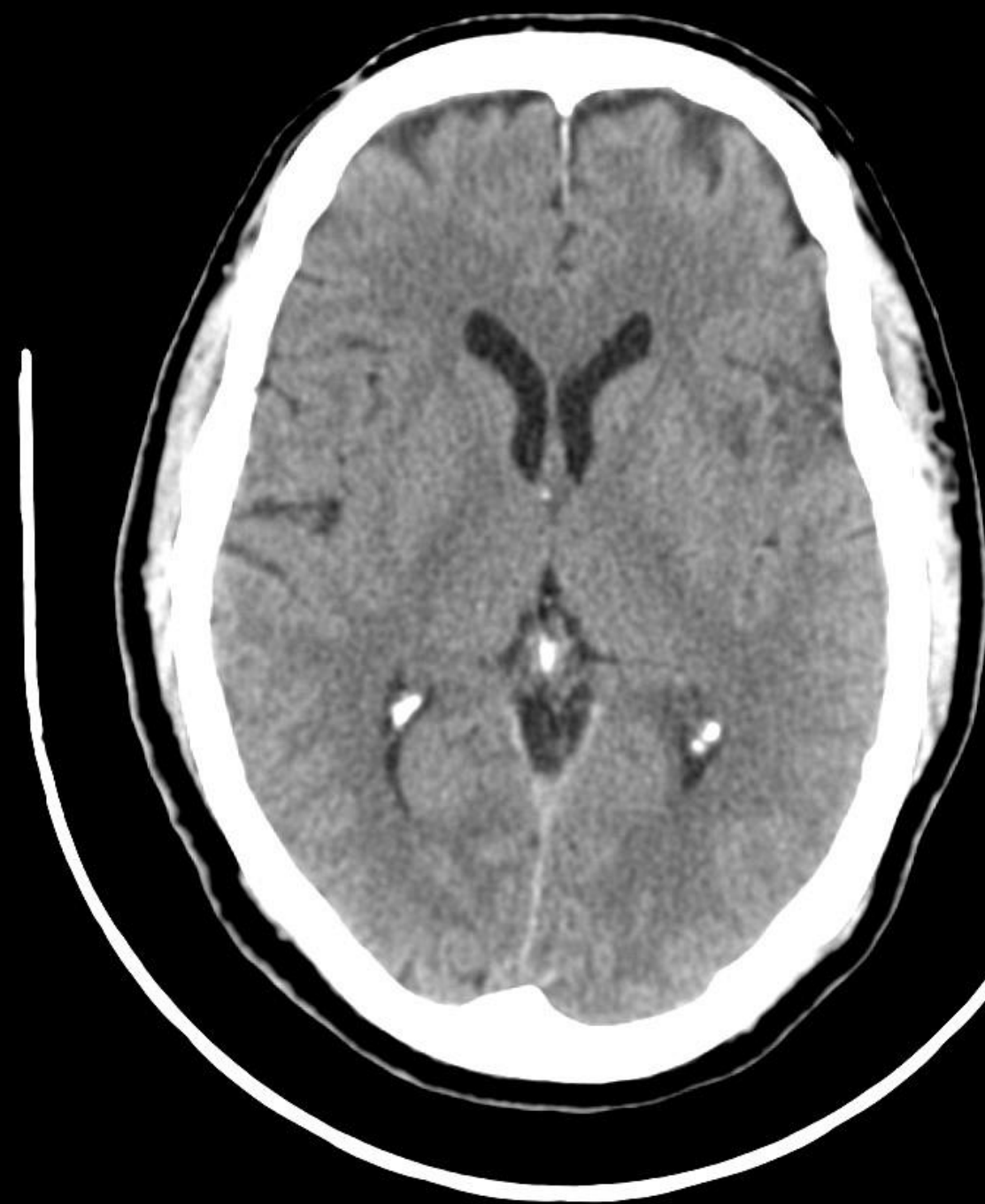




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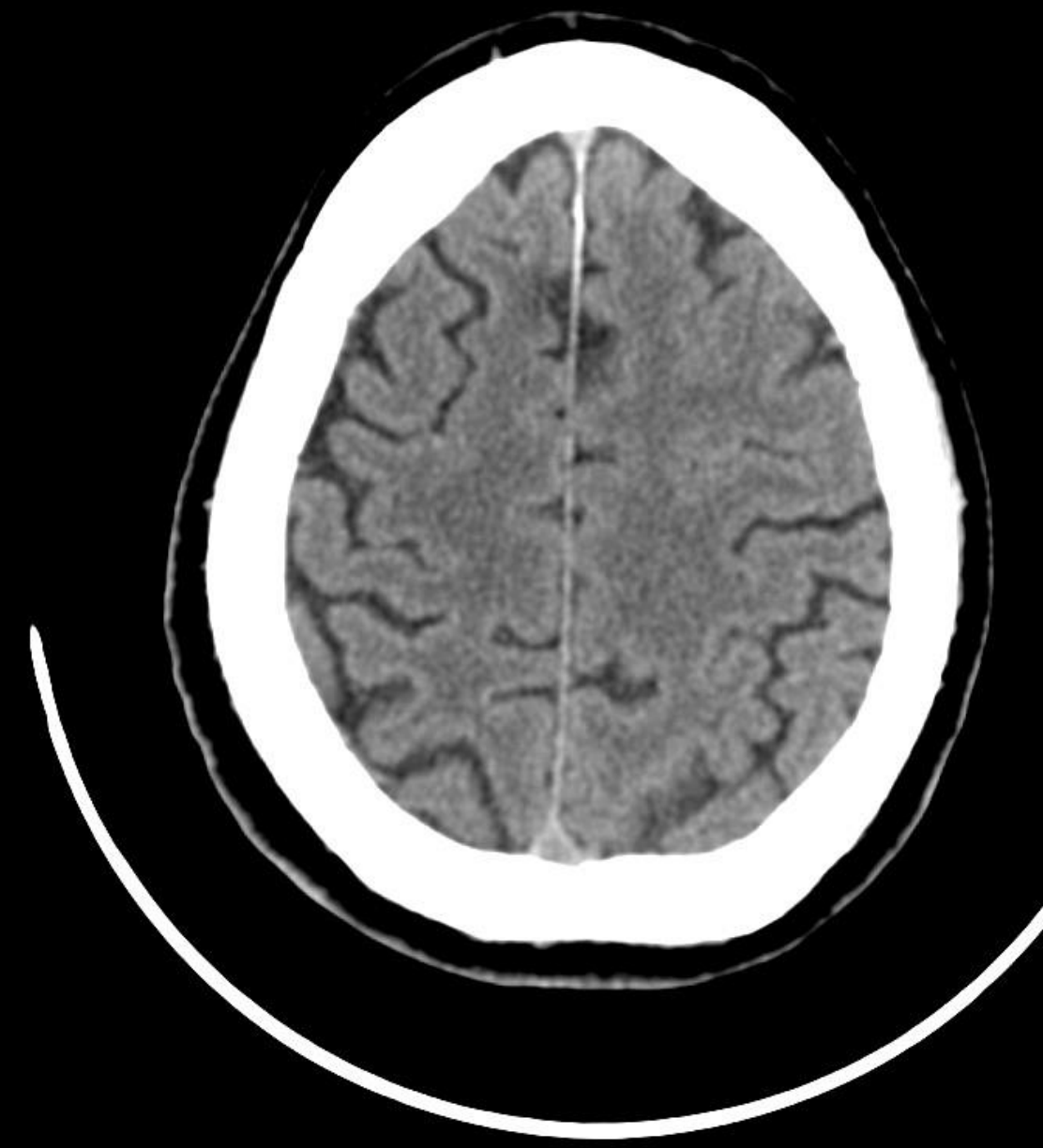
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cm

- Uomo, 54 anni
- APR: fumatore, iperteso. Assume Clopidogrel 75 mg/die per precedenti sospetti cerebrovascolari.
- Giunge in PS in Ospedale periferico e viene trasferito a Salerno con sospetto di circolo posteriore.
- Afasia e lieve ipostenia arto superiore destro da circa 4 ore. Durante il trasporto valori pressori altalenanti e clinica fluttuante. Riferita cefalea.

CASE 2



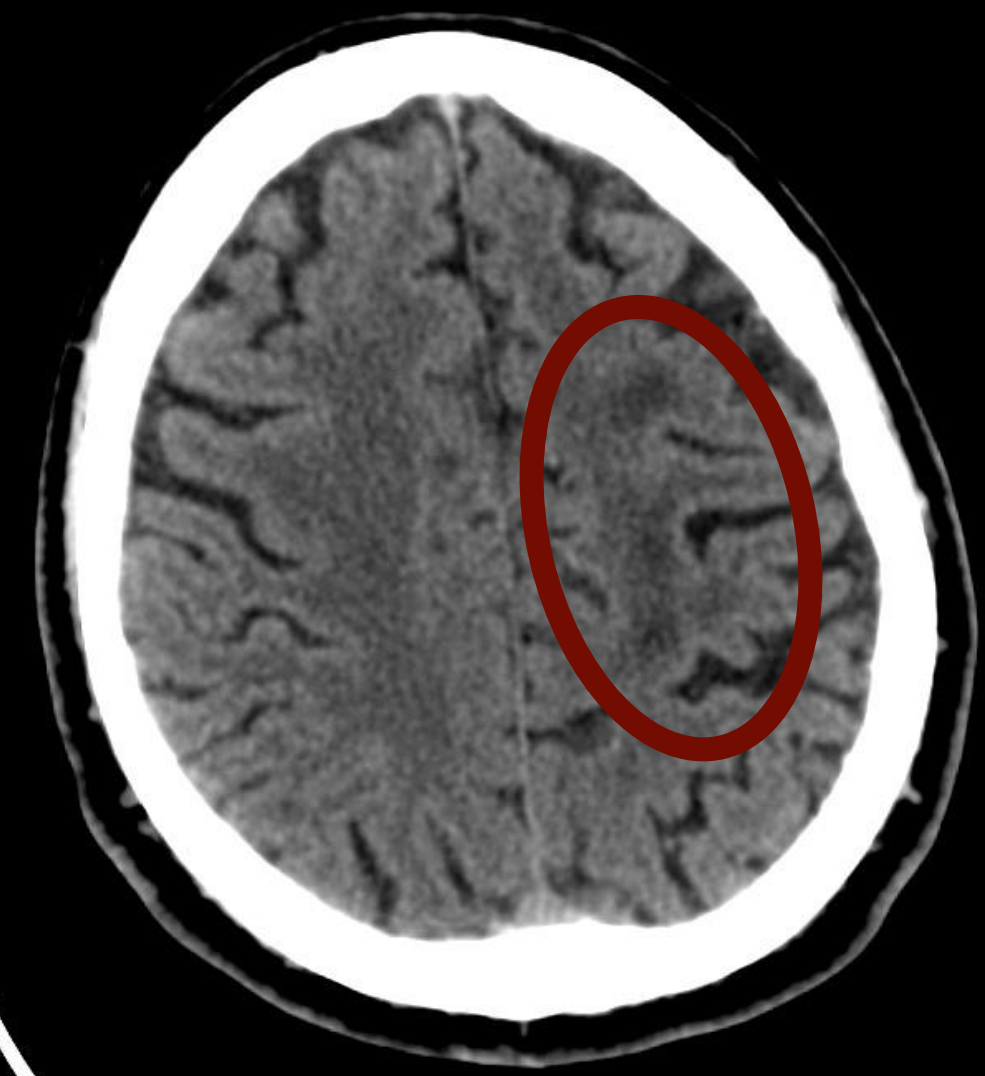
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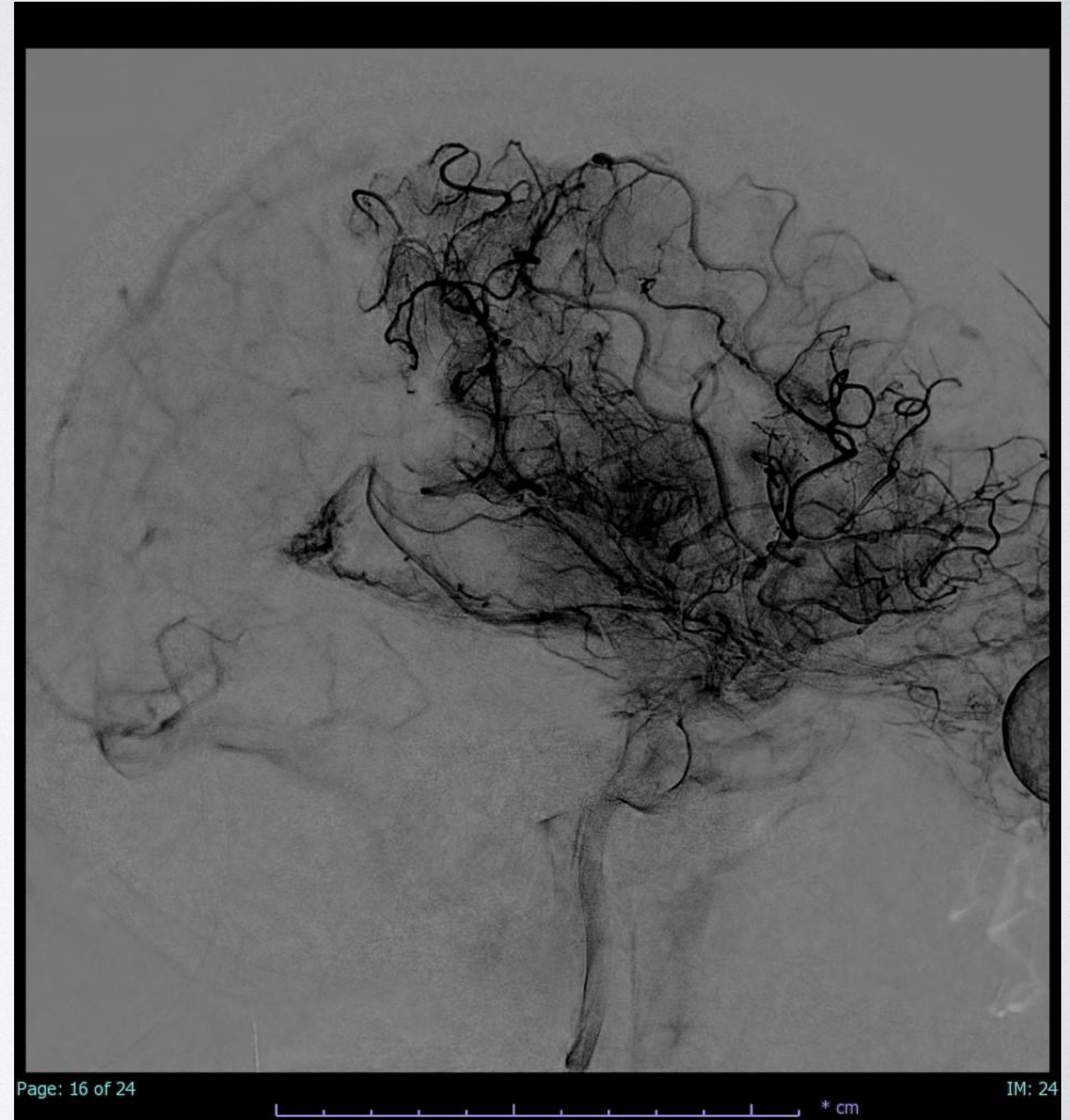
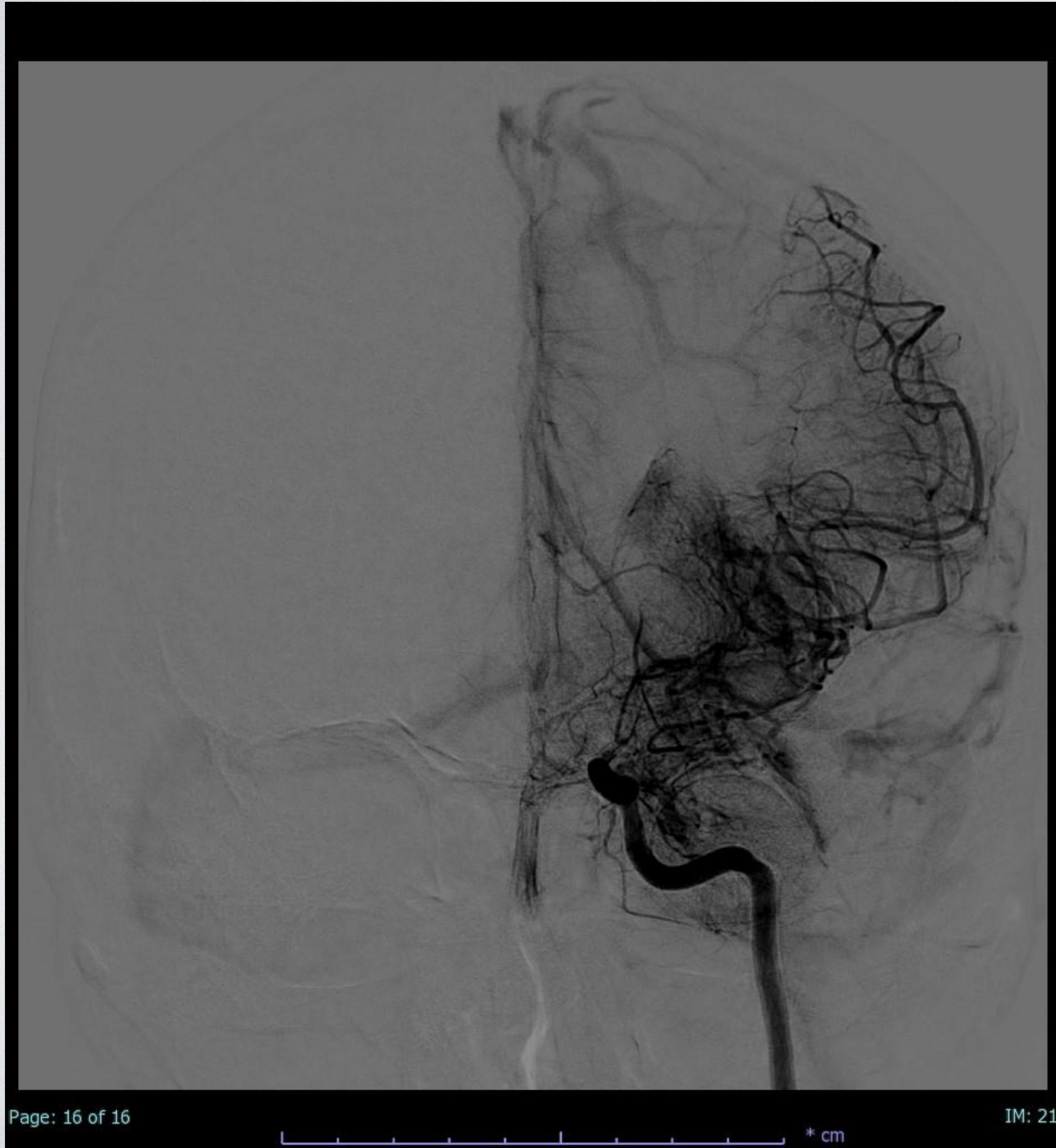
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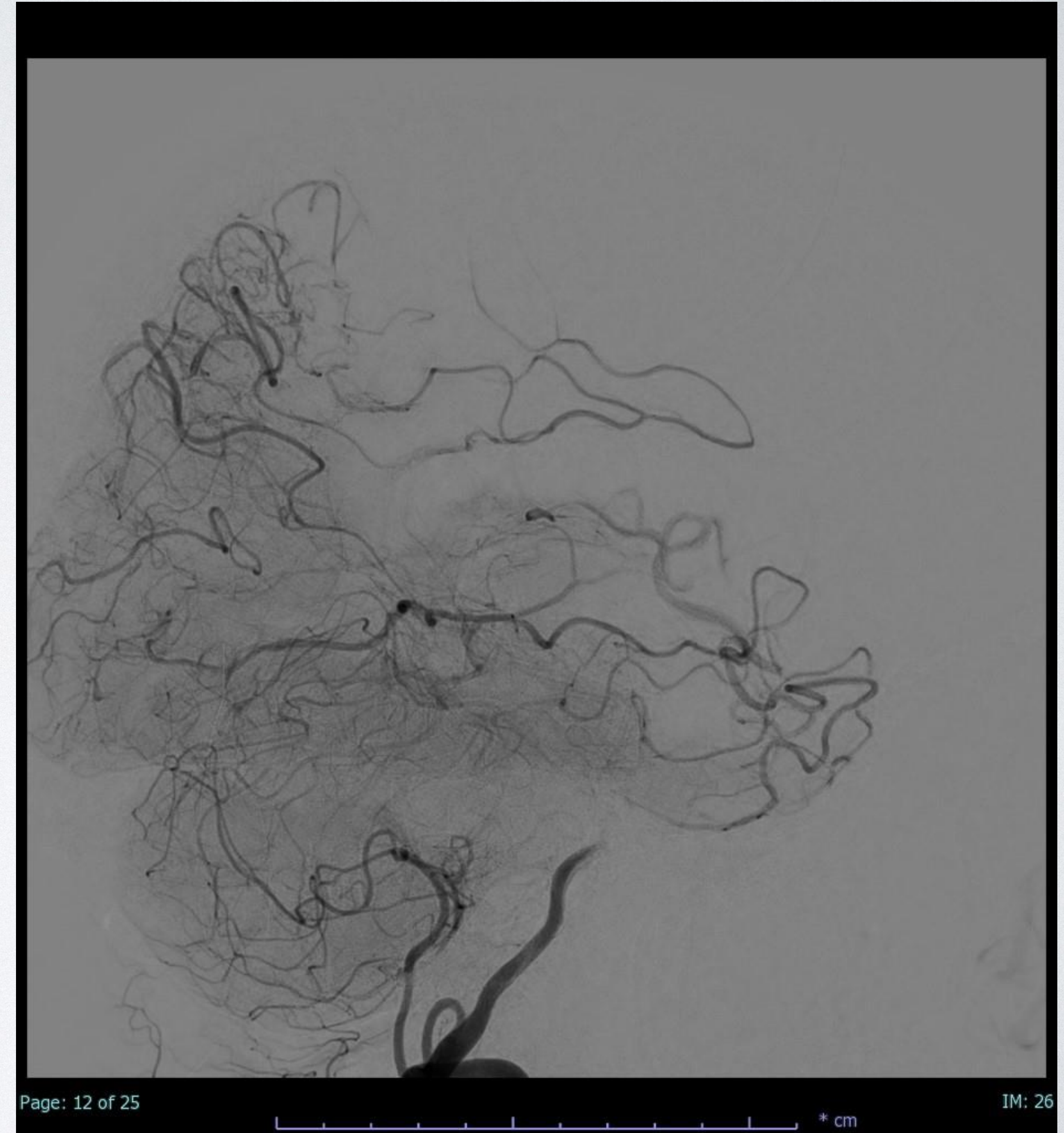
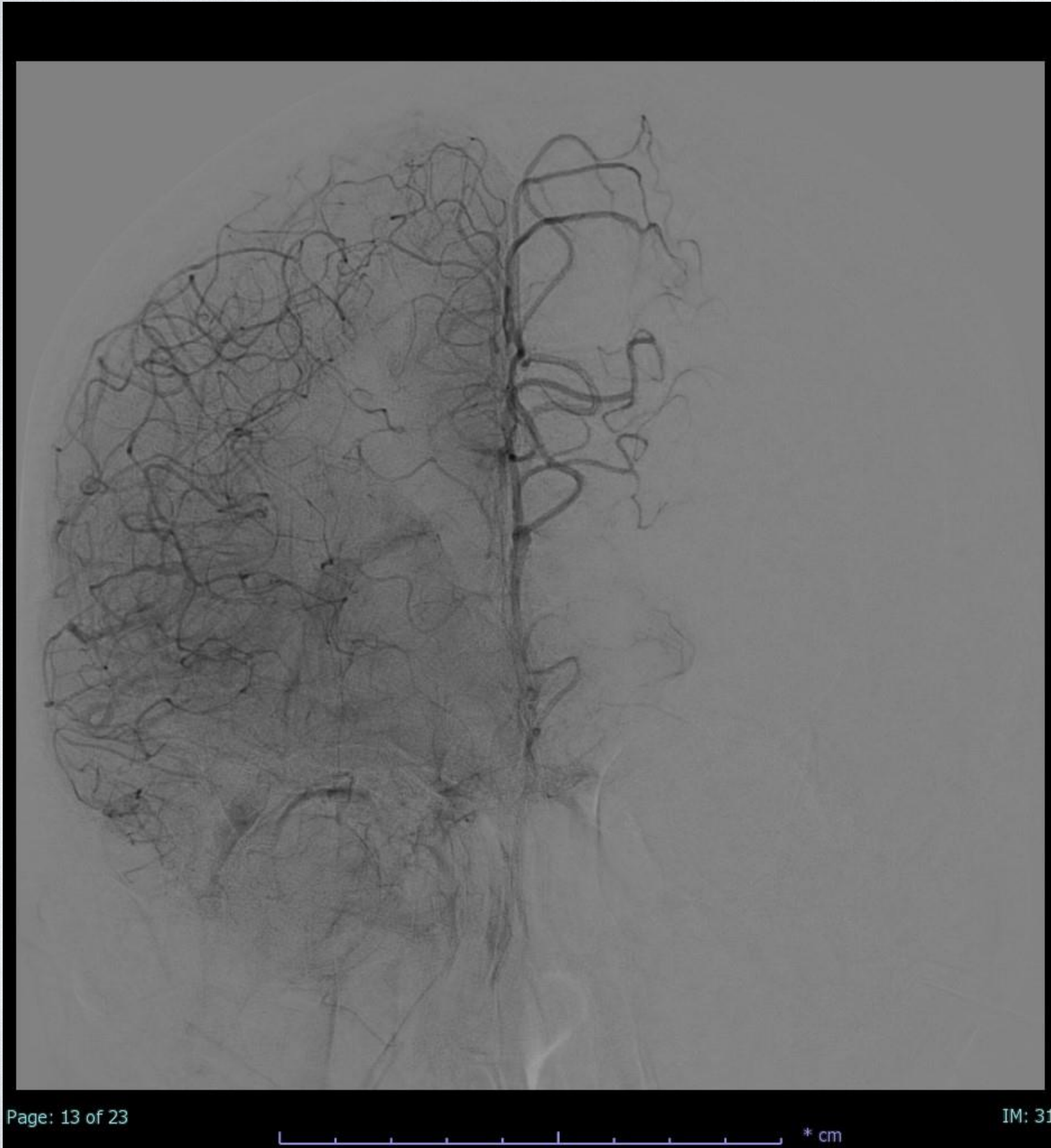


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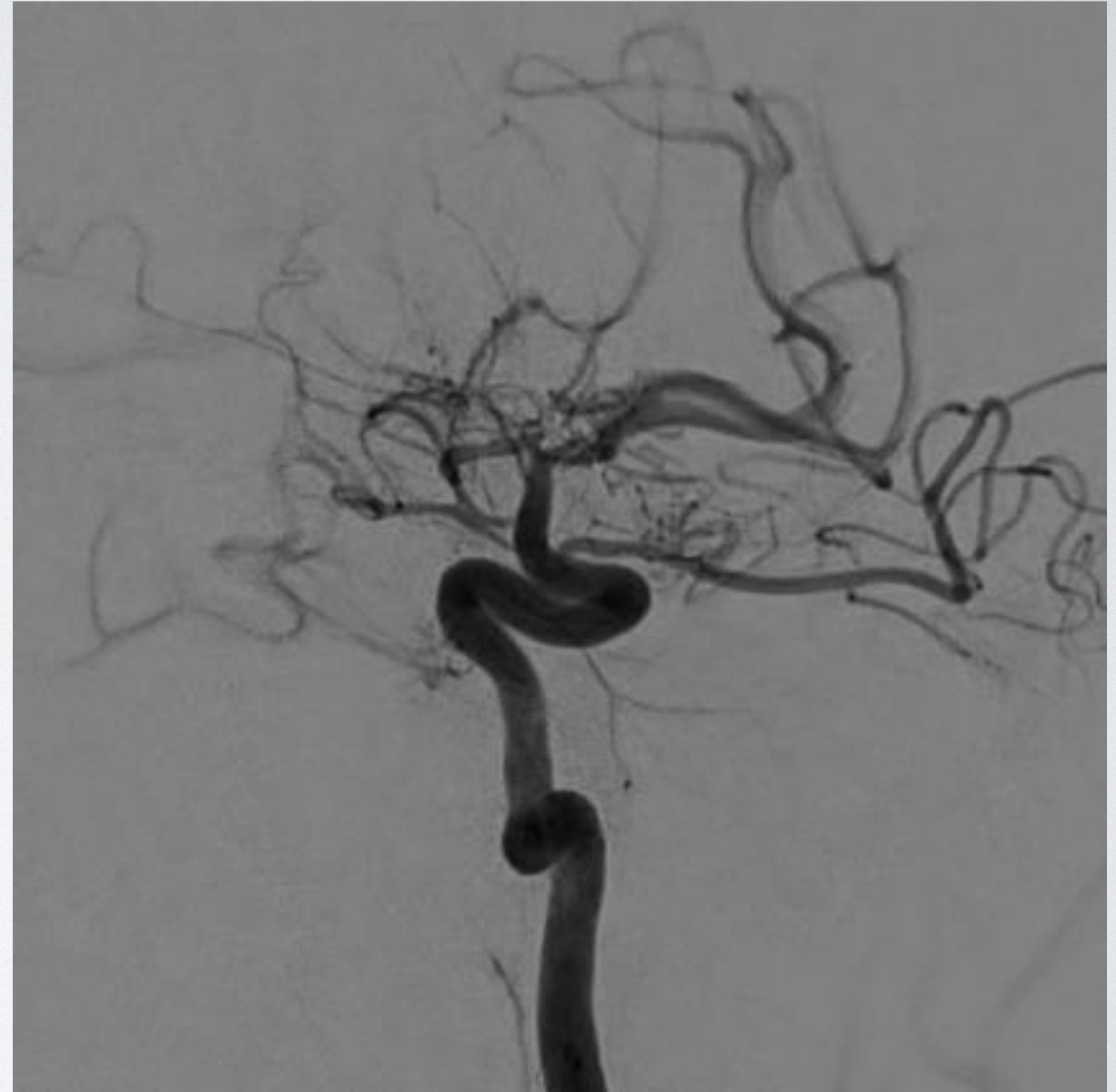






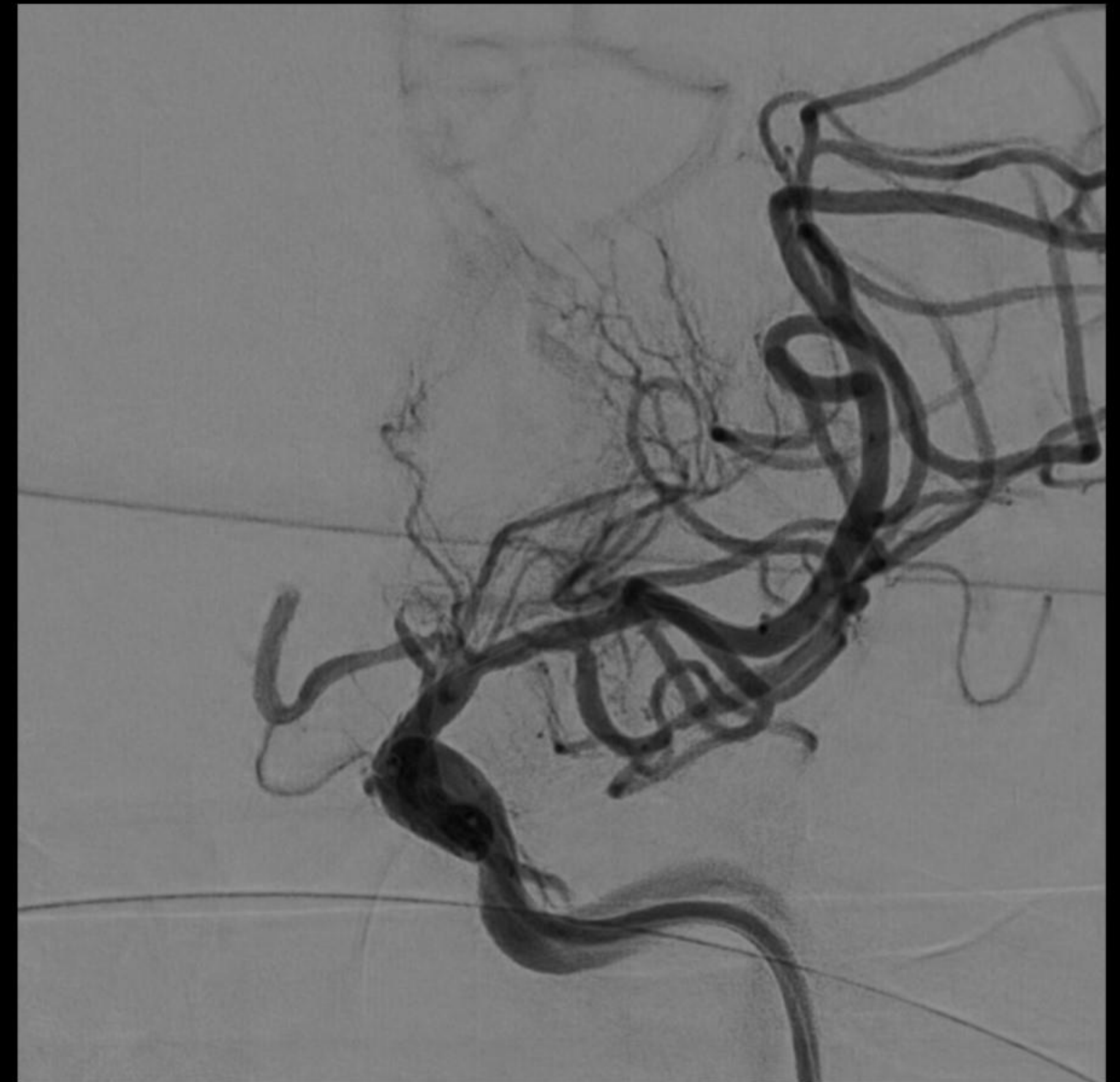
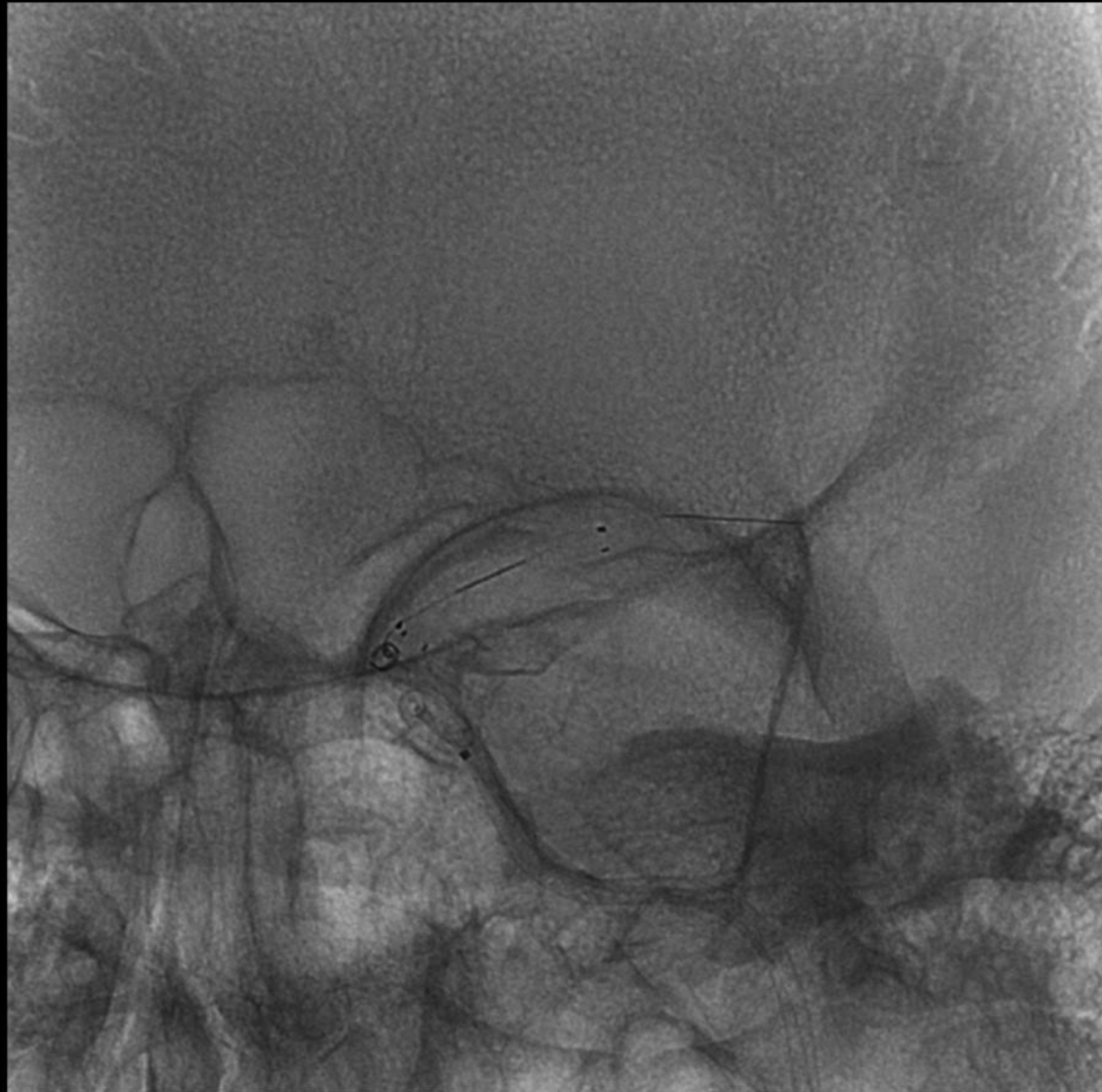


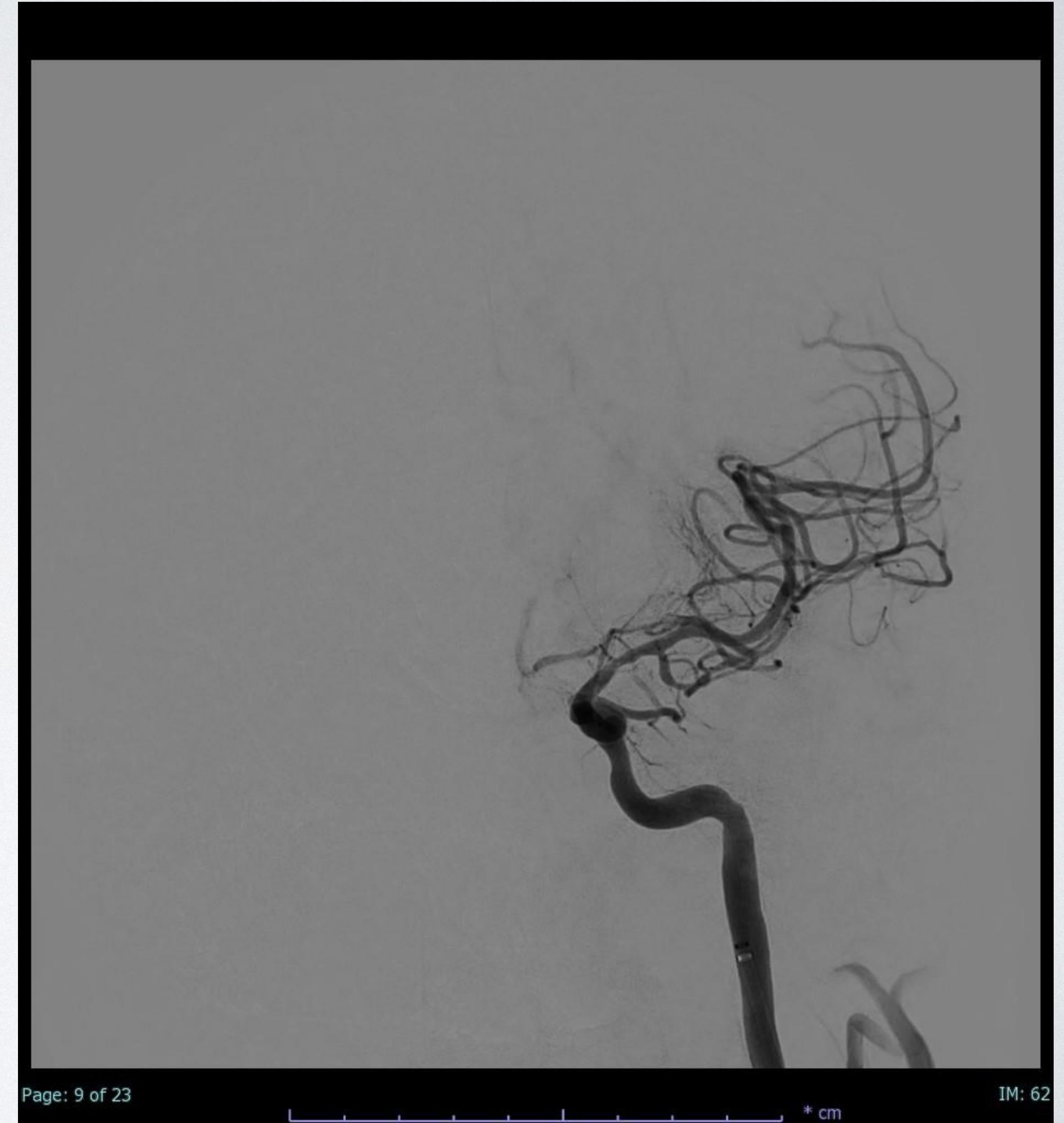
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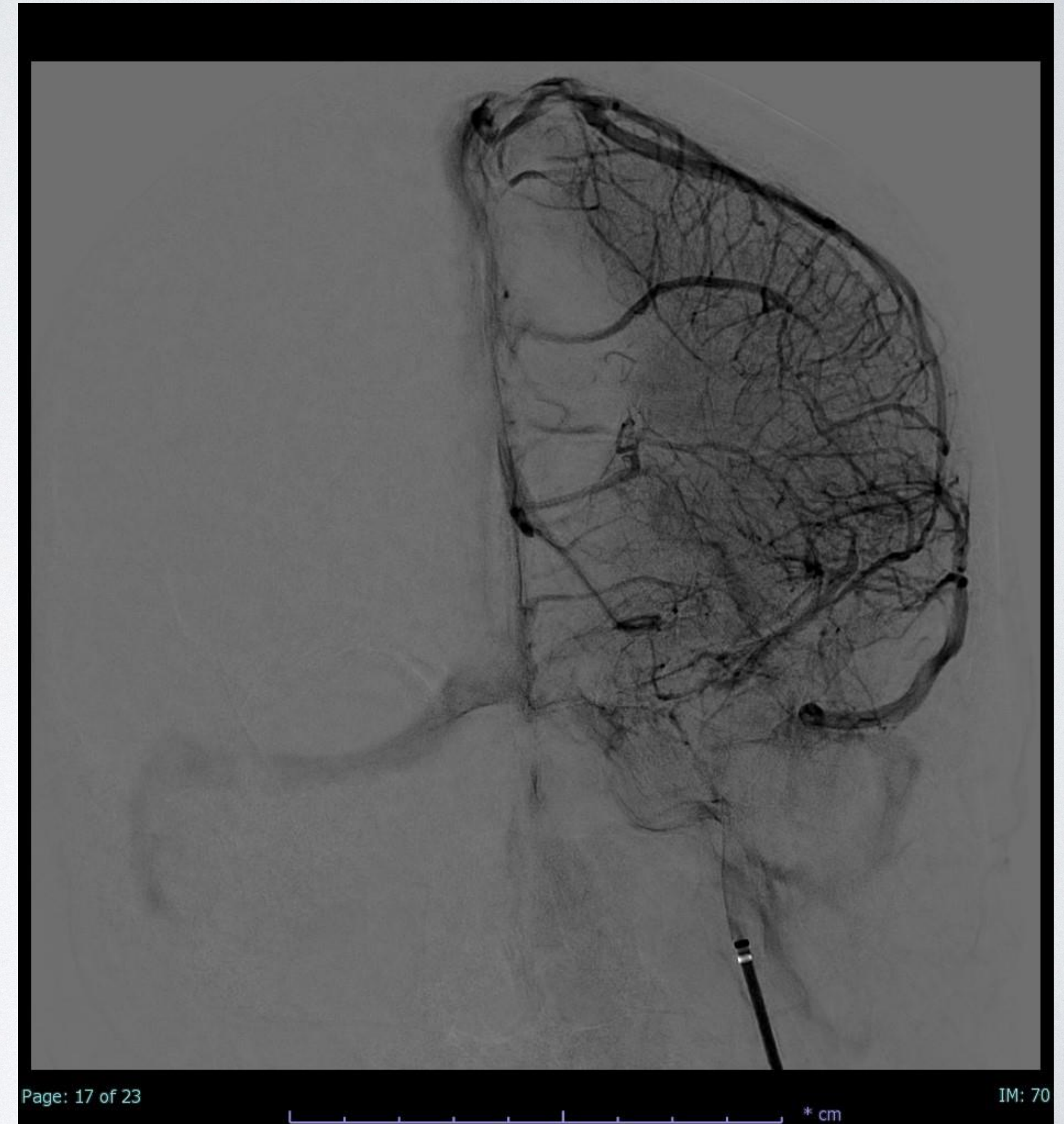
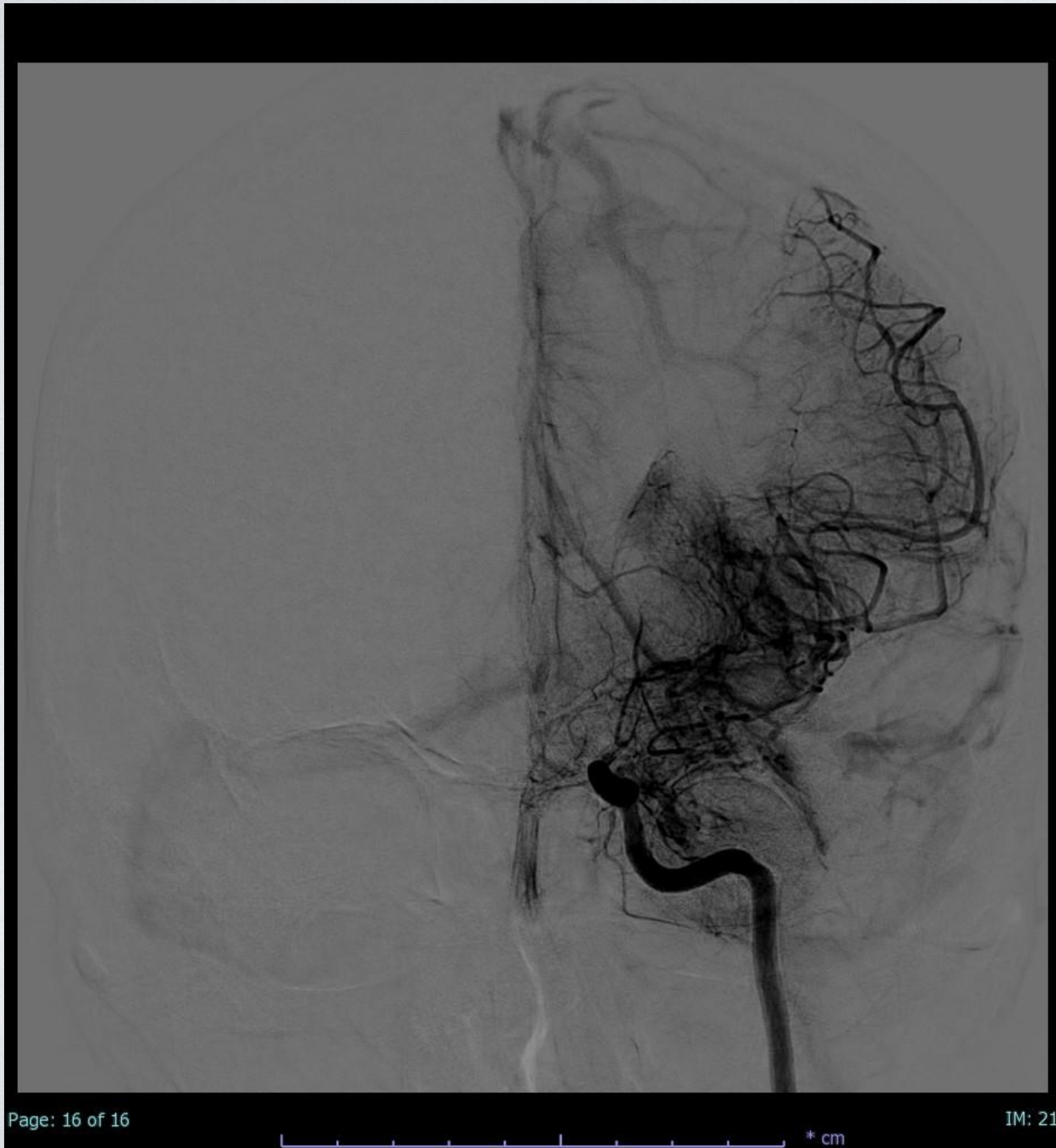
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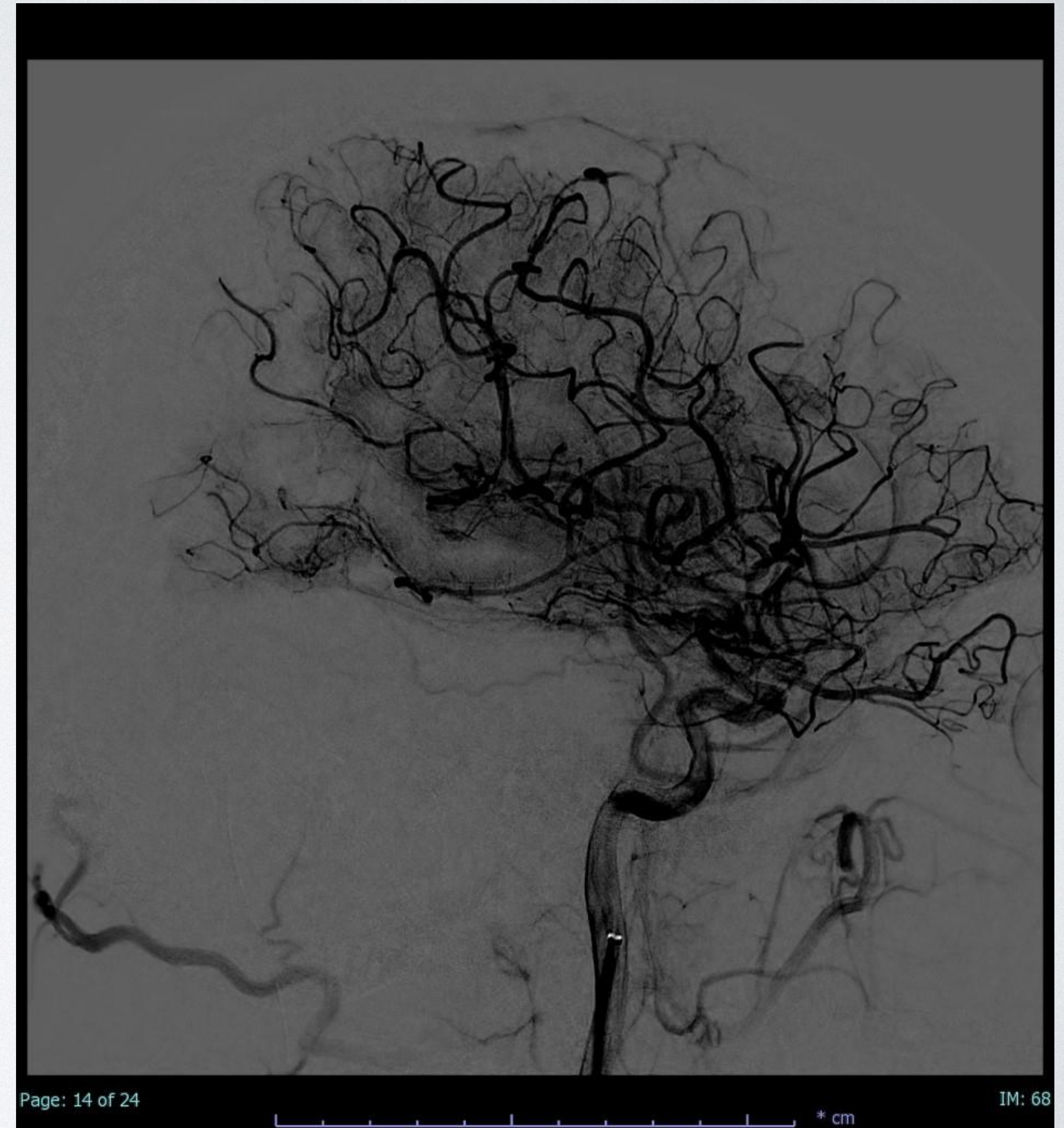
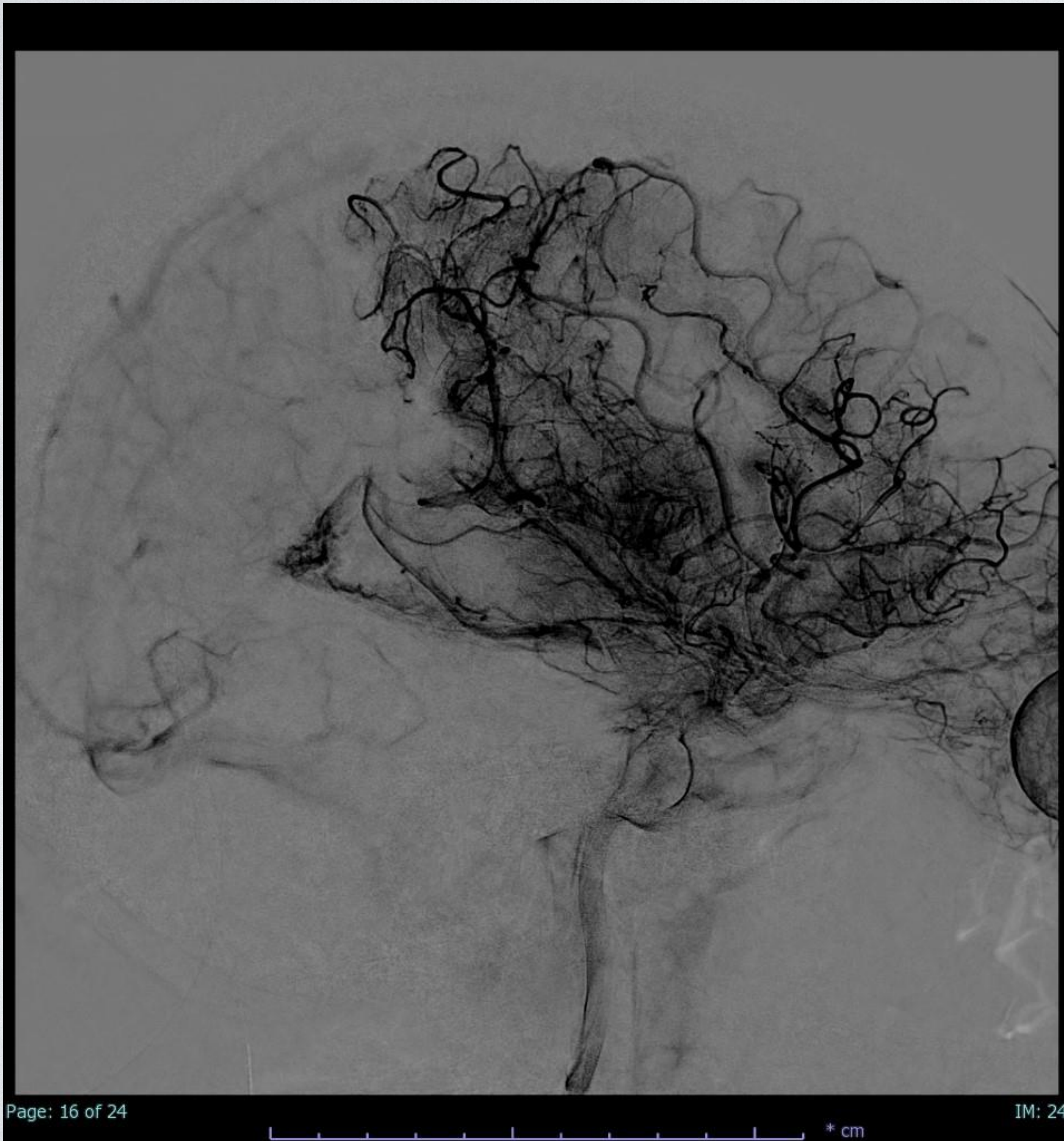




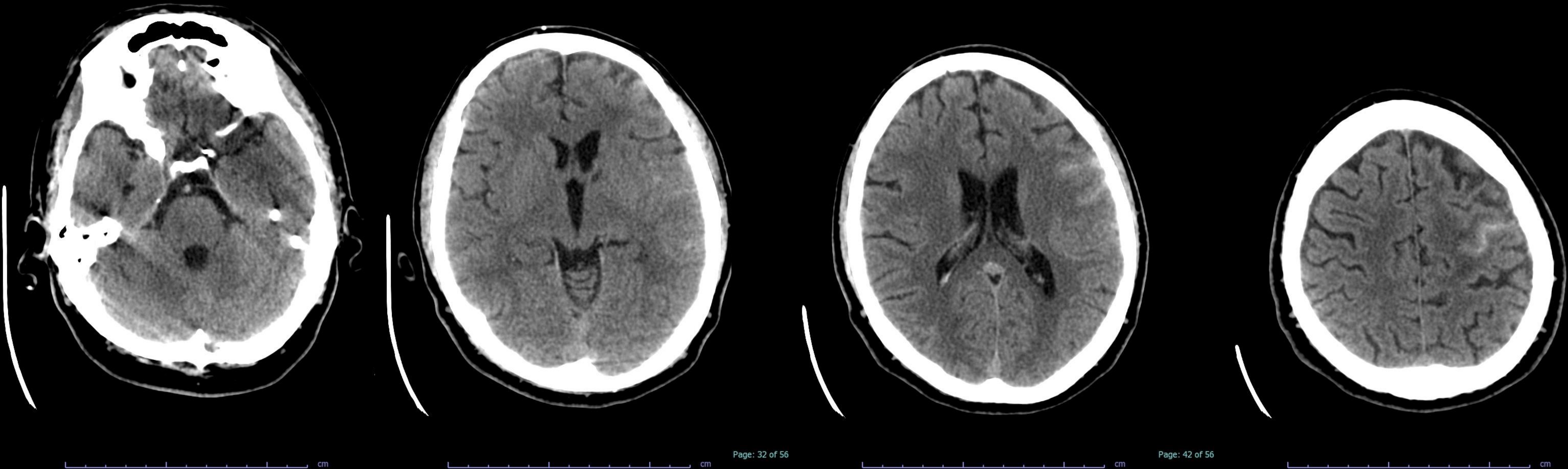


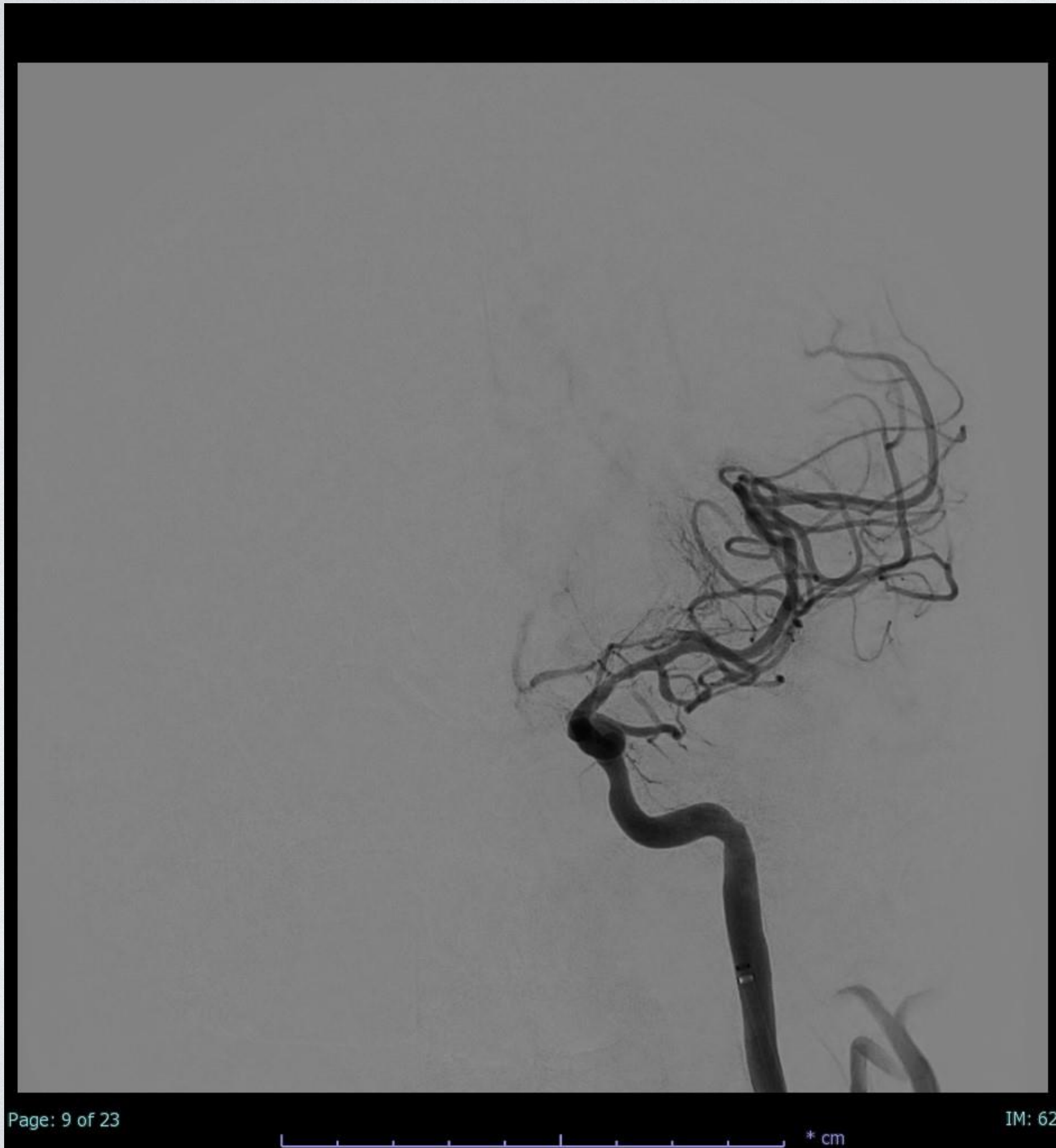
CASE 2





CASE 2

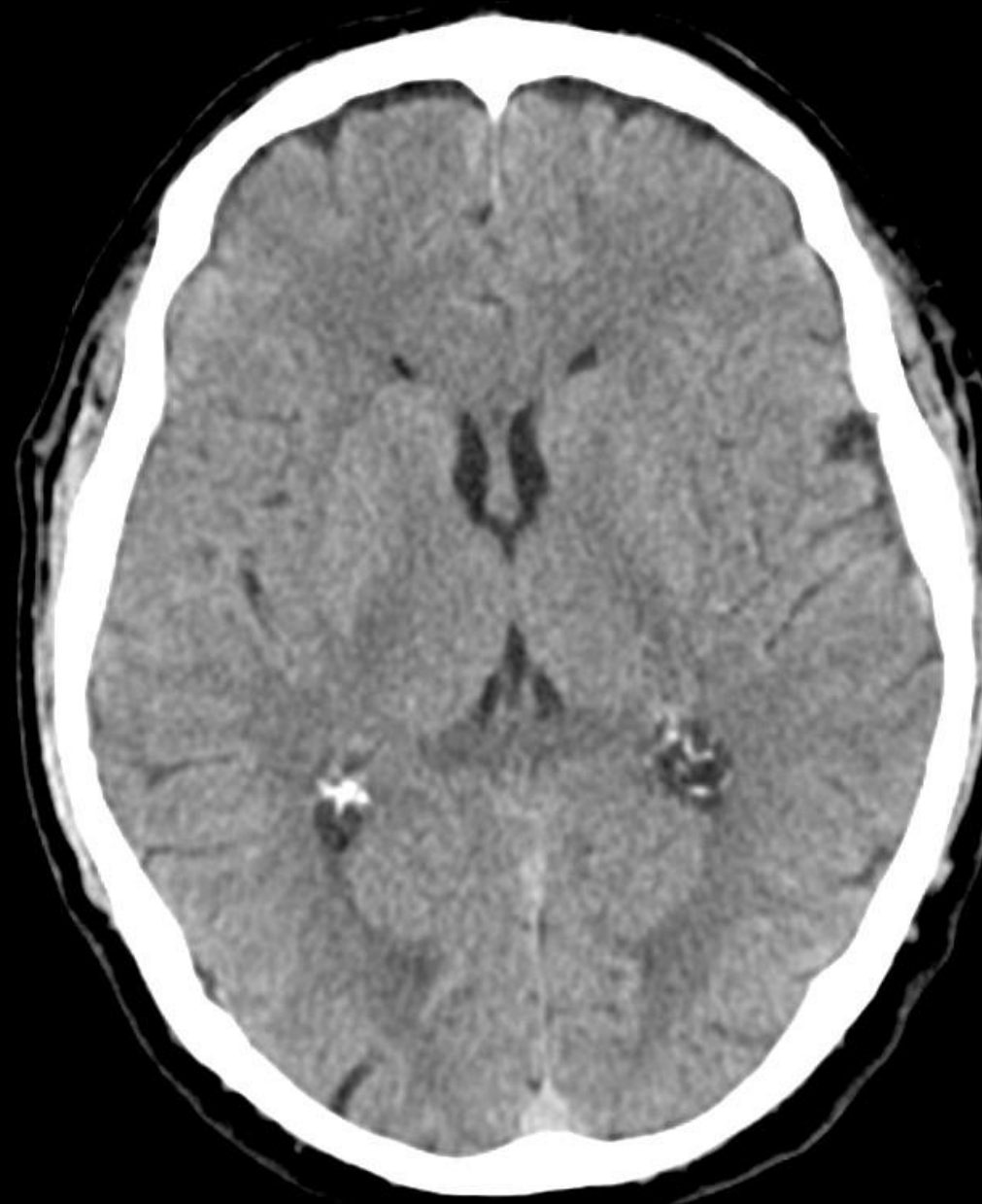




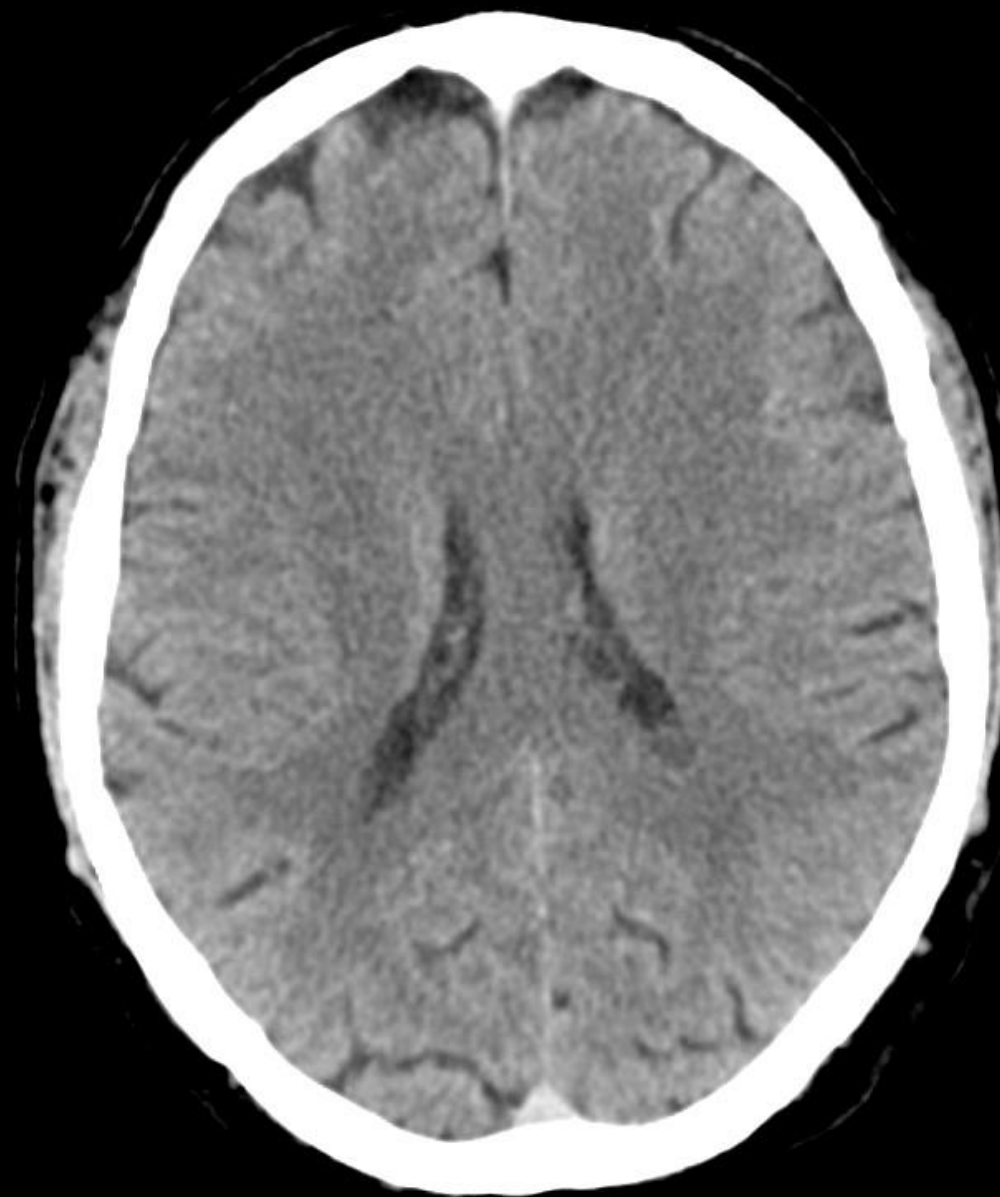


- Uomo, 68 anni
- APR: fumatore, iperteso. Non assume alcuna terapia.
- Giunge in PS in serata con clinica fluttuante dalla mattina caratterizzata da ipostenia dell'arto superiore destro da alcuni giorni.
- All'EON NIHSS 1.

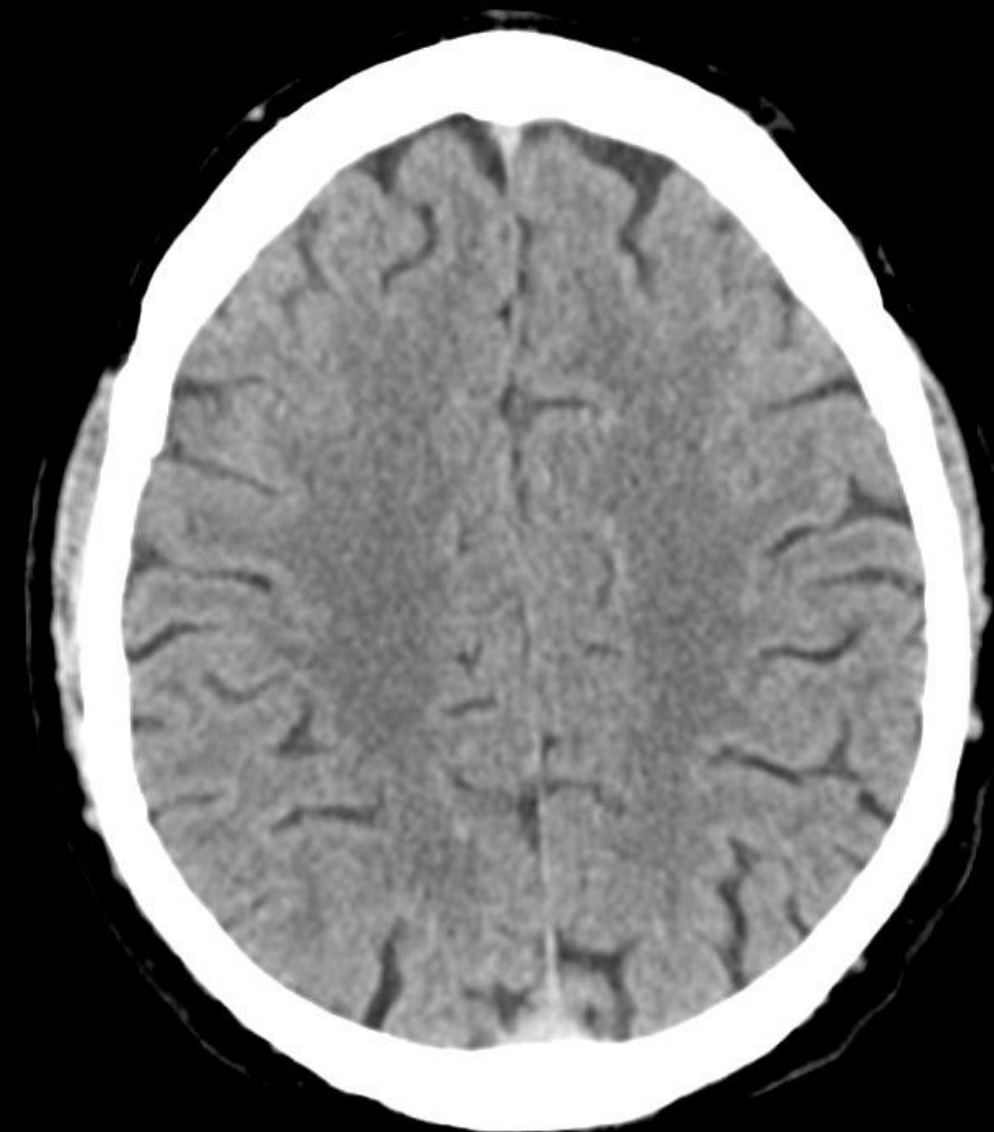
CASE 3



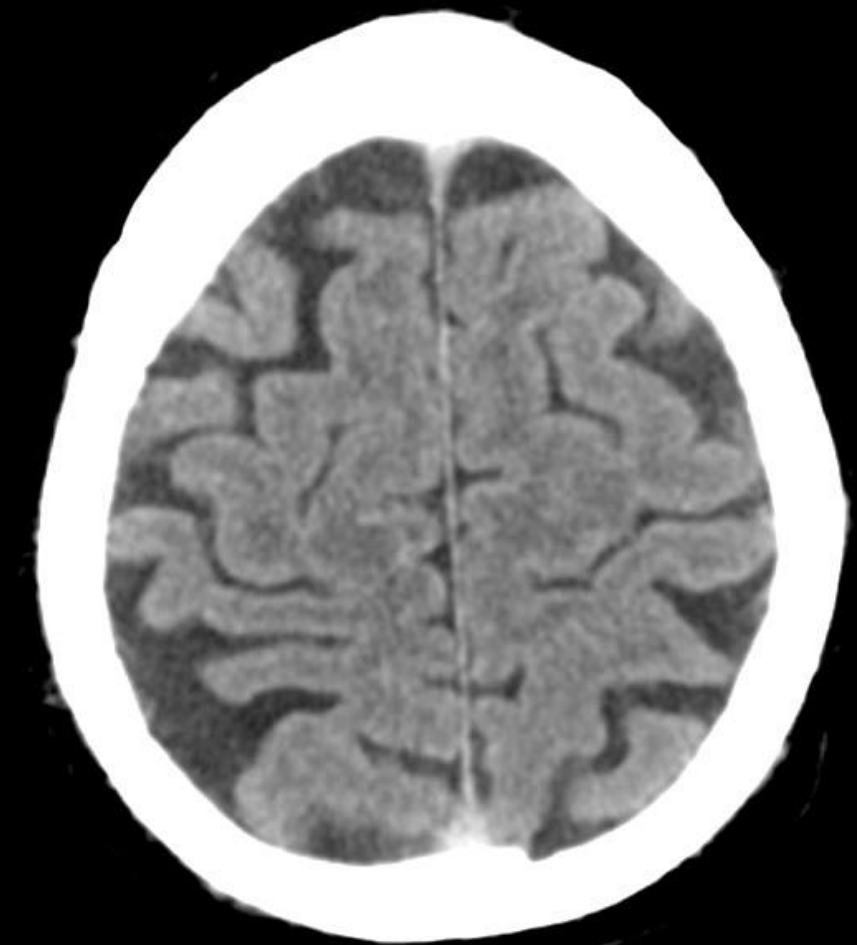
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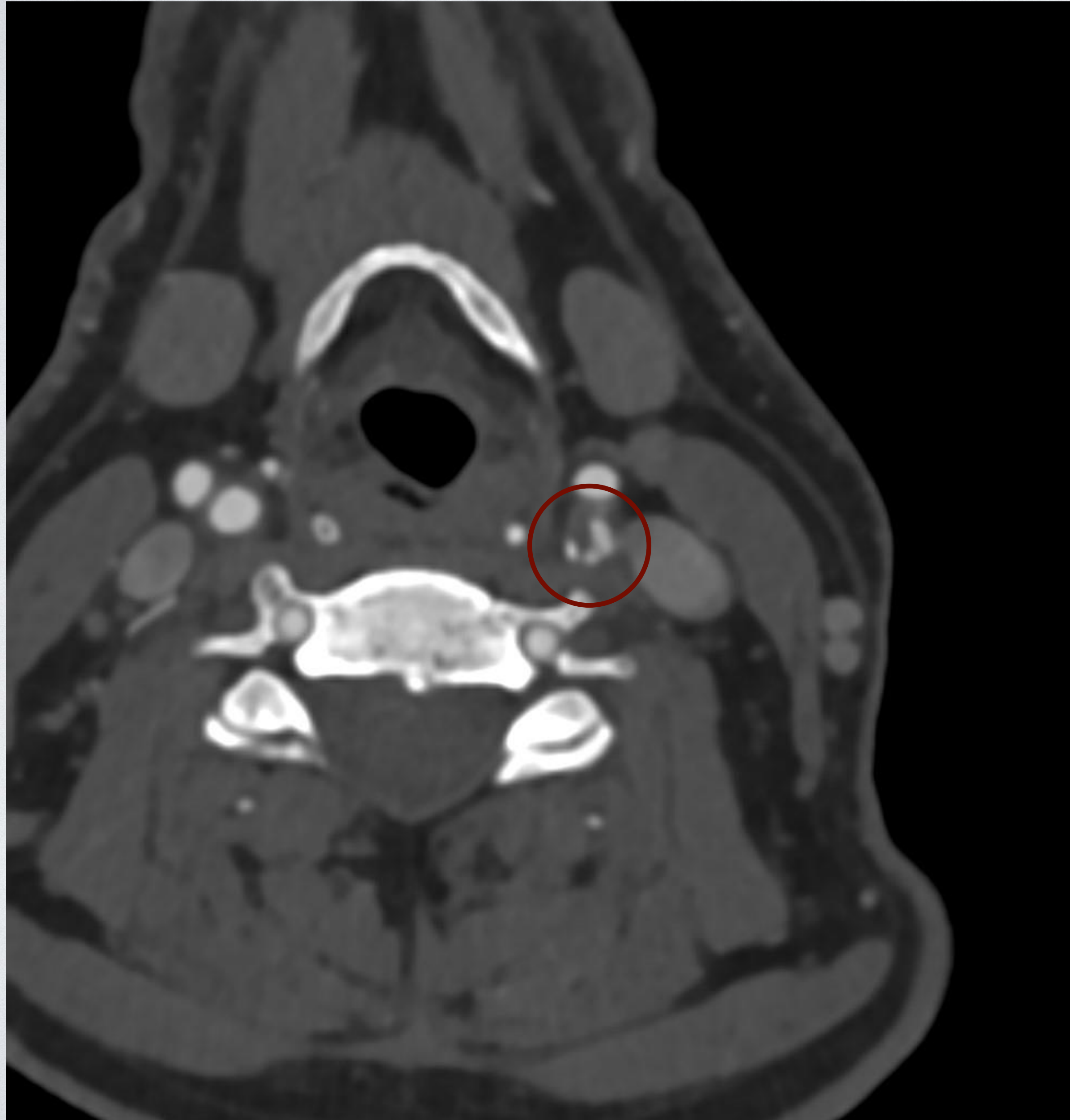
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CASE 3



CASE 3

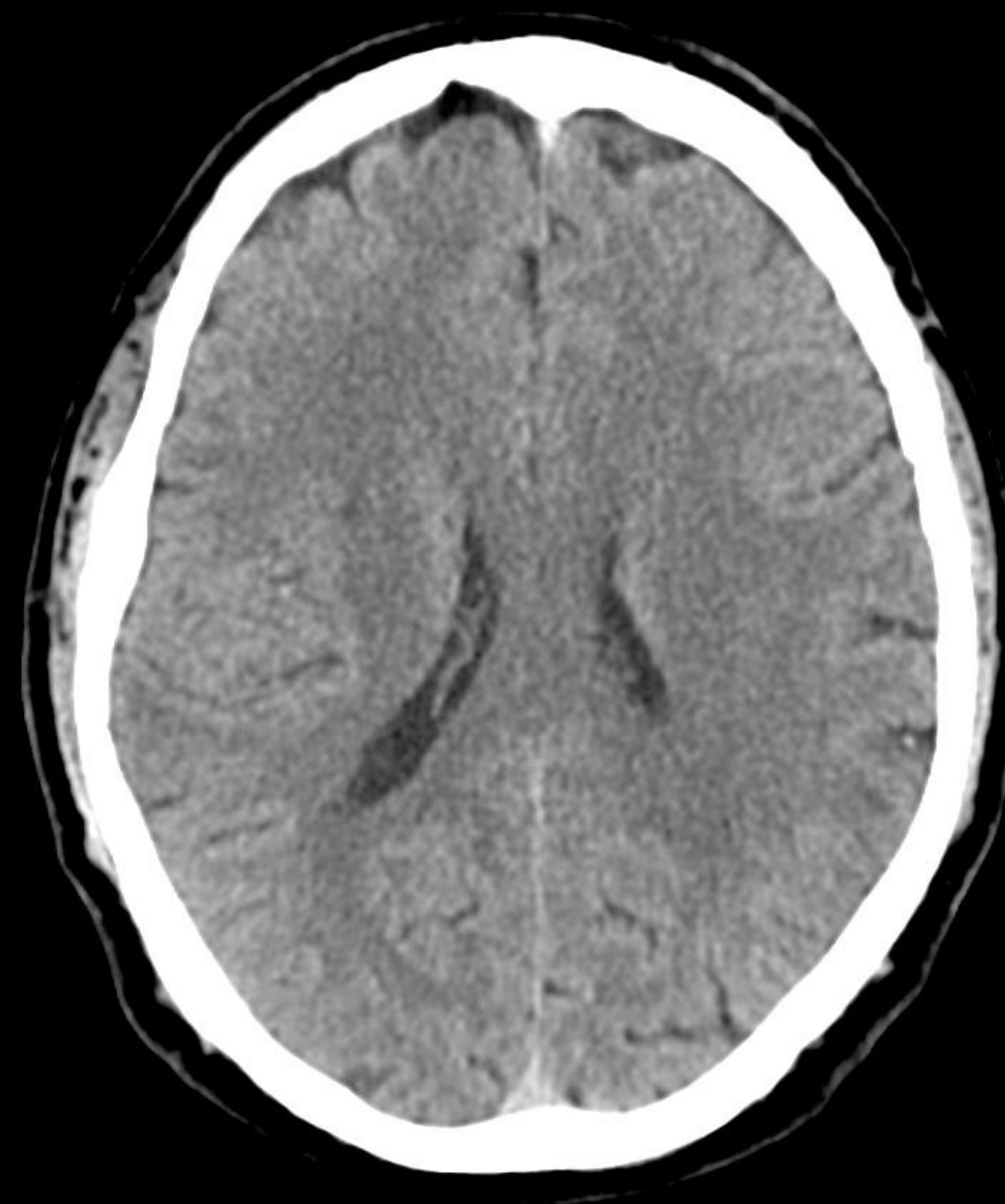


- Paziente paucisintomatico.
- Placca ulcerata con trombo flottante.
- Inizio immediato di terapia farmacologica con ASA 100 mg e Plavix 75 mg.
- La mattina seguente alle 09:00 il paziente diventa afasico e paretico a destra (NIHSS 11).

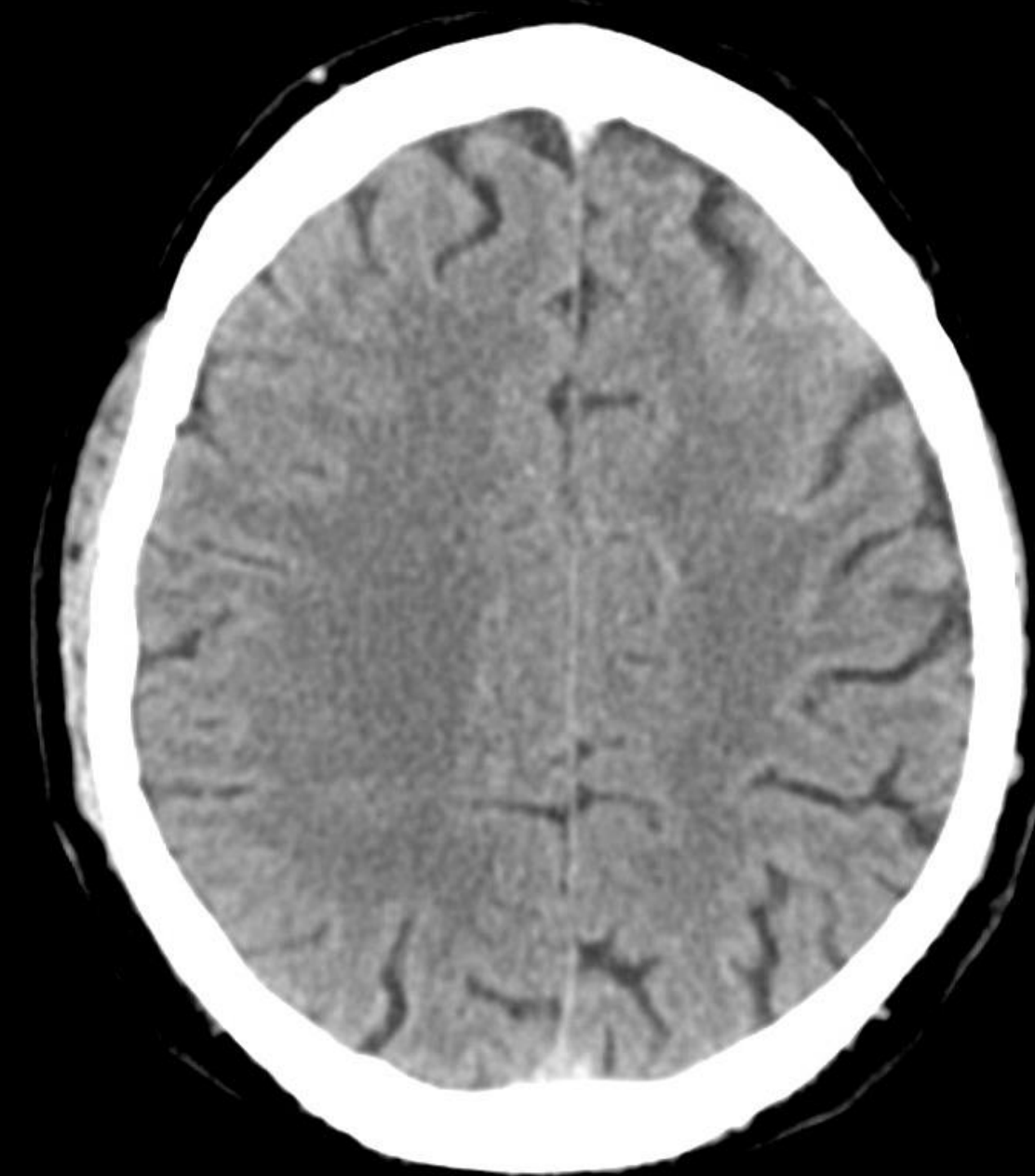
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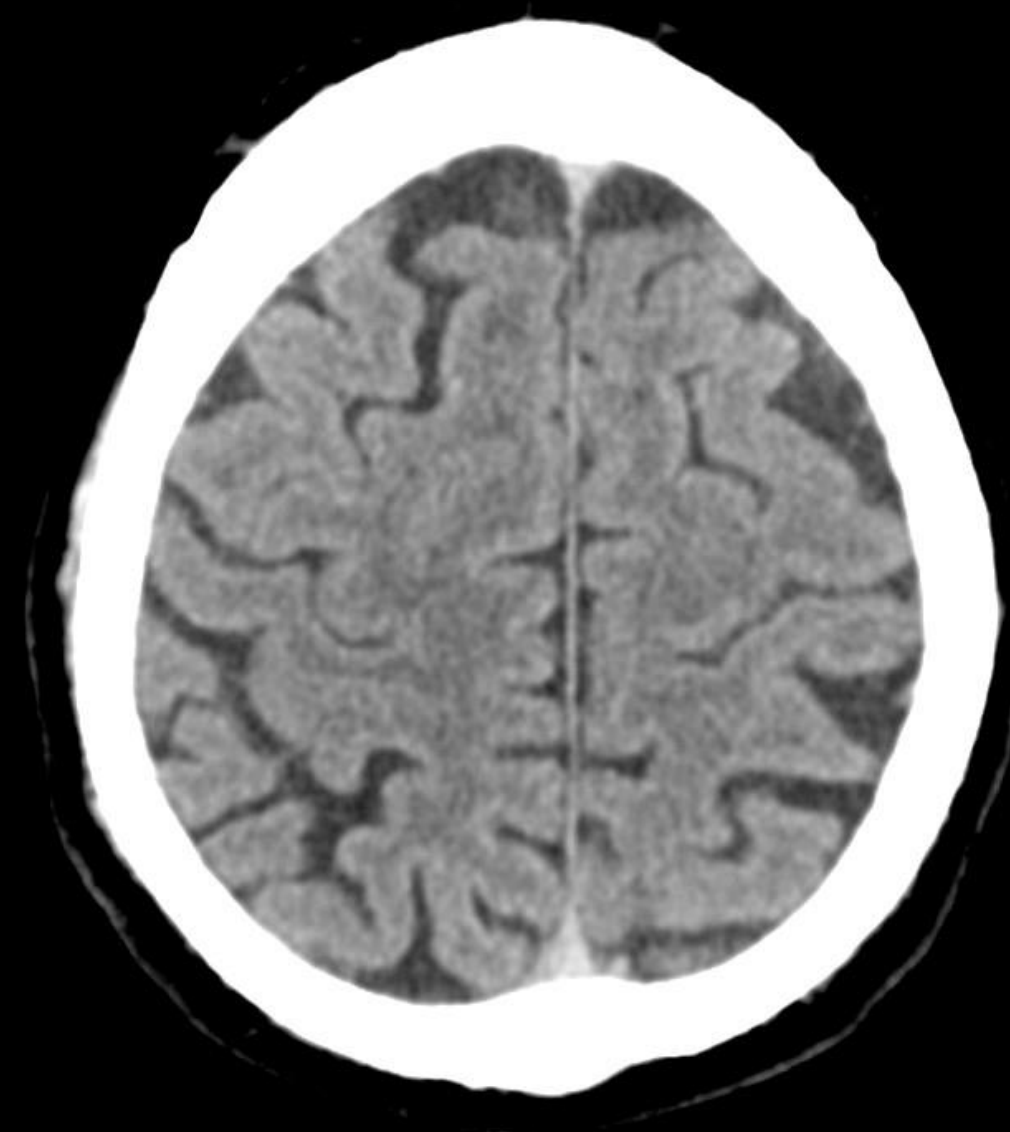
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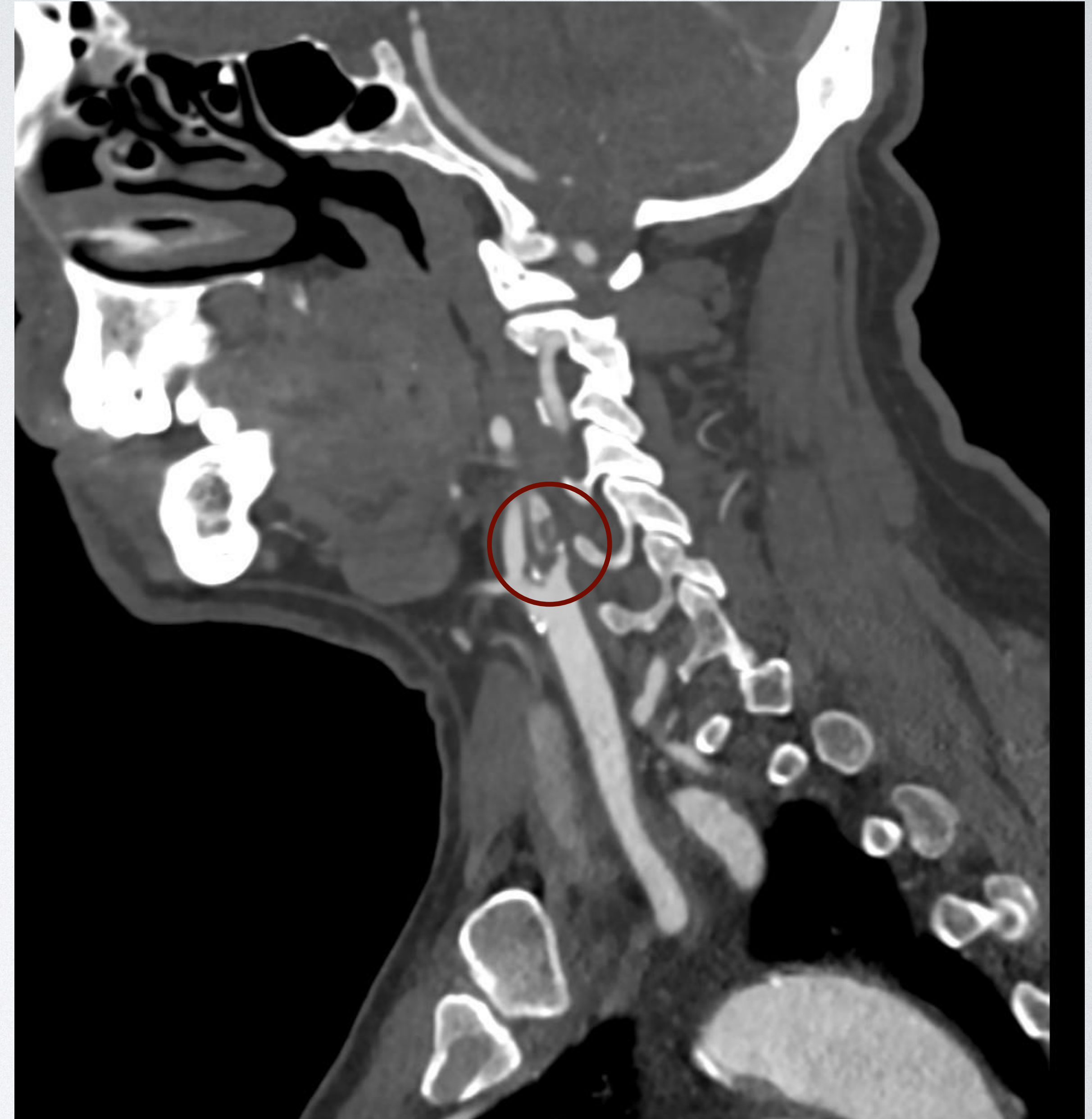
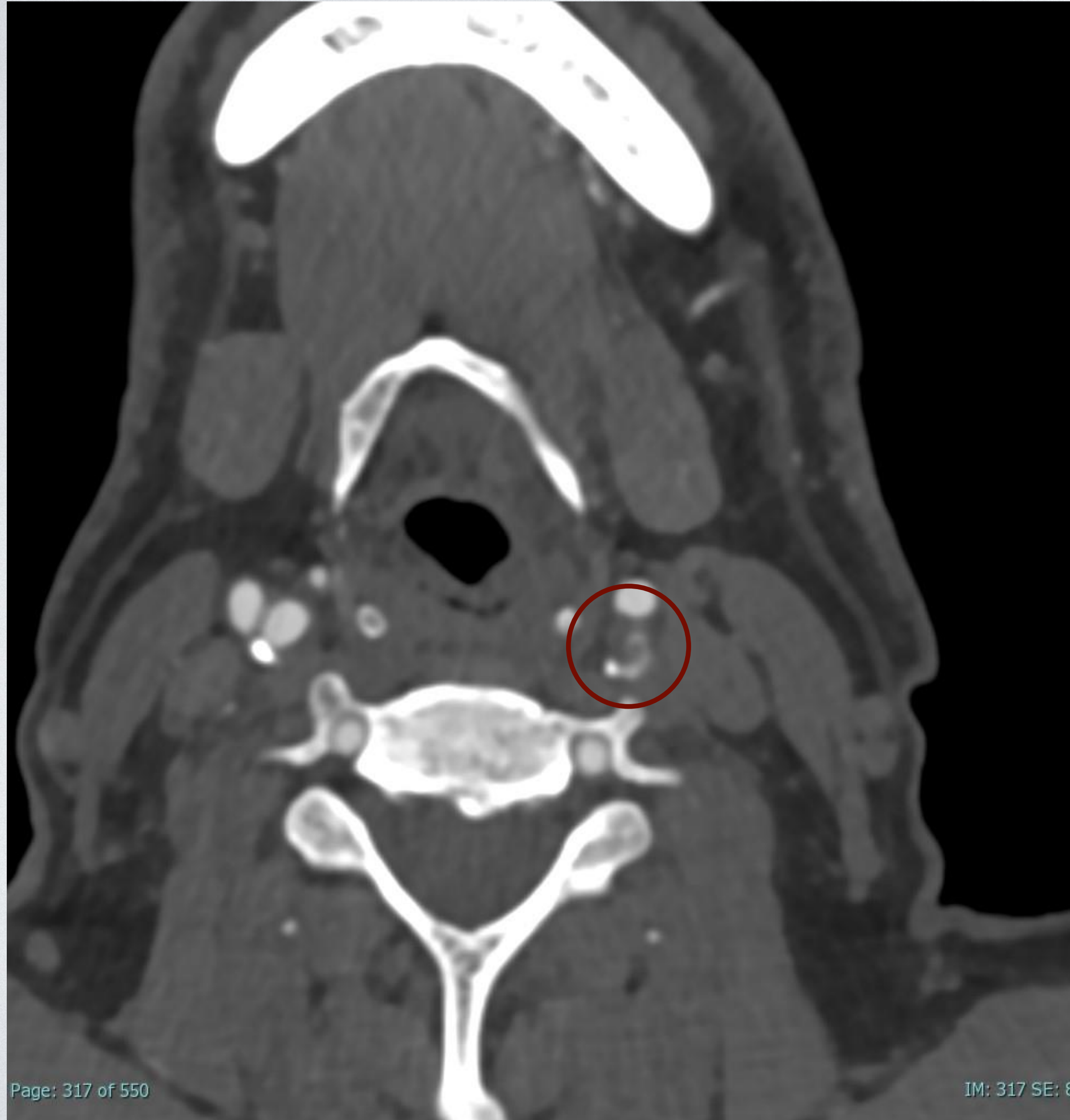
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IM: 5



CASE 3

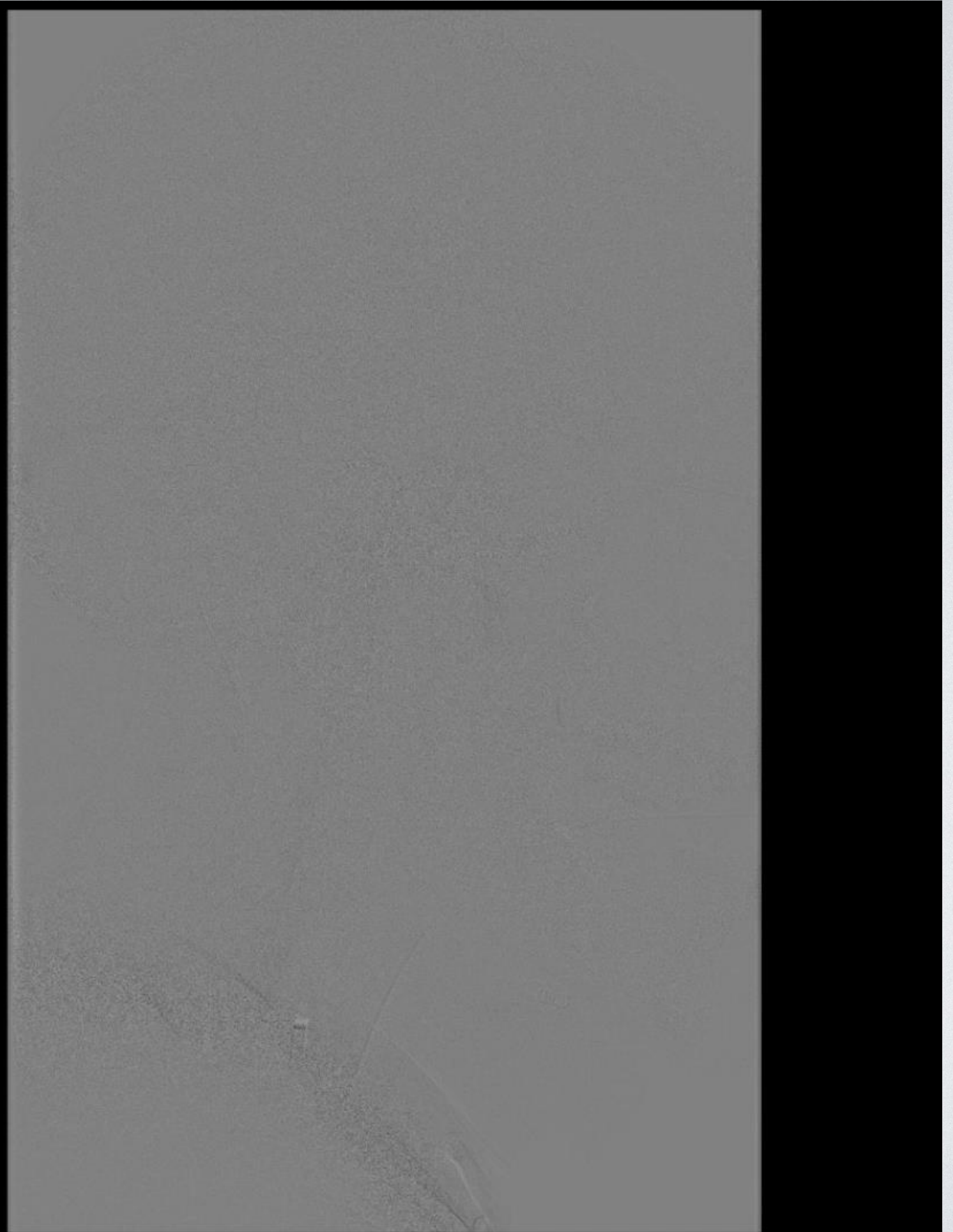
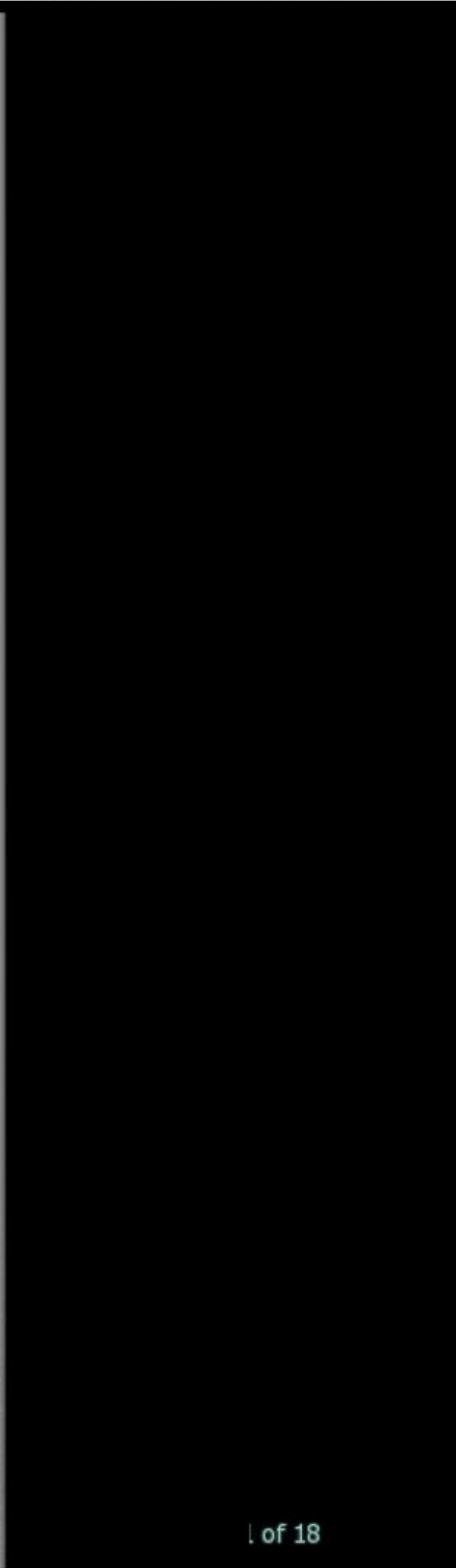
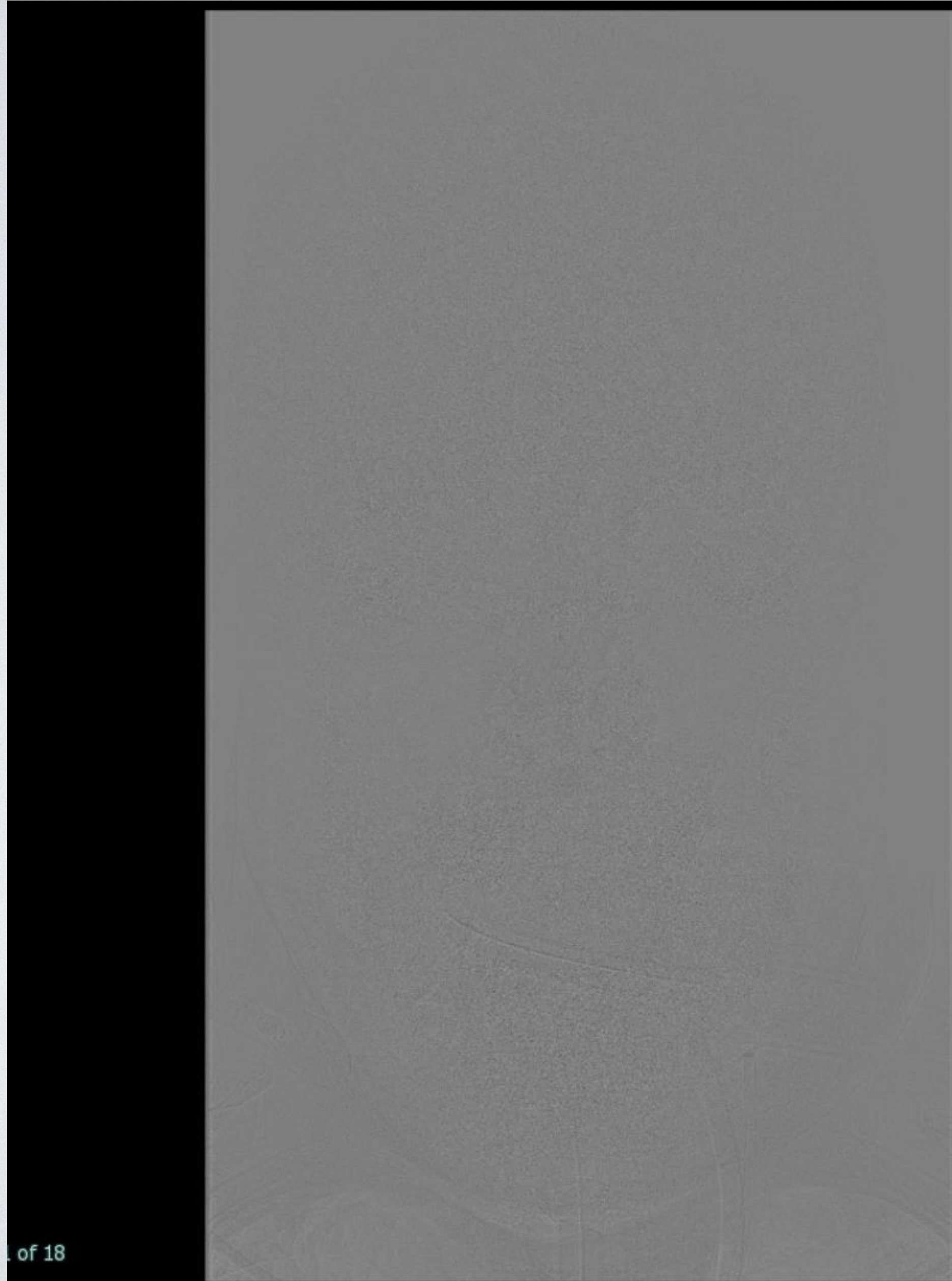


CASE 3

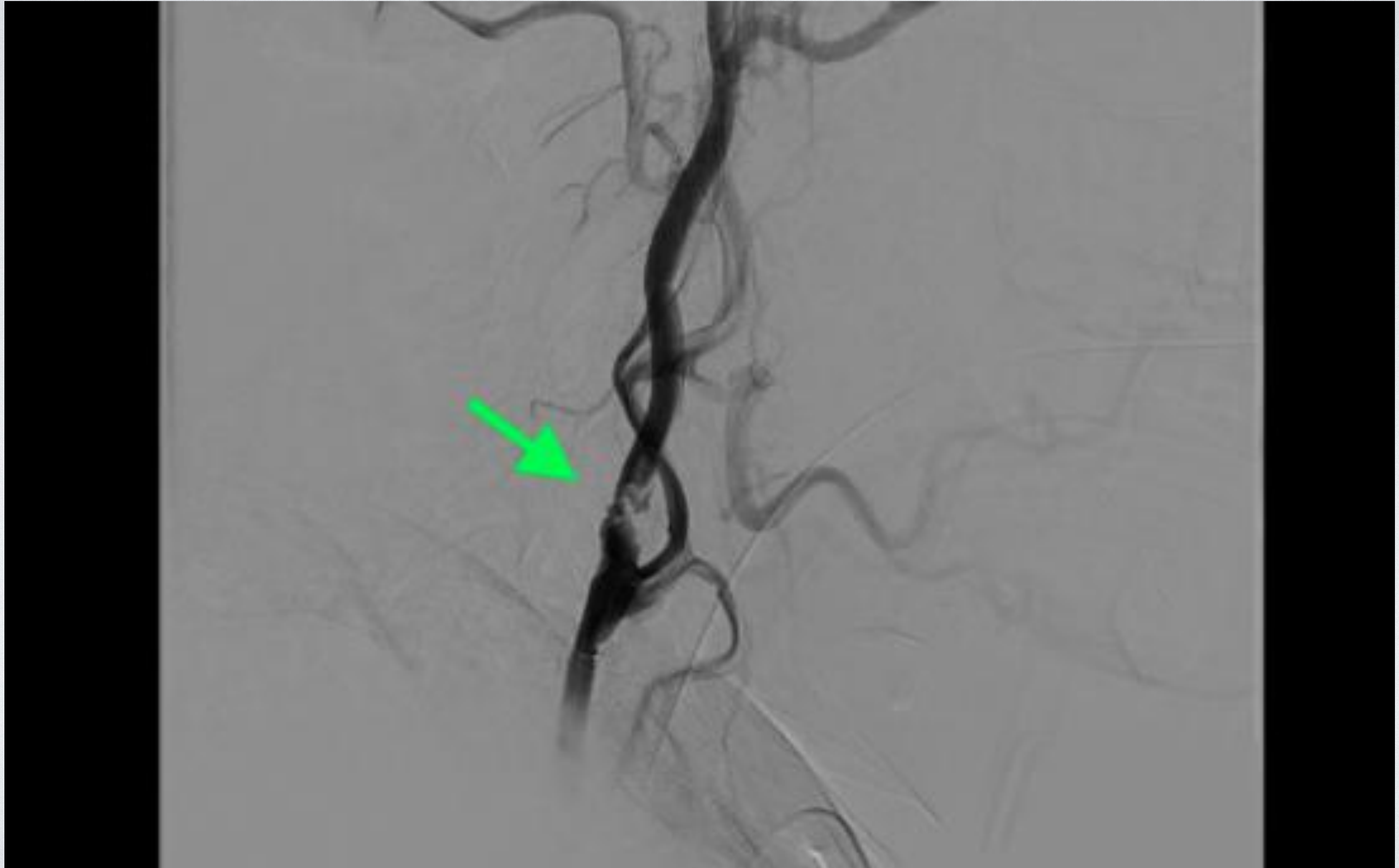




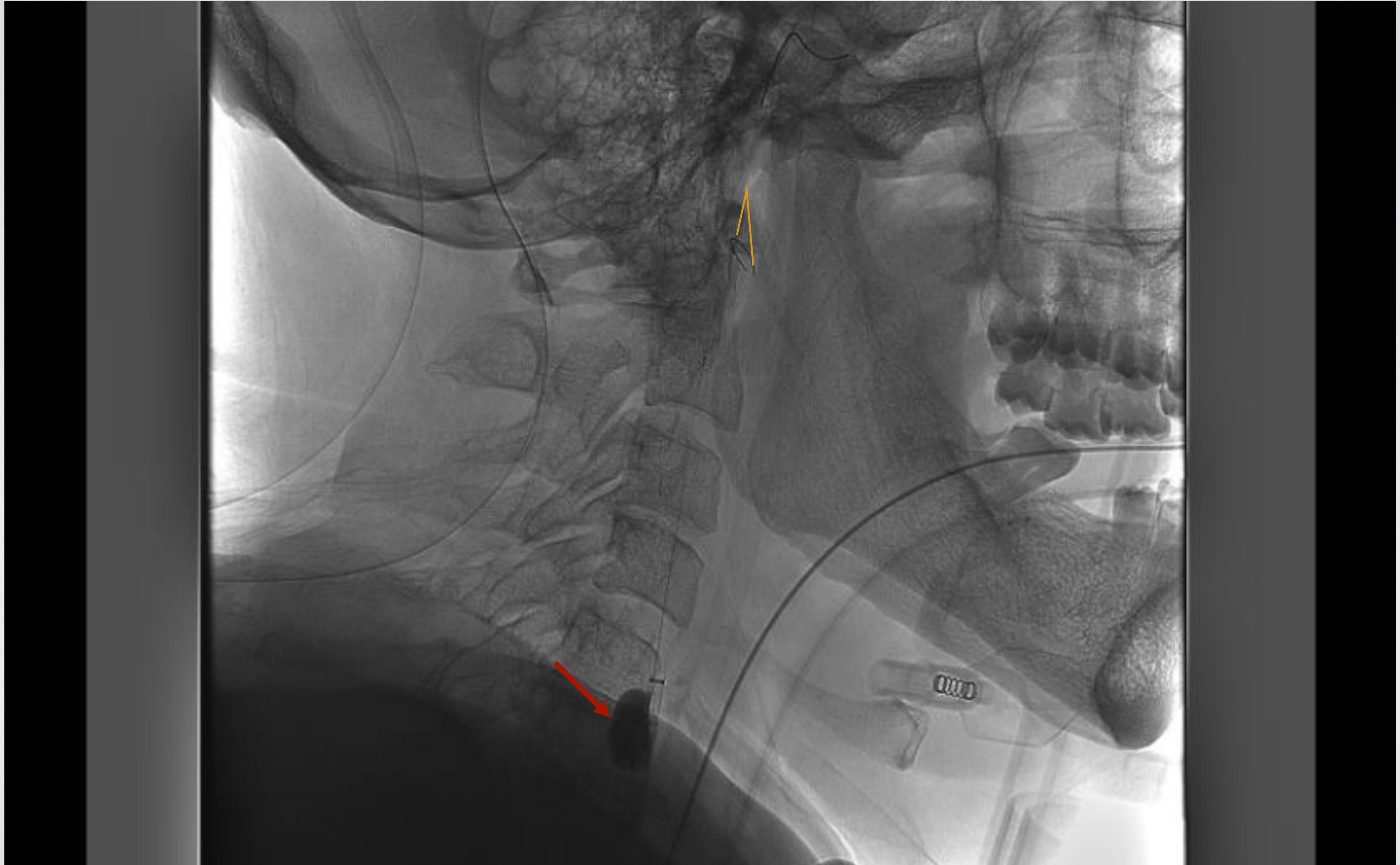
CASE 3



CASE 3



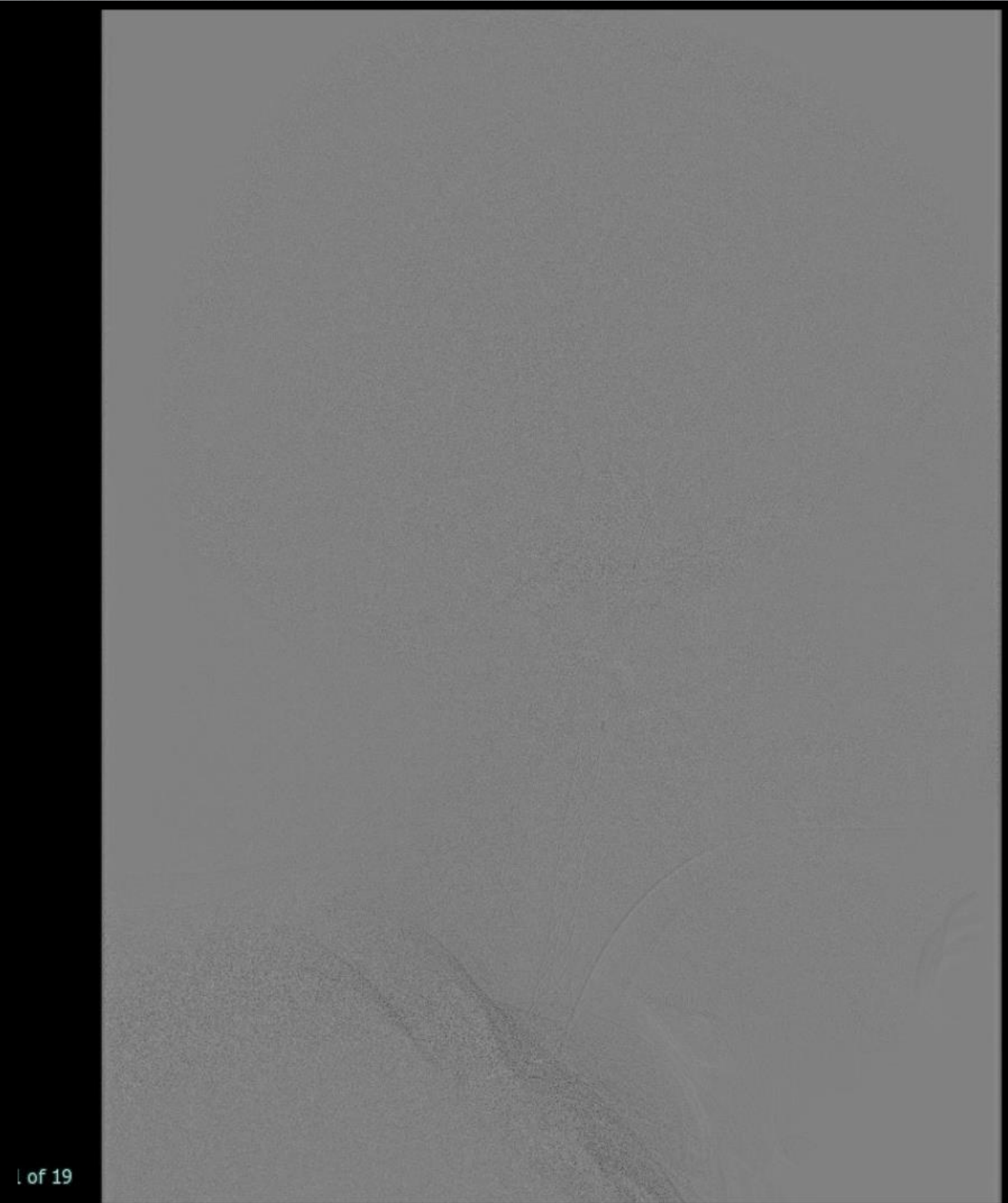
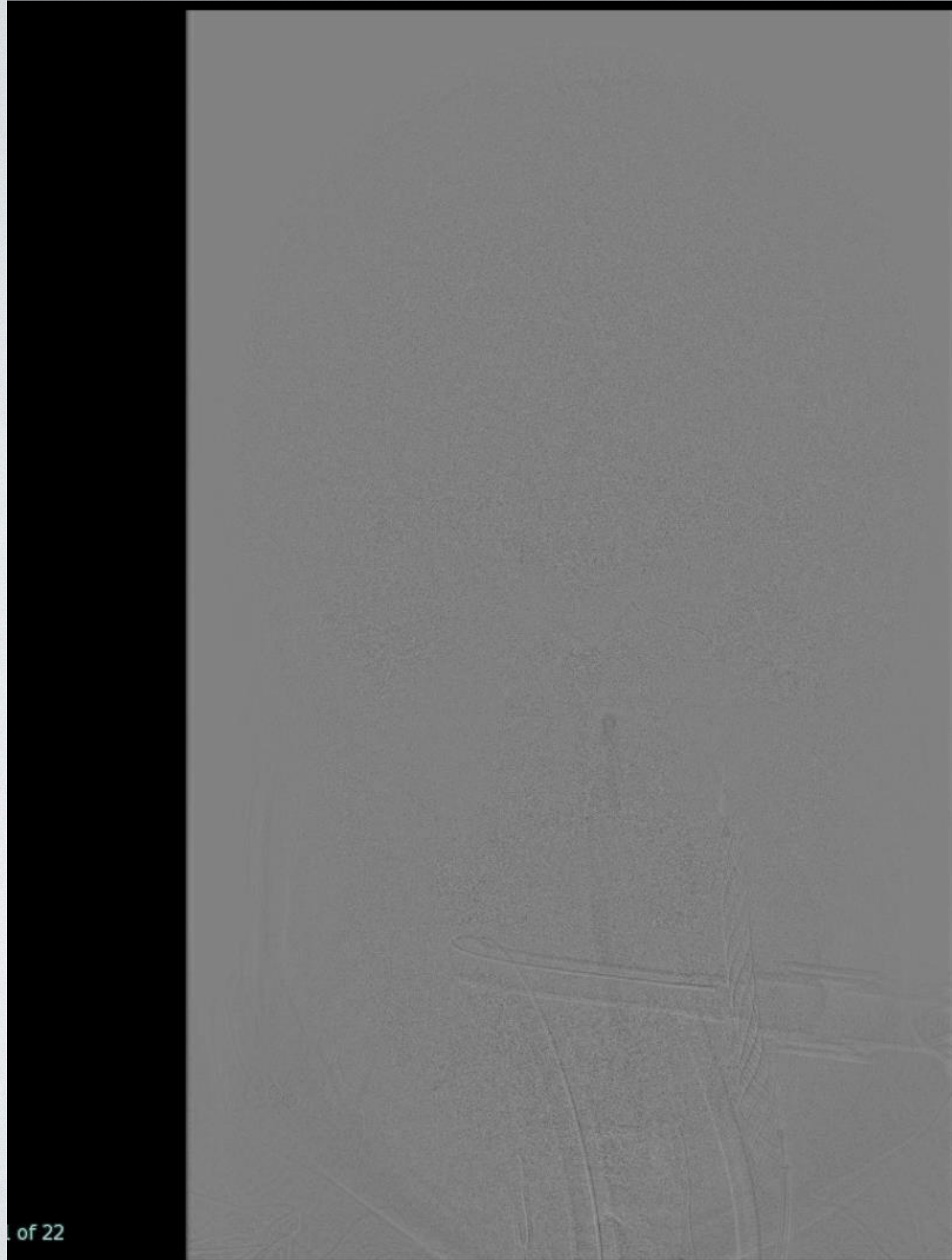
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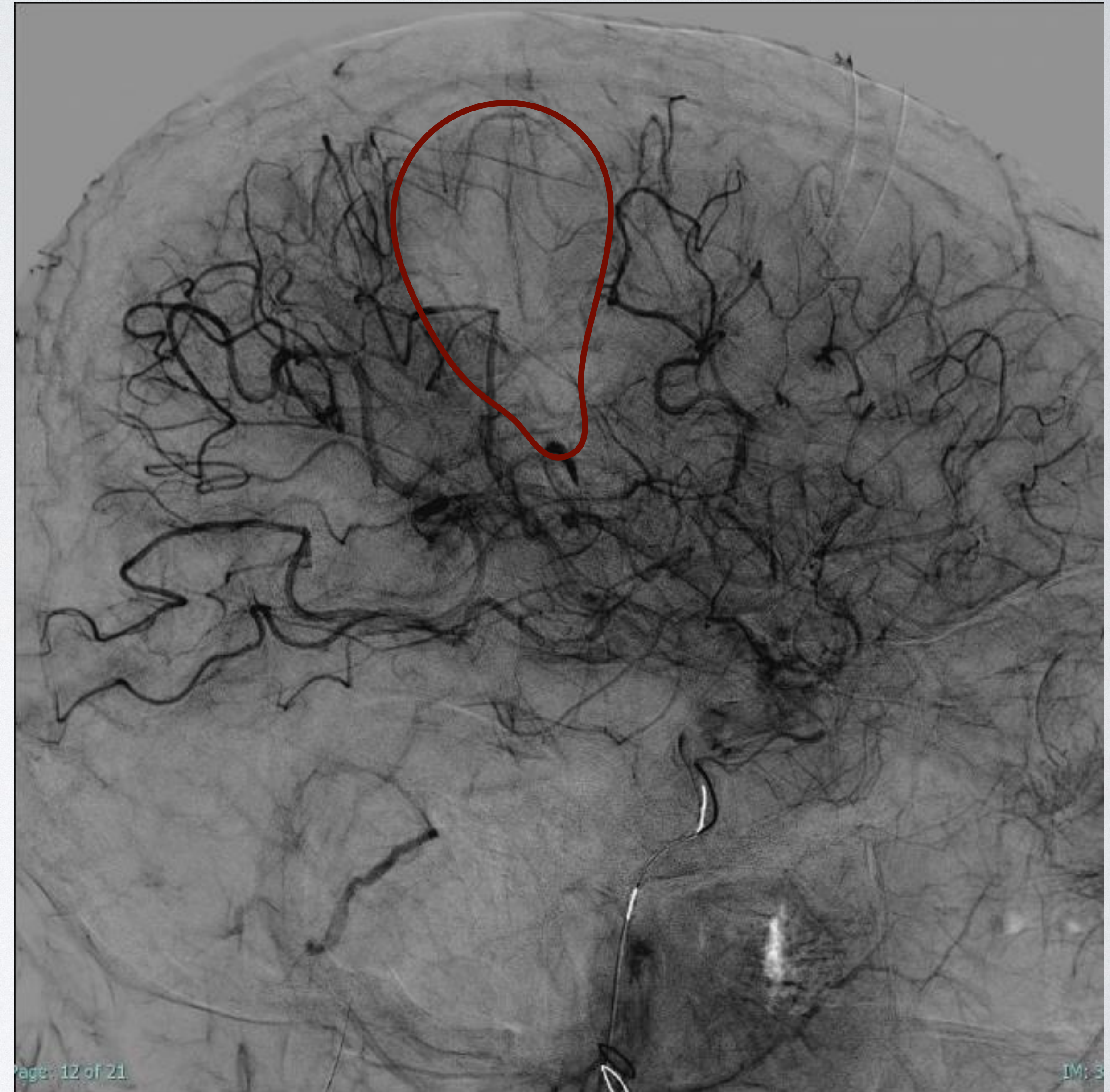
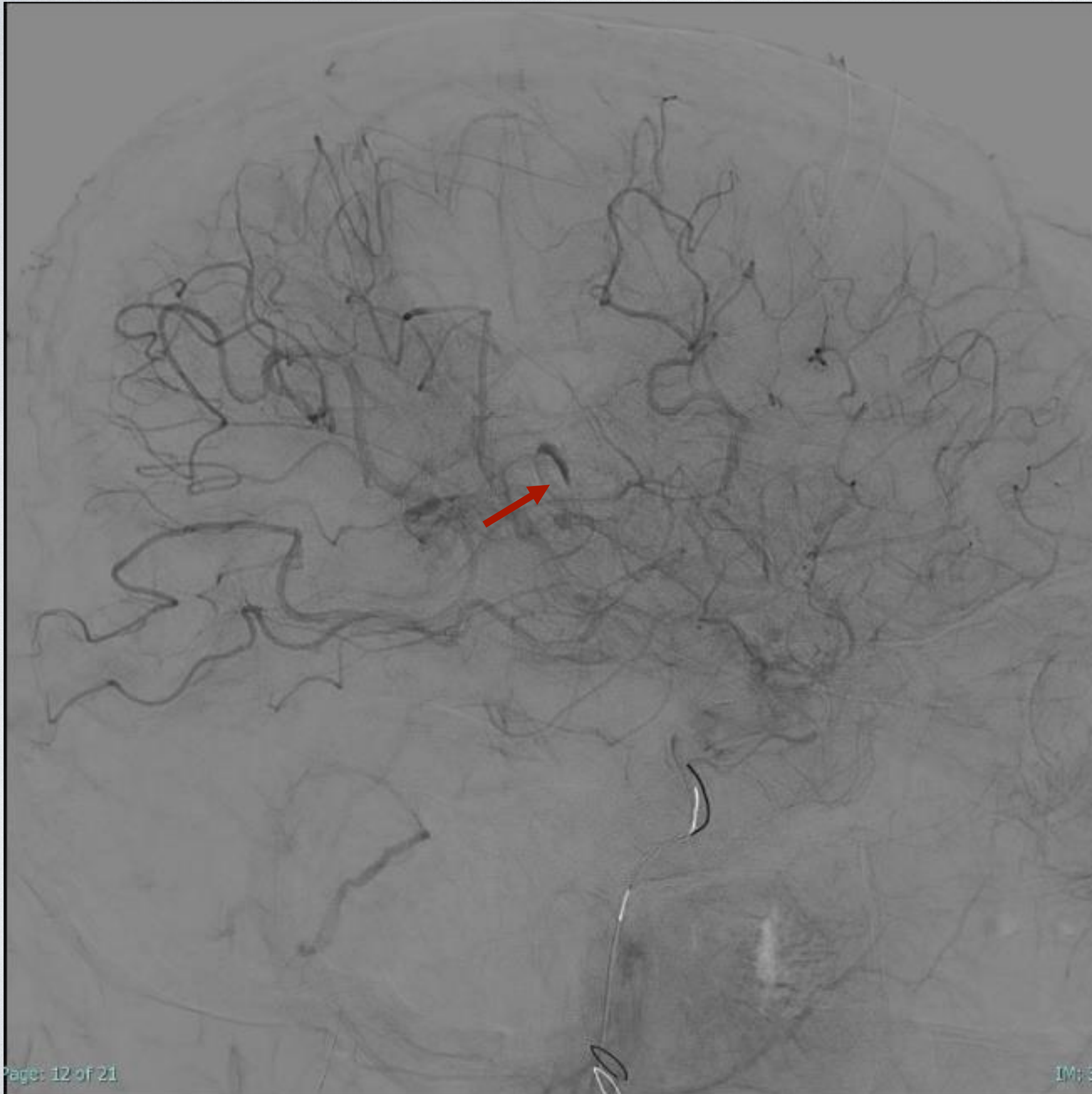
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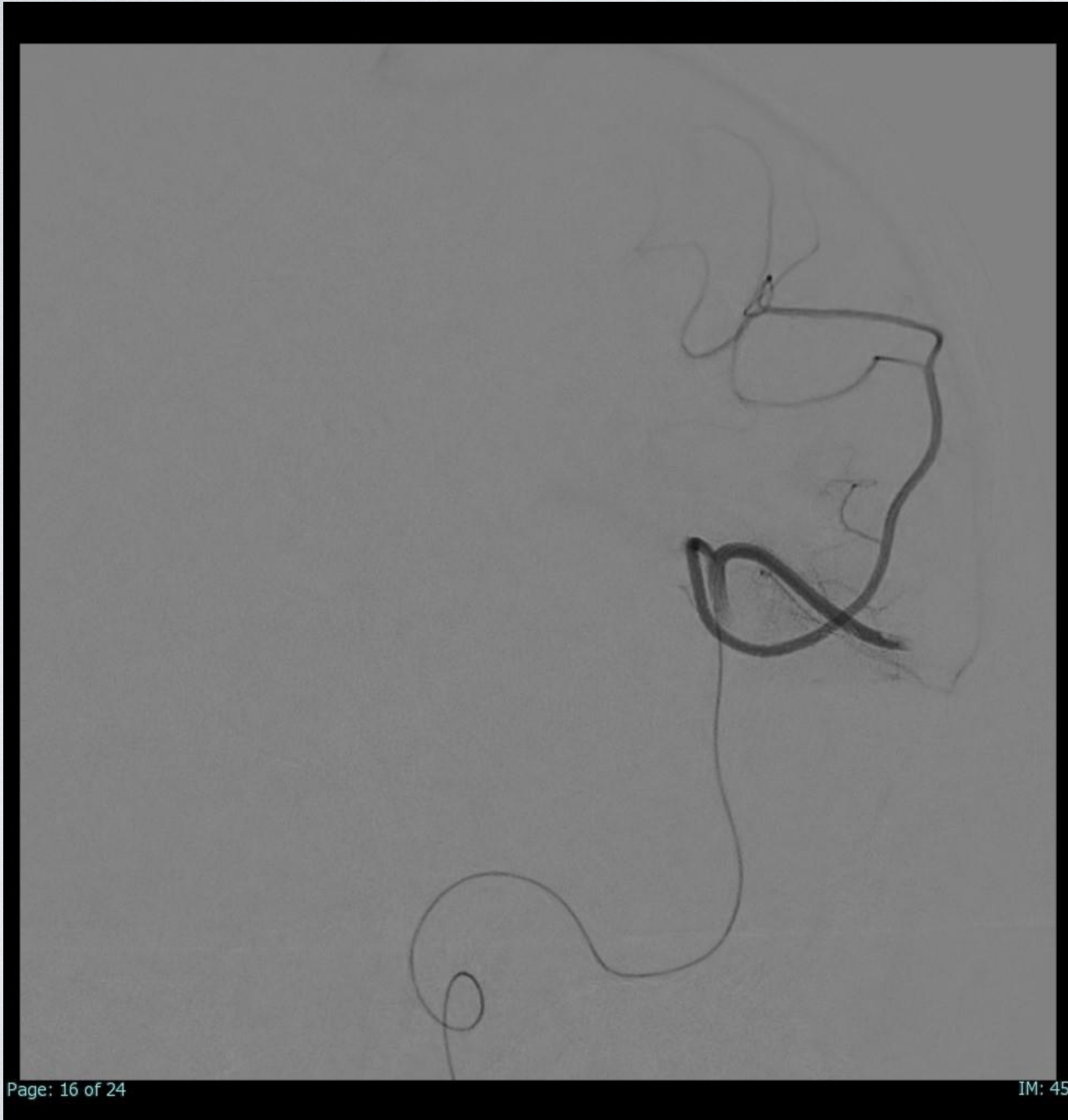
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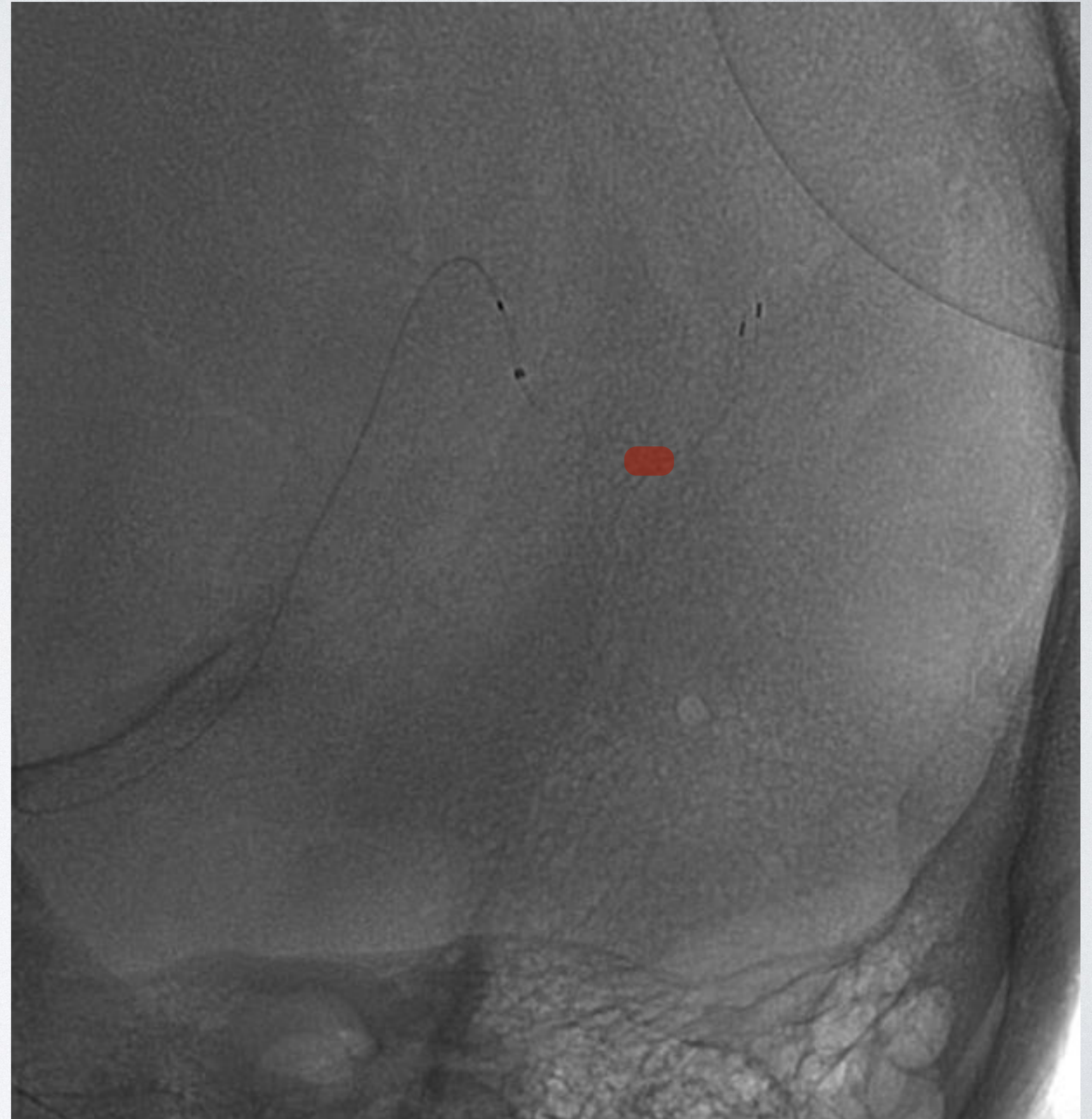
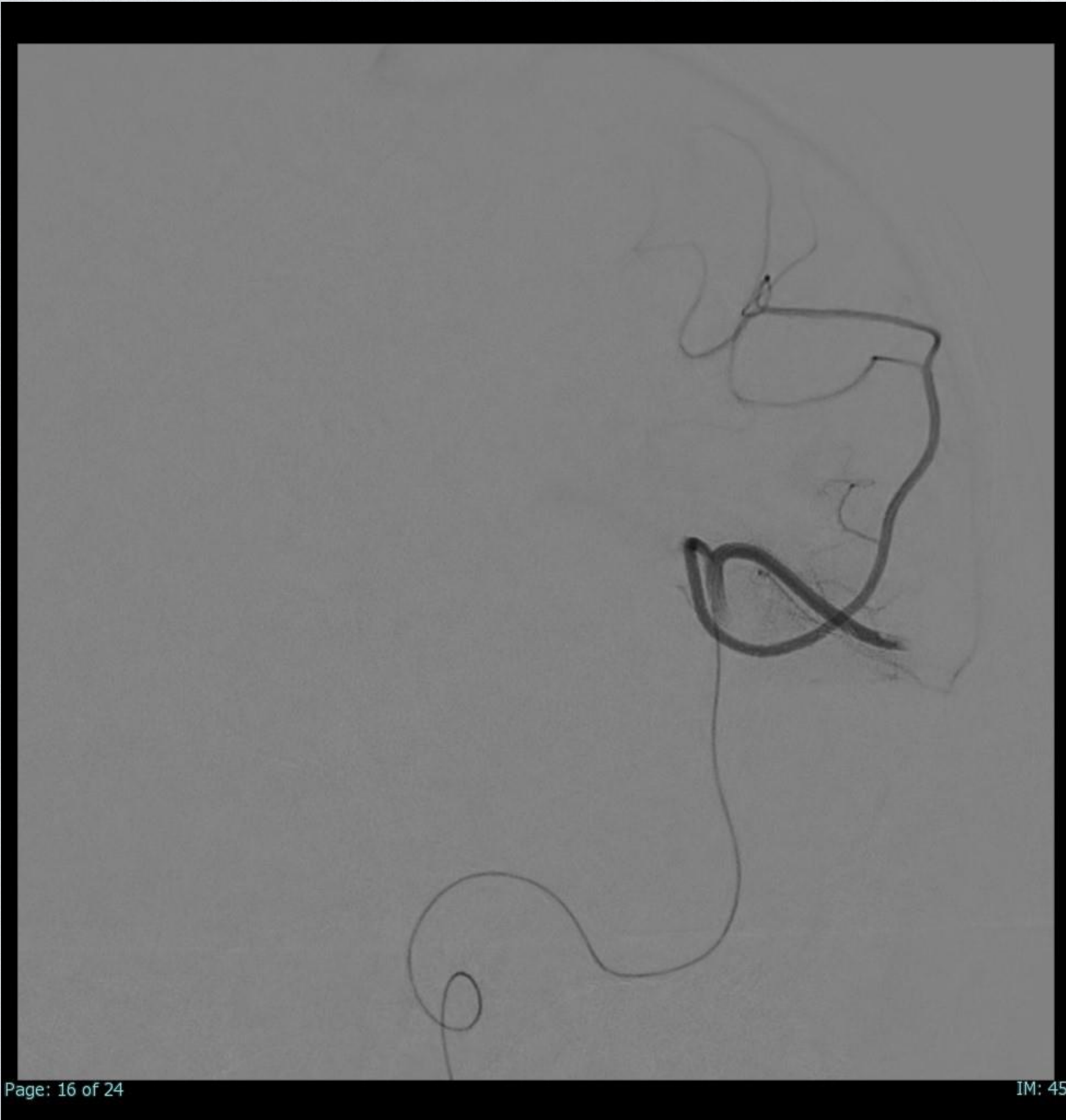
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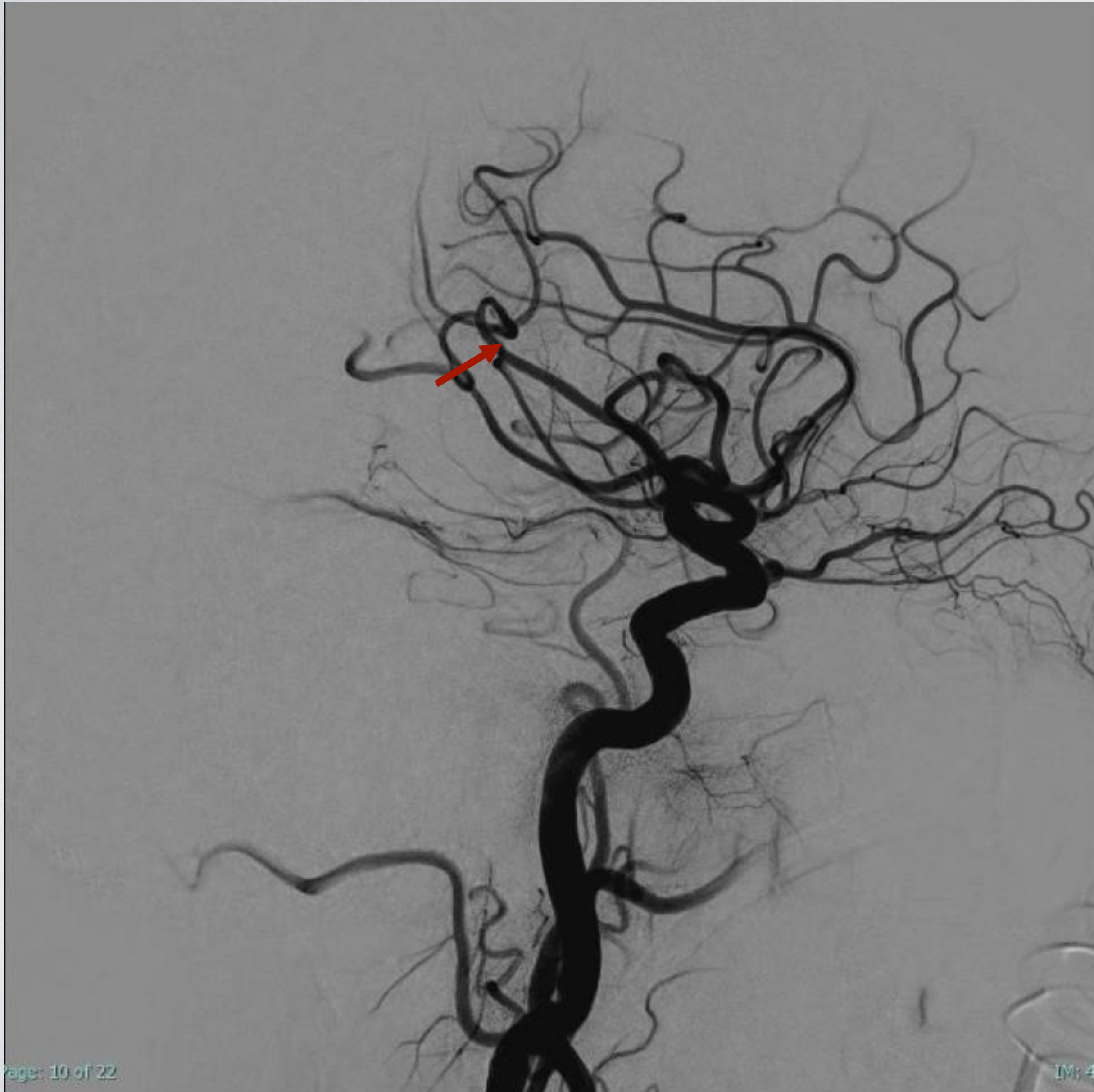






CASE 3





CASE 3

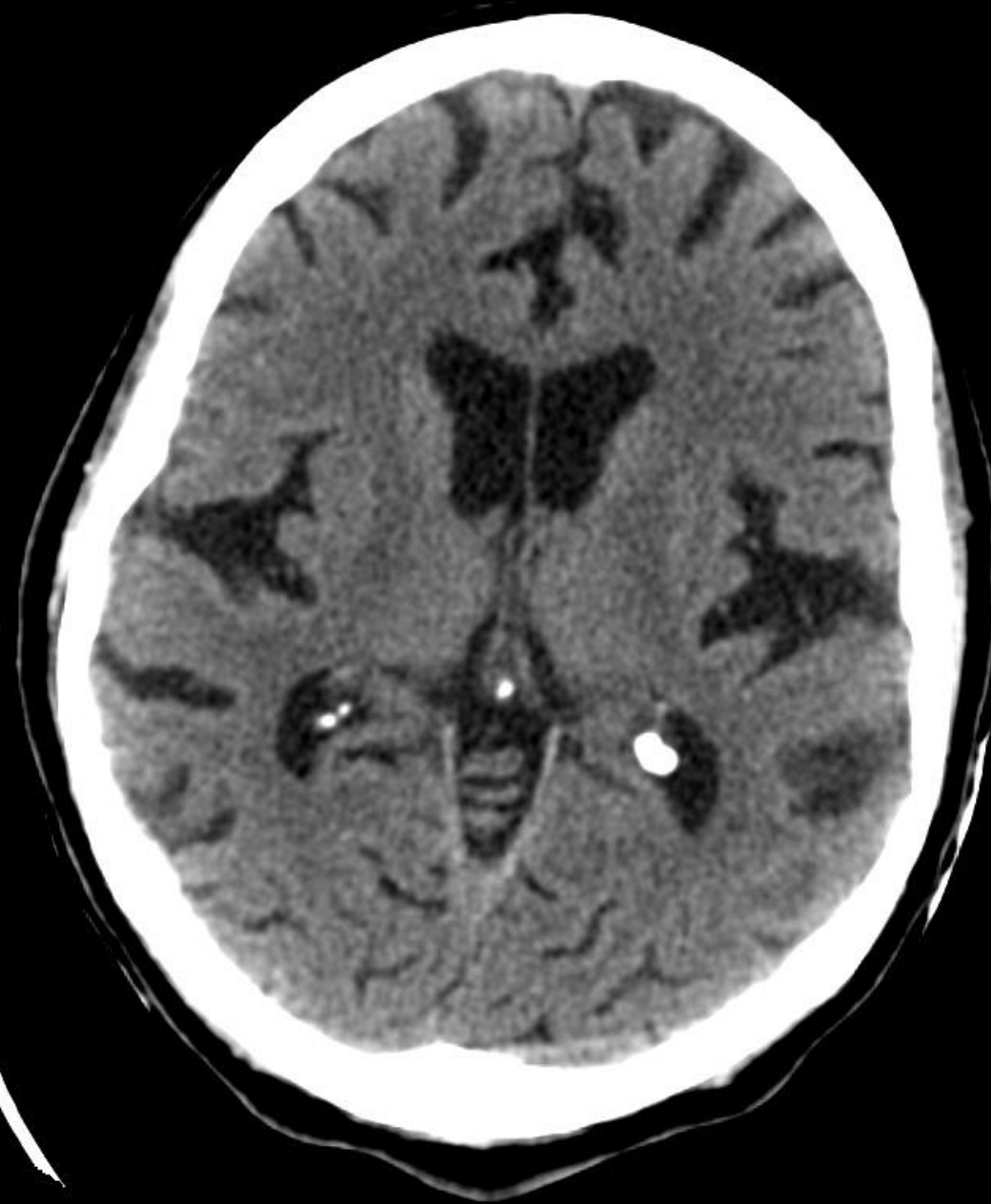


- Uomo, 86 anni
- APR: ex fumatore, iperteso, ipercolesterolemico, ipotiroidismo, portatore di pacemaker, FA parossistica di recente riscontro. In terapia con antipertensivi, statina, beta-bloccante, ASA.
- Esordio dei sintomi 1 ora prima.
- All'EON NIHSS 9, per disartria e paresi emisoma sinistro.

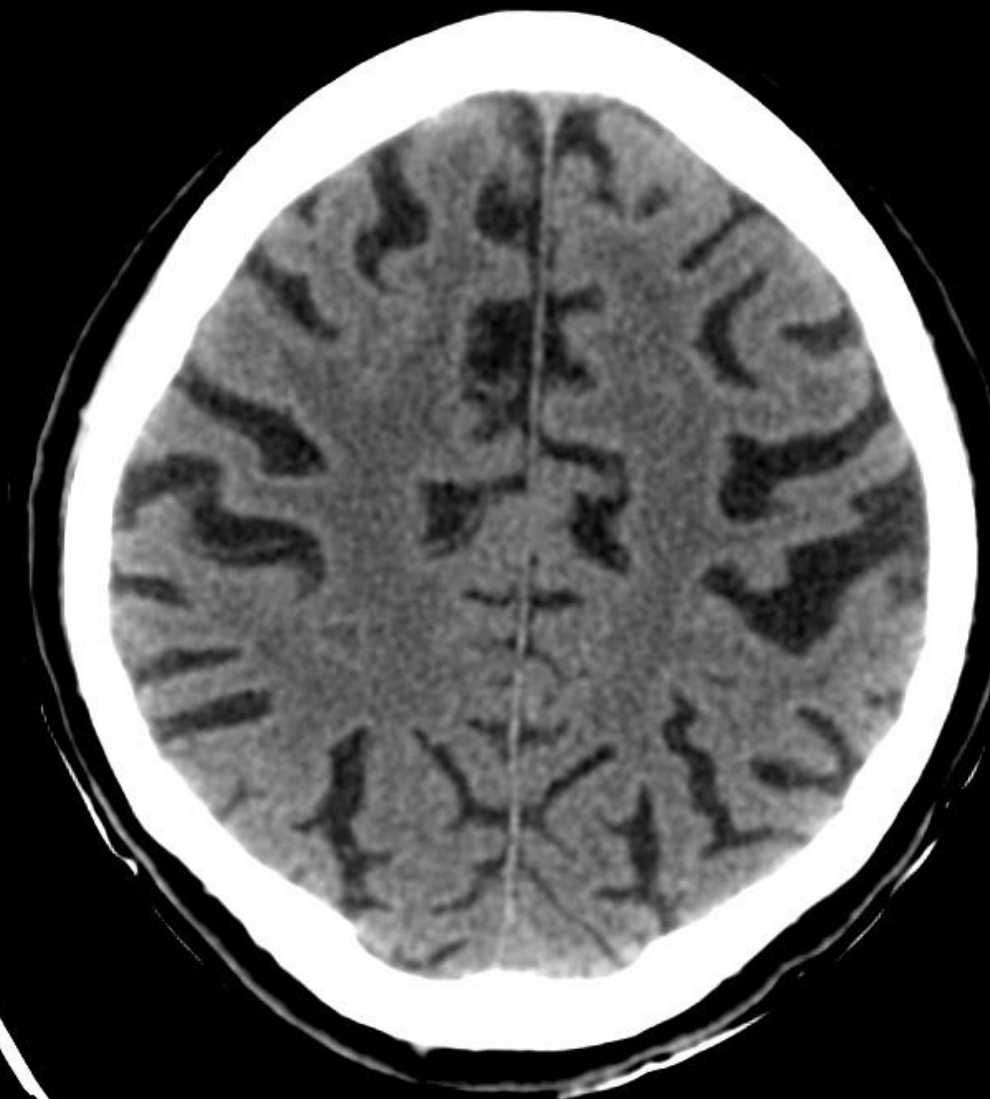
CASE 4



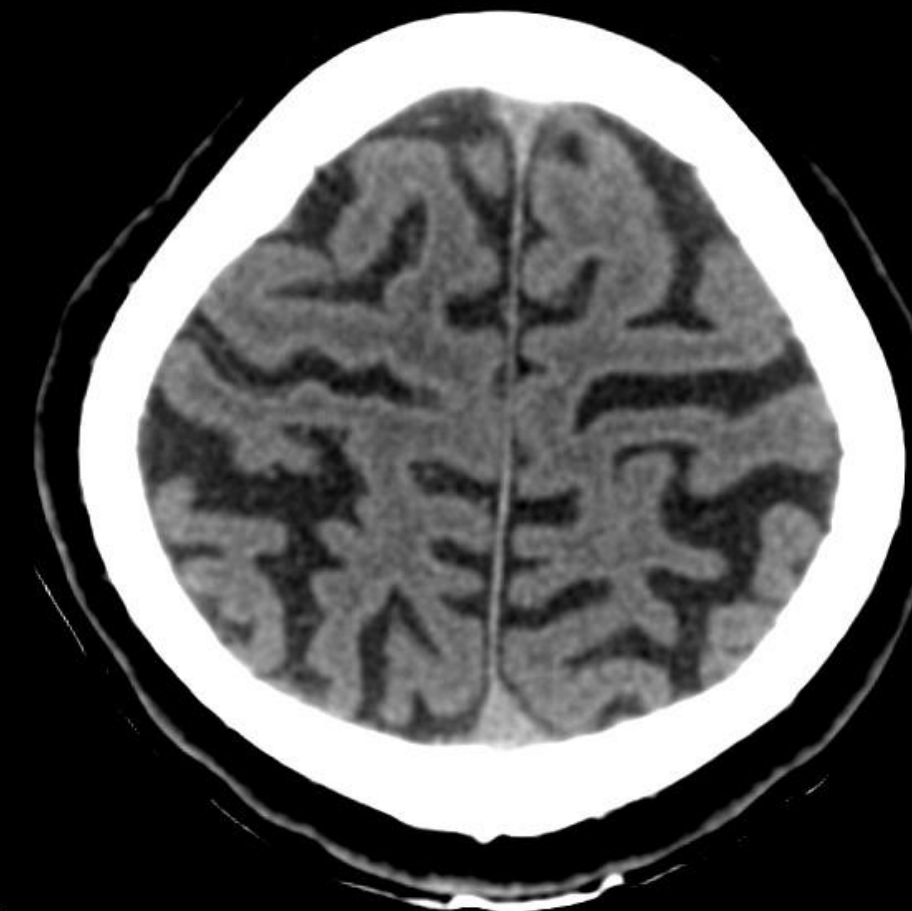
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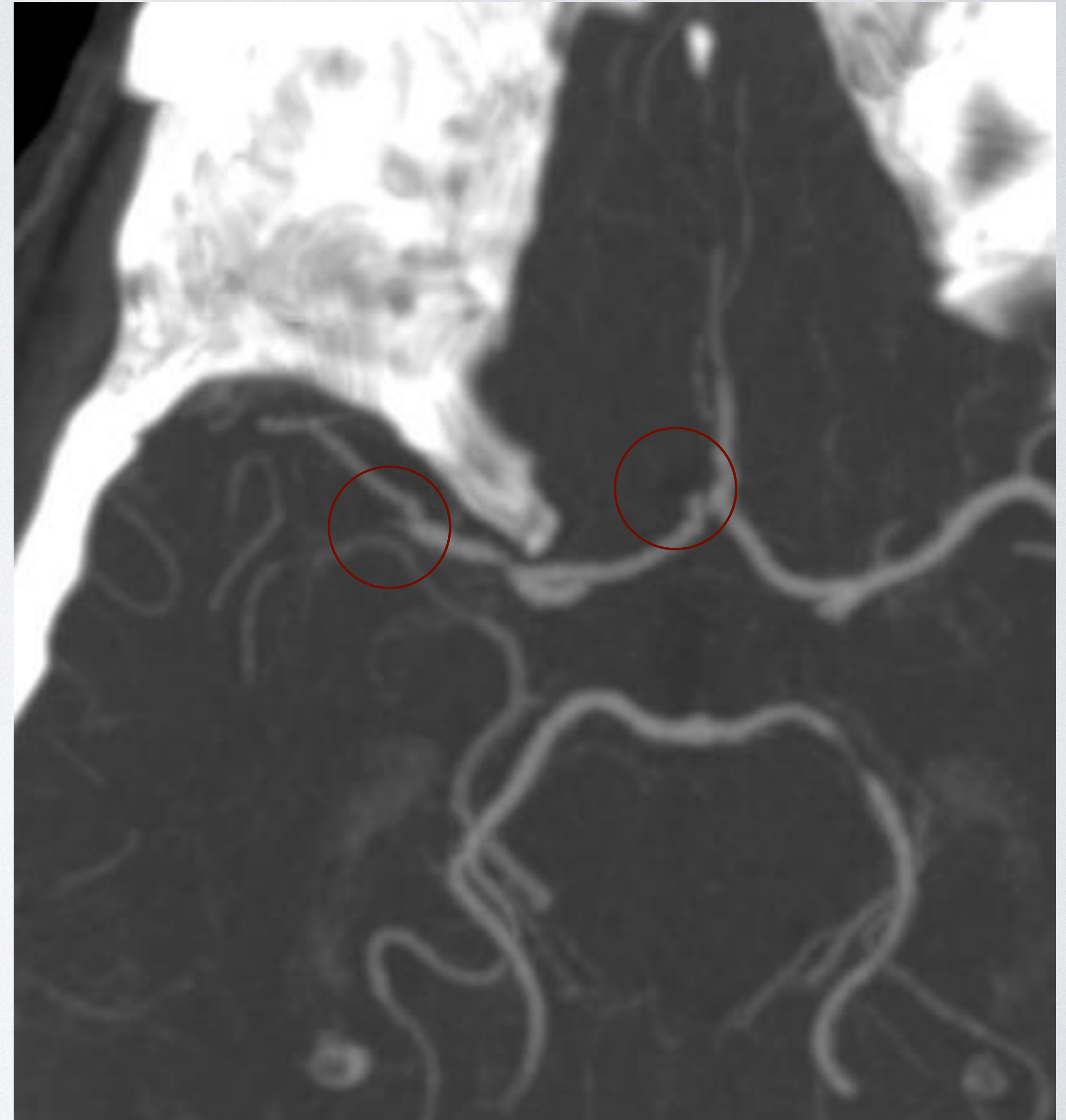
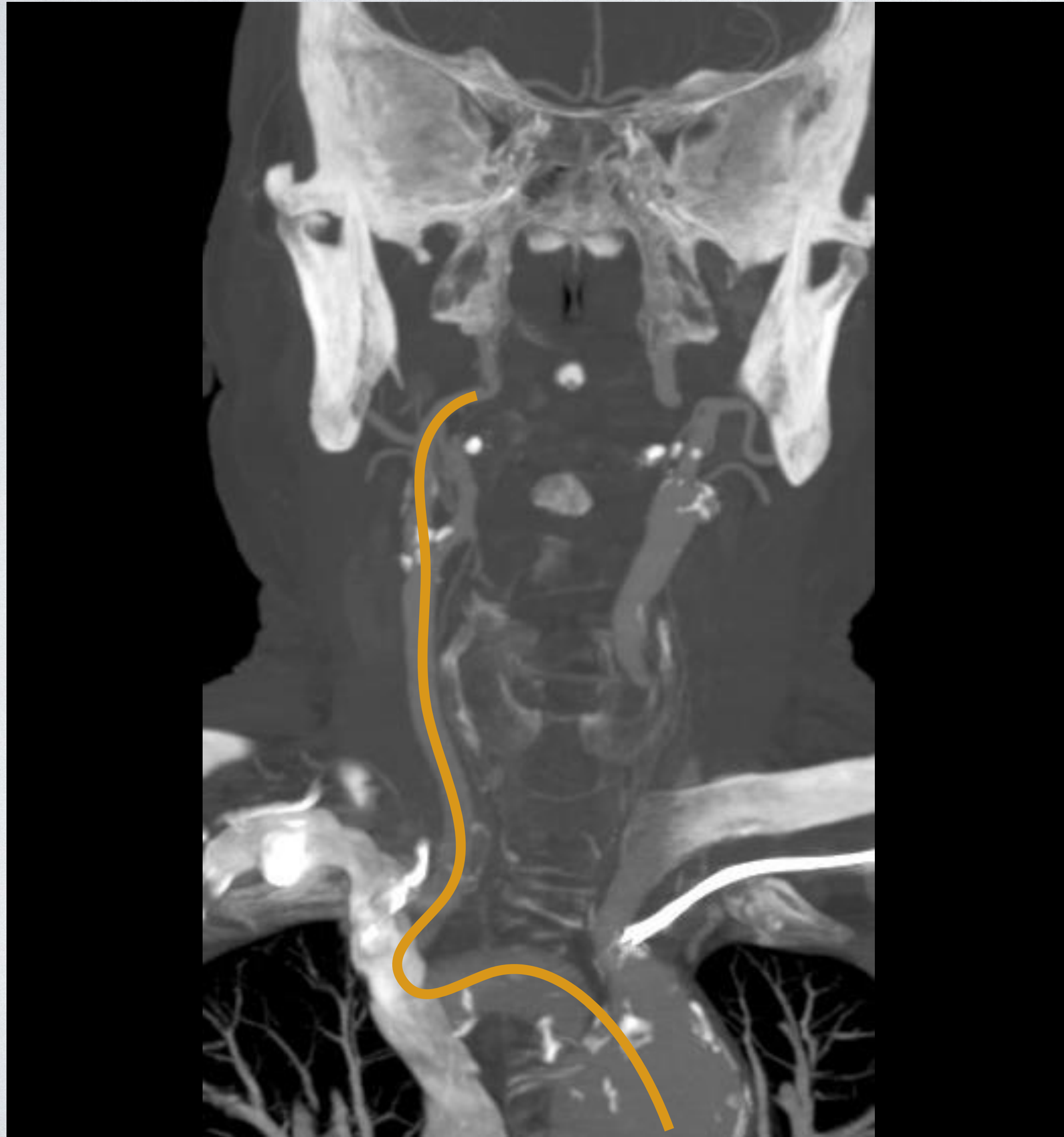


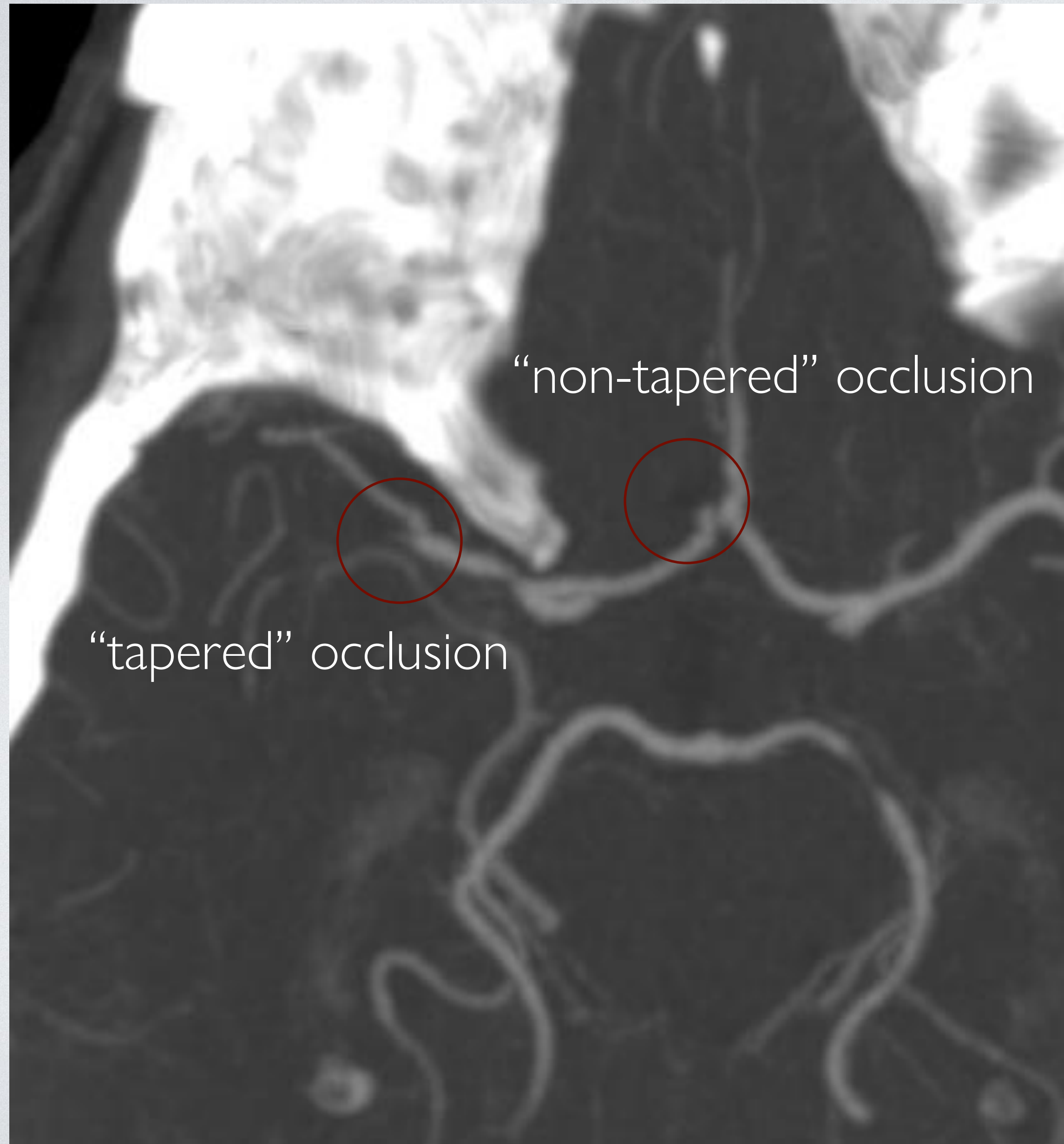
Page: 48 of 60



cm

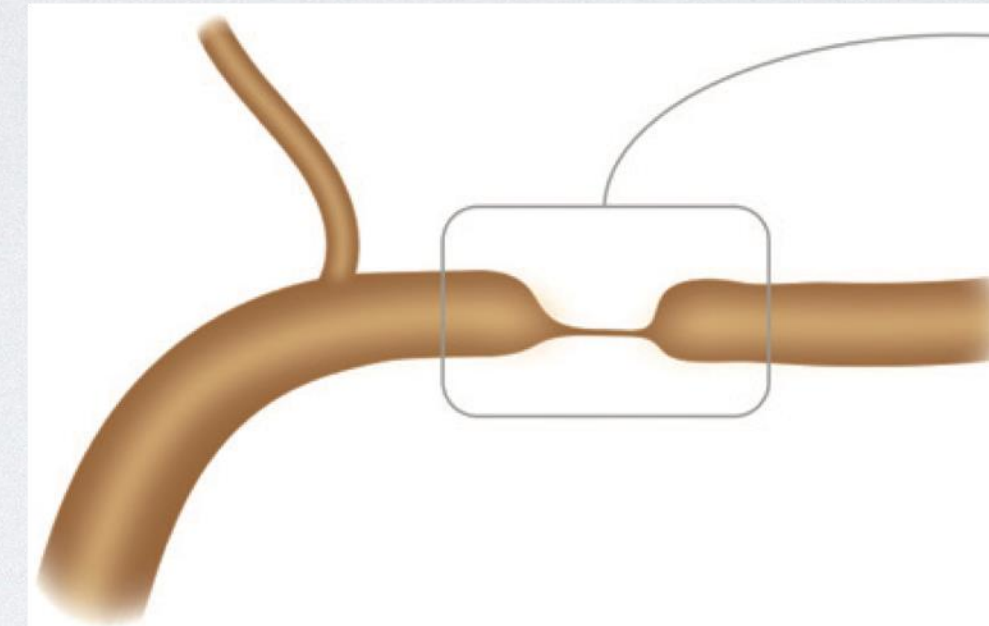
CASE 4



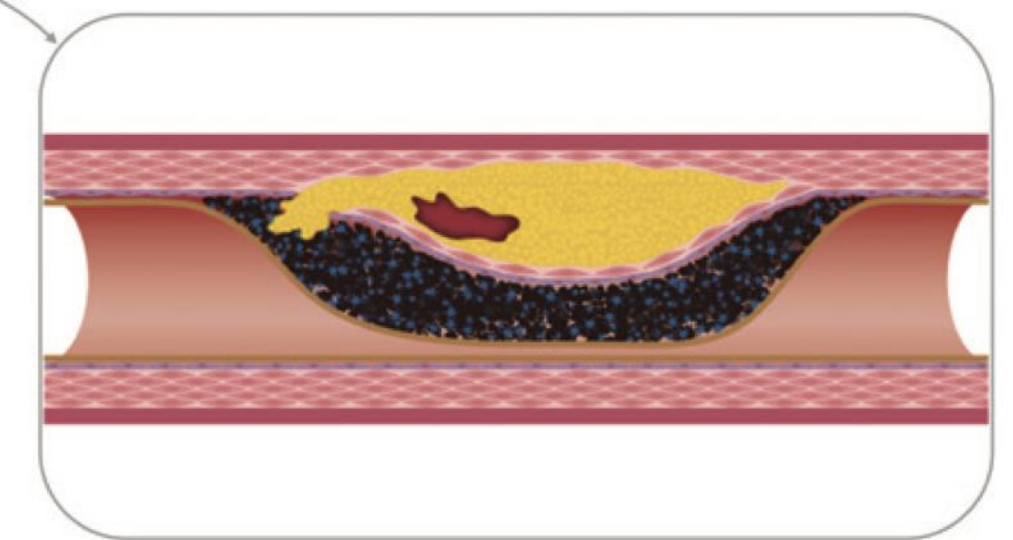


Intracranial atherosclerotic stenosis
as an angiographical term

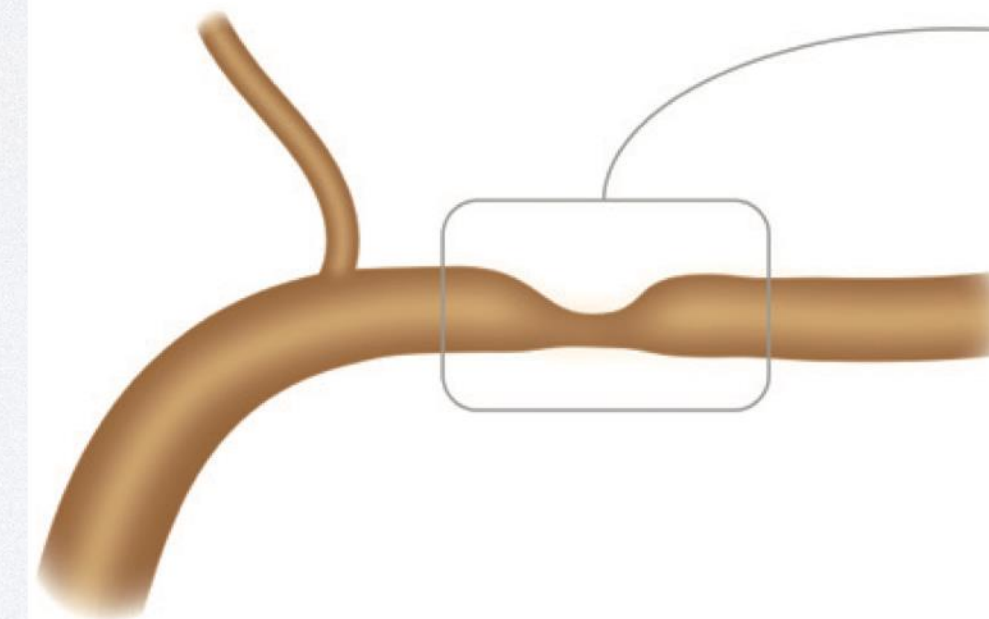
Intracranial atherosclerotic disease
as a pathophysiological term



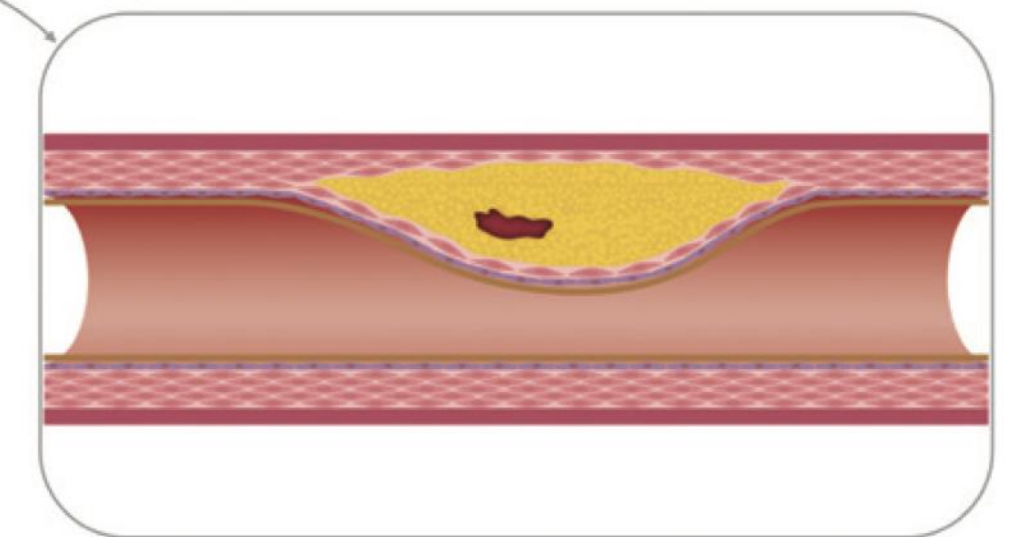
A severe stenosis



In situ thrombosis beyond stenosis



A moderate stenosis



Remaining stenosis after treatment

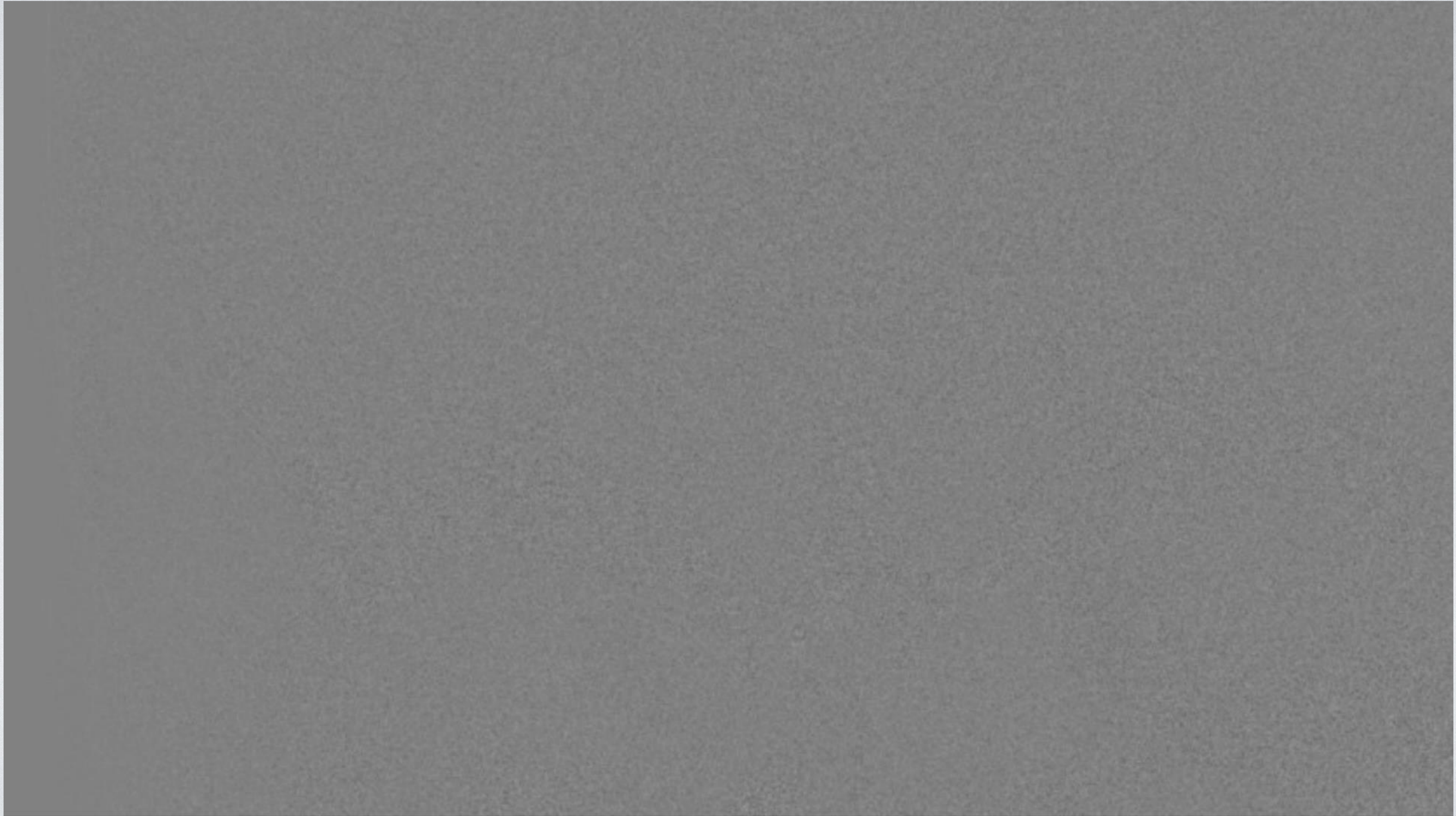
A

B

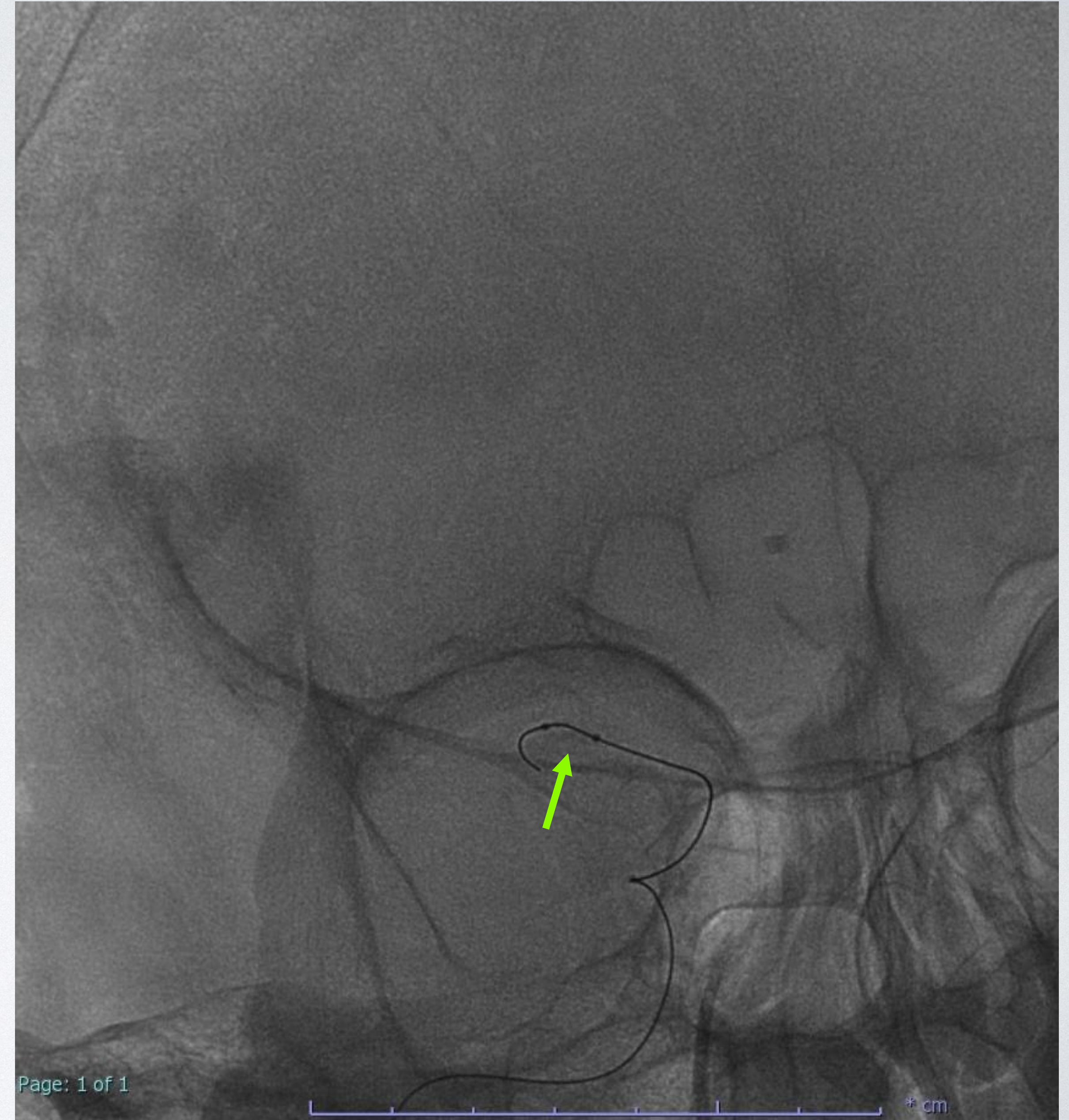
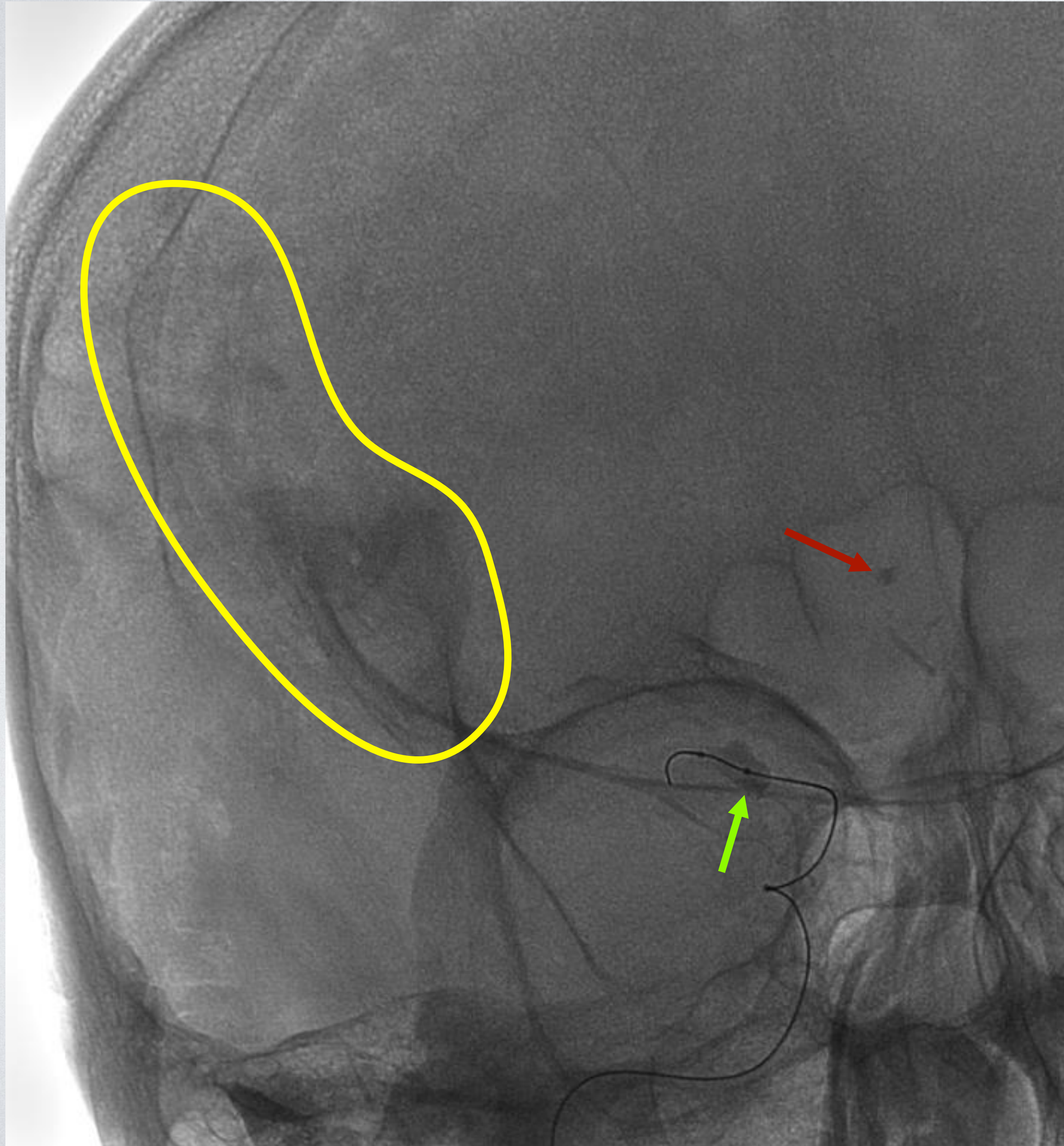
CASE 4



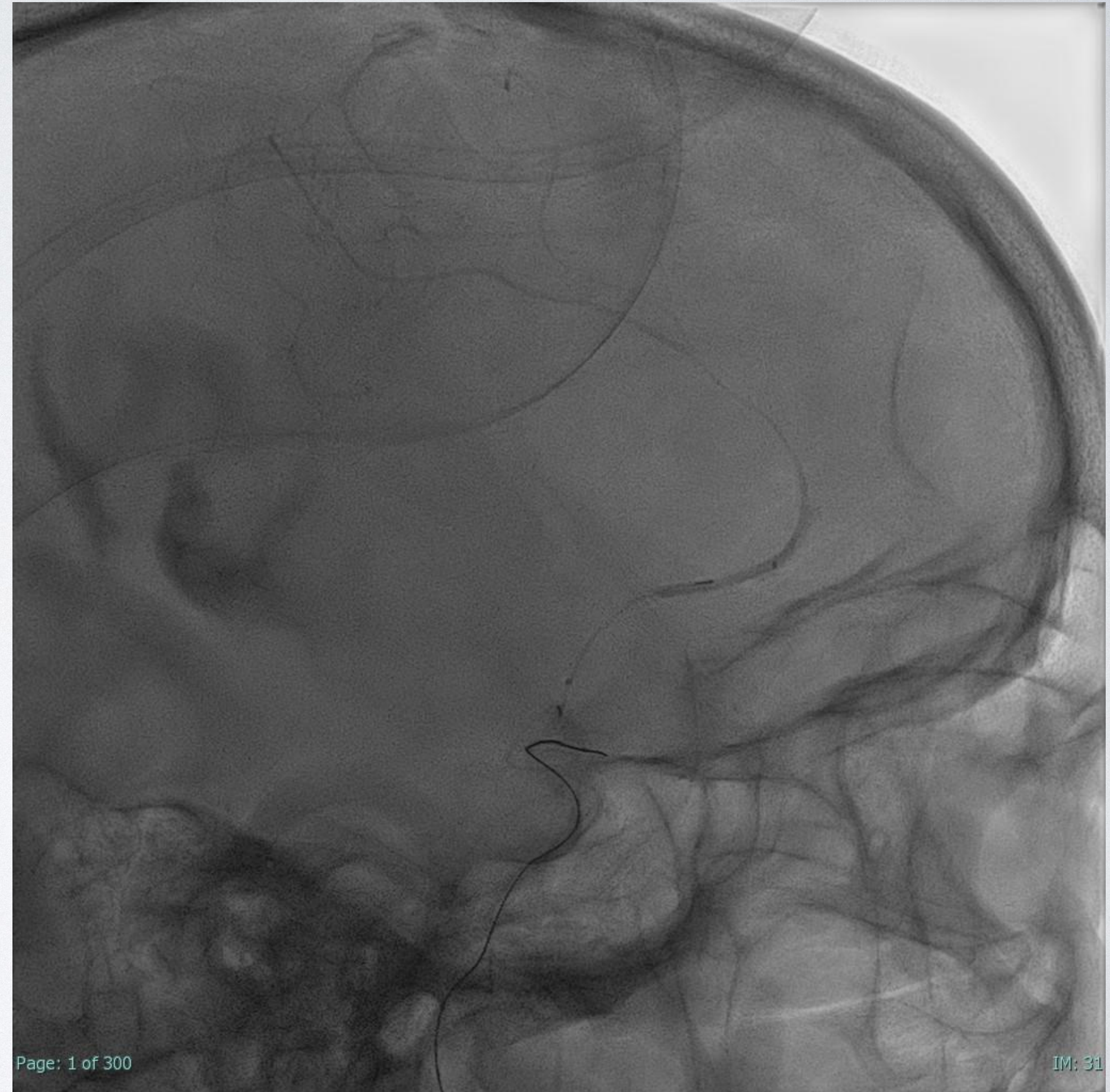
CASE 4



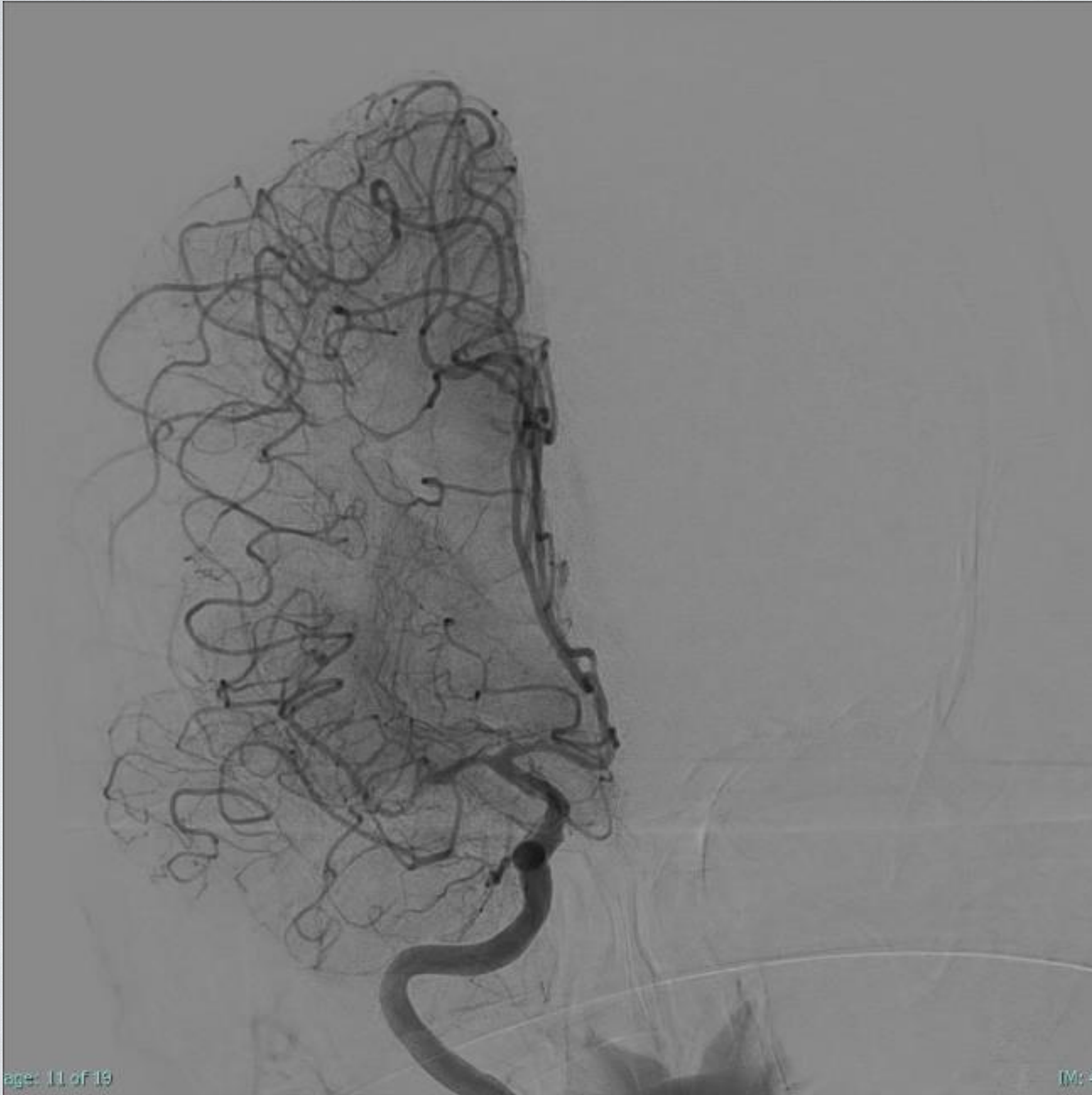
CASE 4



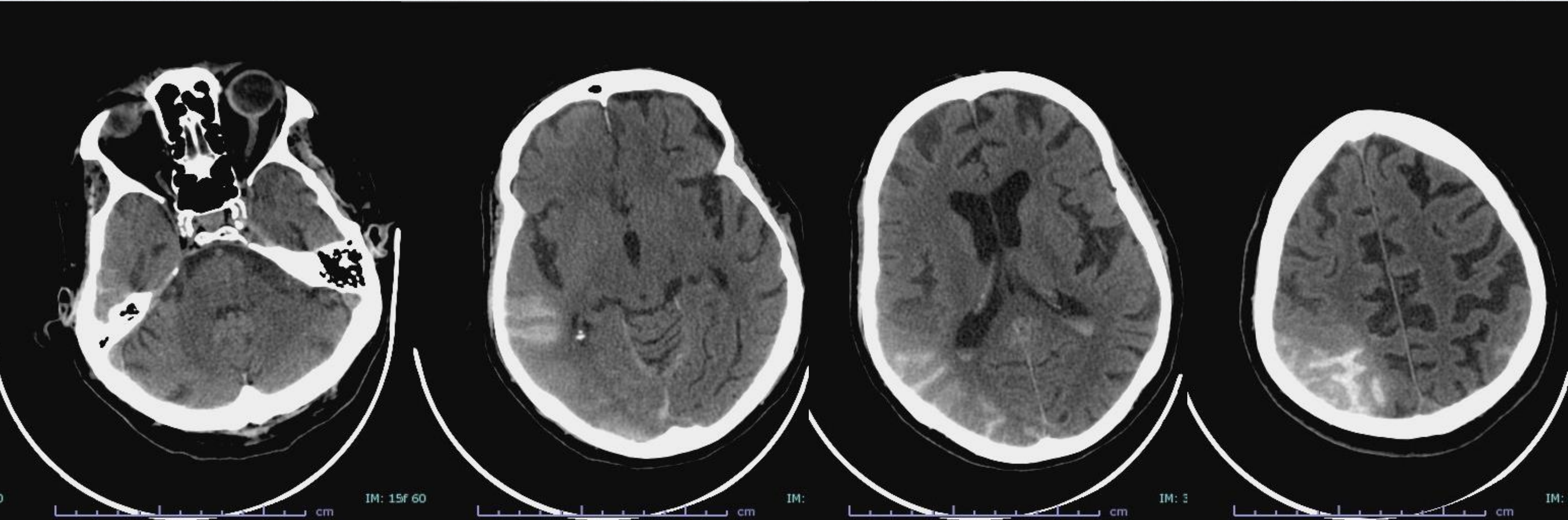
CASE 4



CASE 4

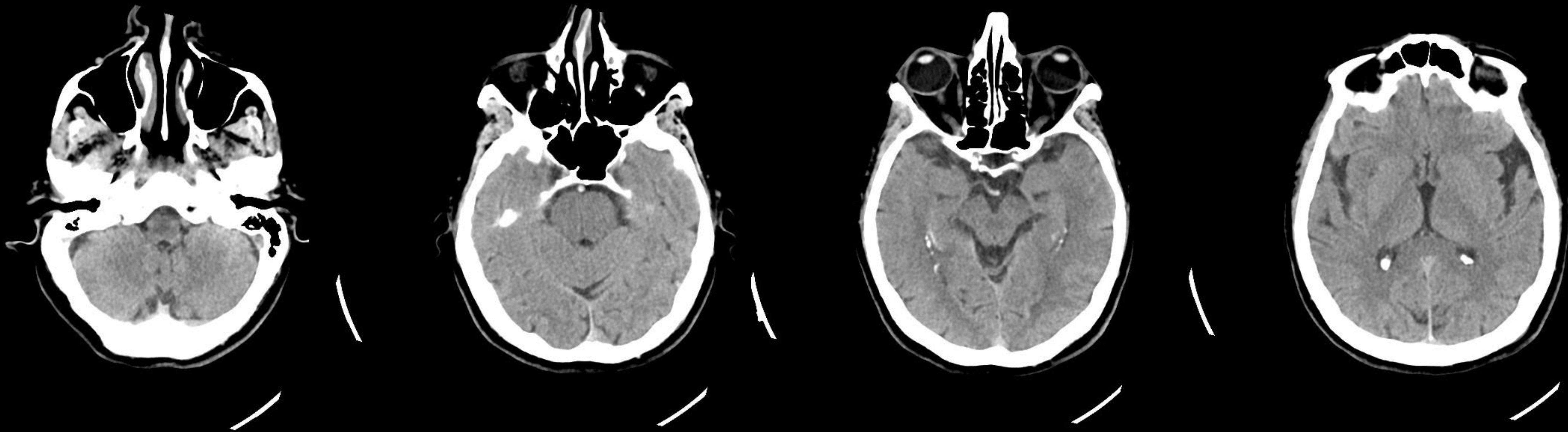


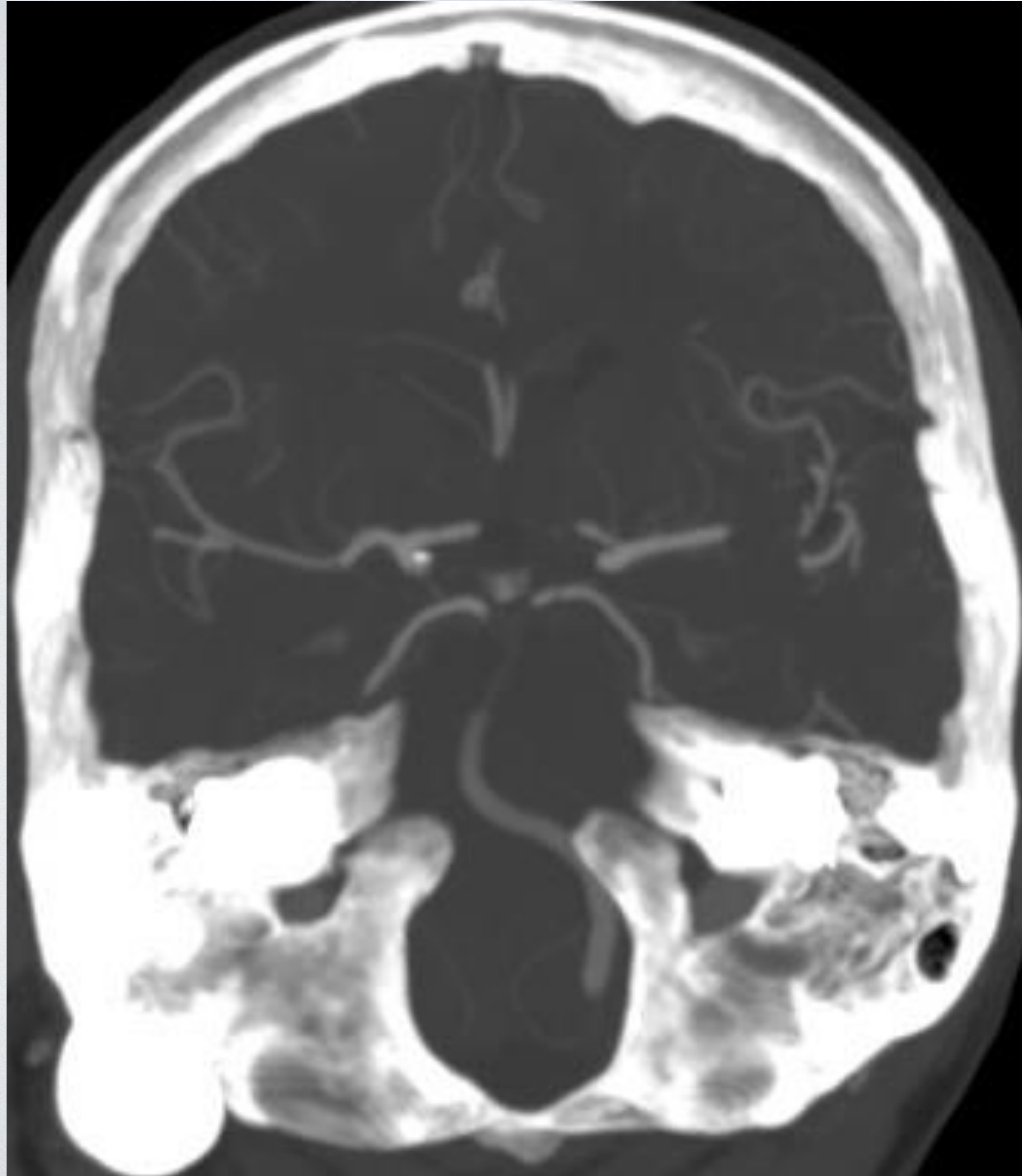
CASE 4



- Donna, 71 anni
- APR: ipertesa, ipotiroidismo, dislipidemia. In terapia con antipertensivi, beta-bloccanti, statina.
- Esordio dei sintomi 1 ora prima.
- All'EON GCS 5.

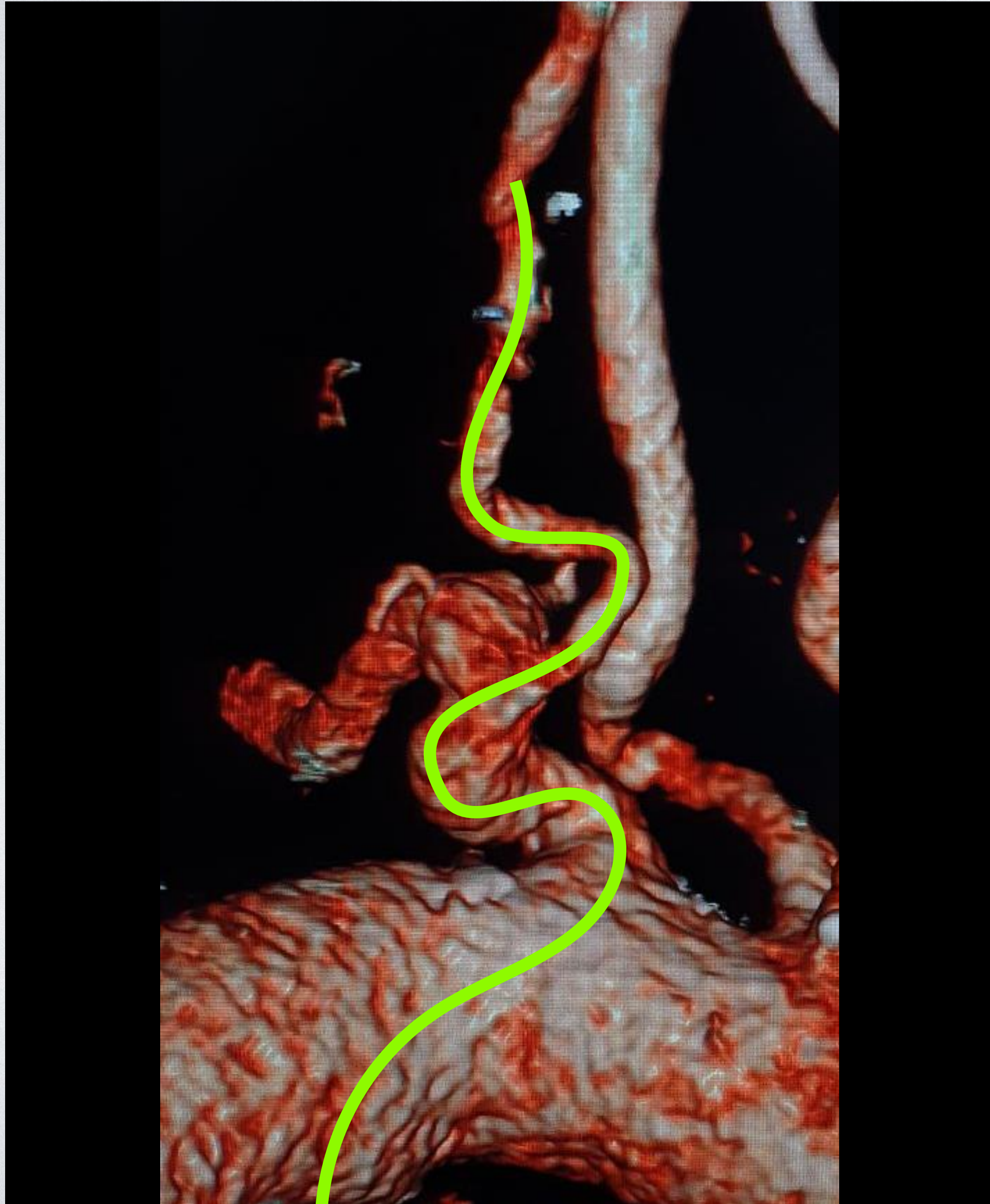
CASE 5



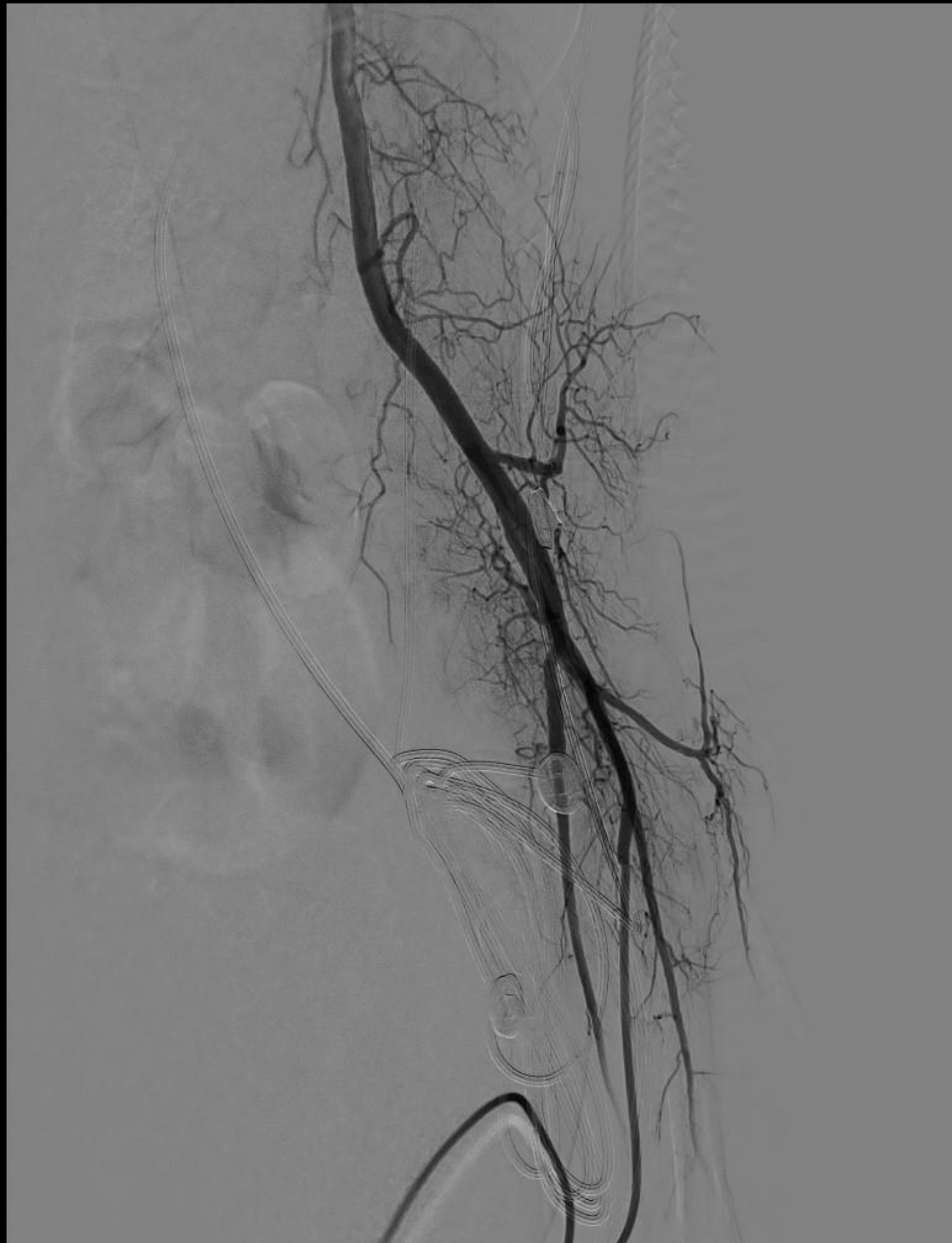




CASE 5



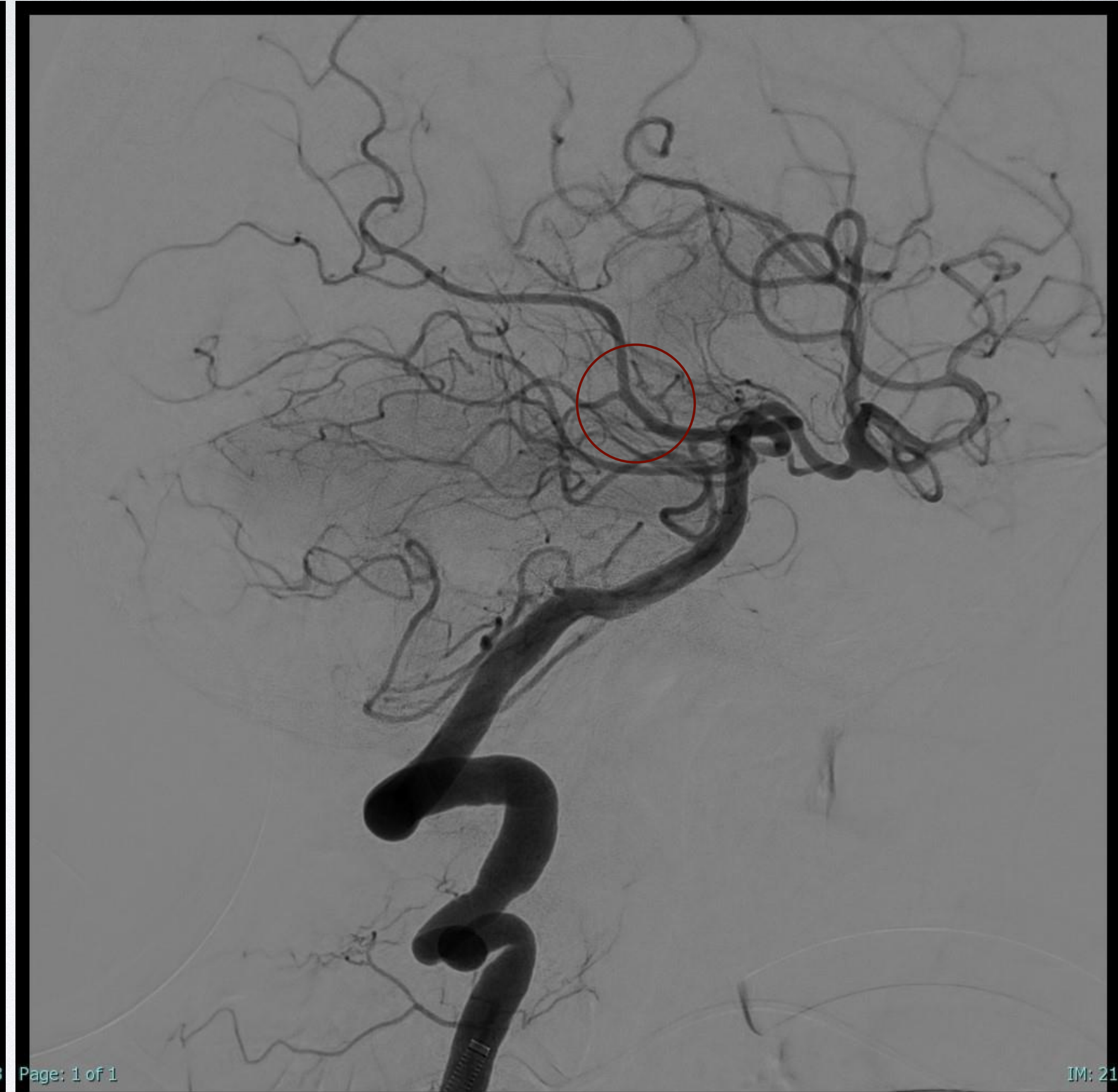
CASE 5



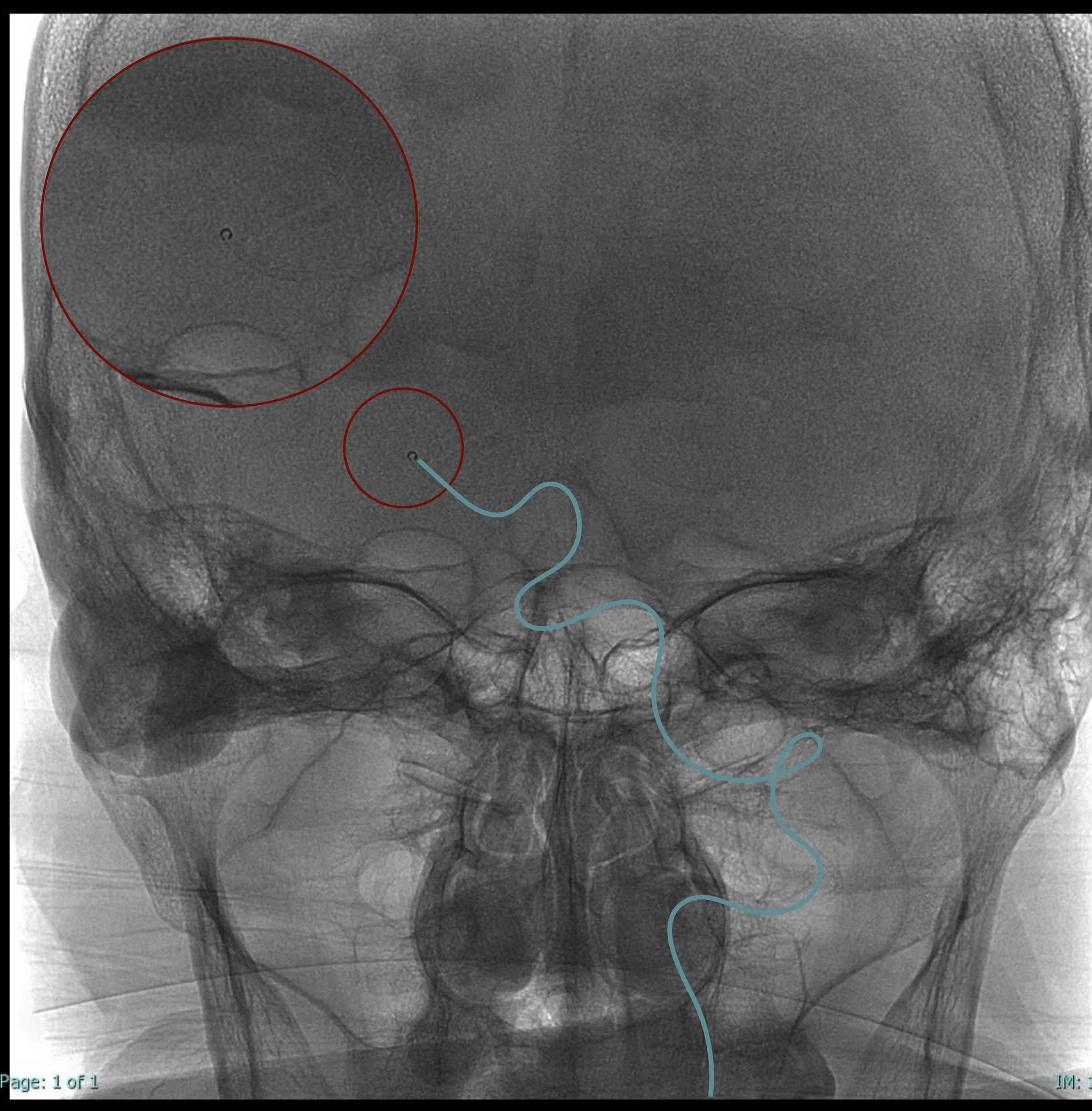
CASE 5



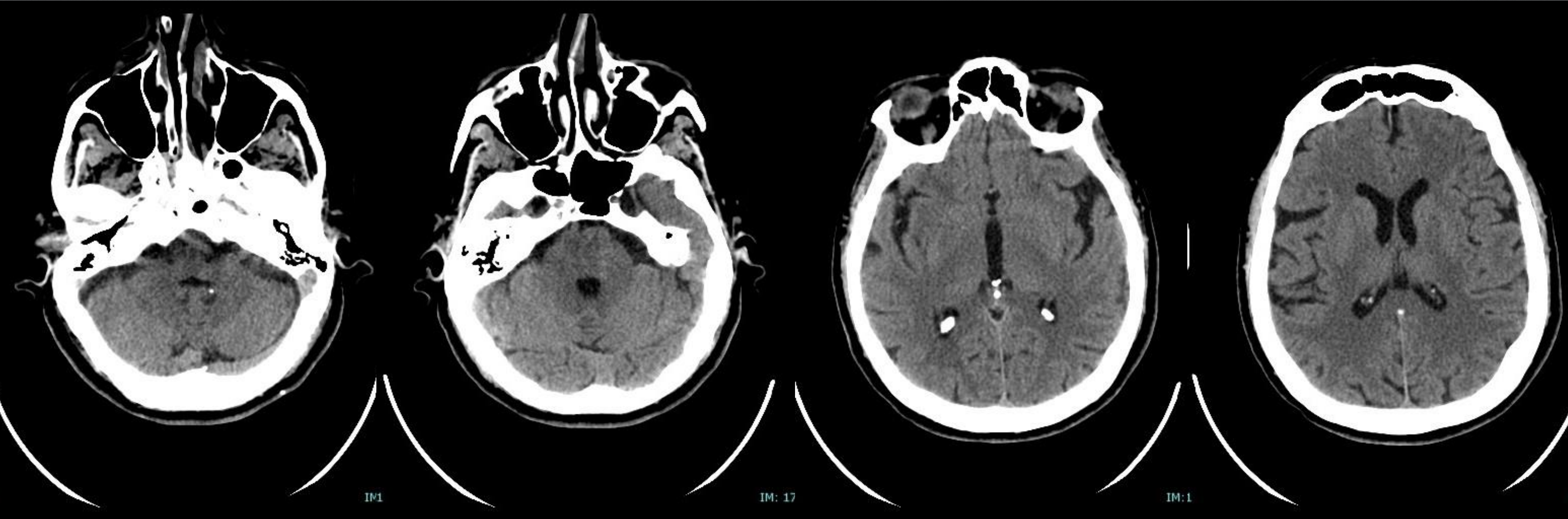
CASE 5



CASE 5



CASE 5



Francesco Diana

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THANK YOU FOR YOUR ATTENTION

