



Neuroradiologia interventistica

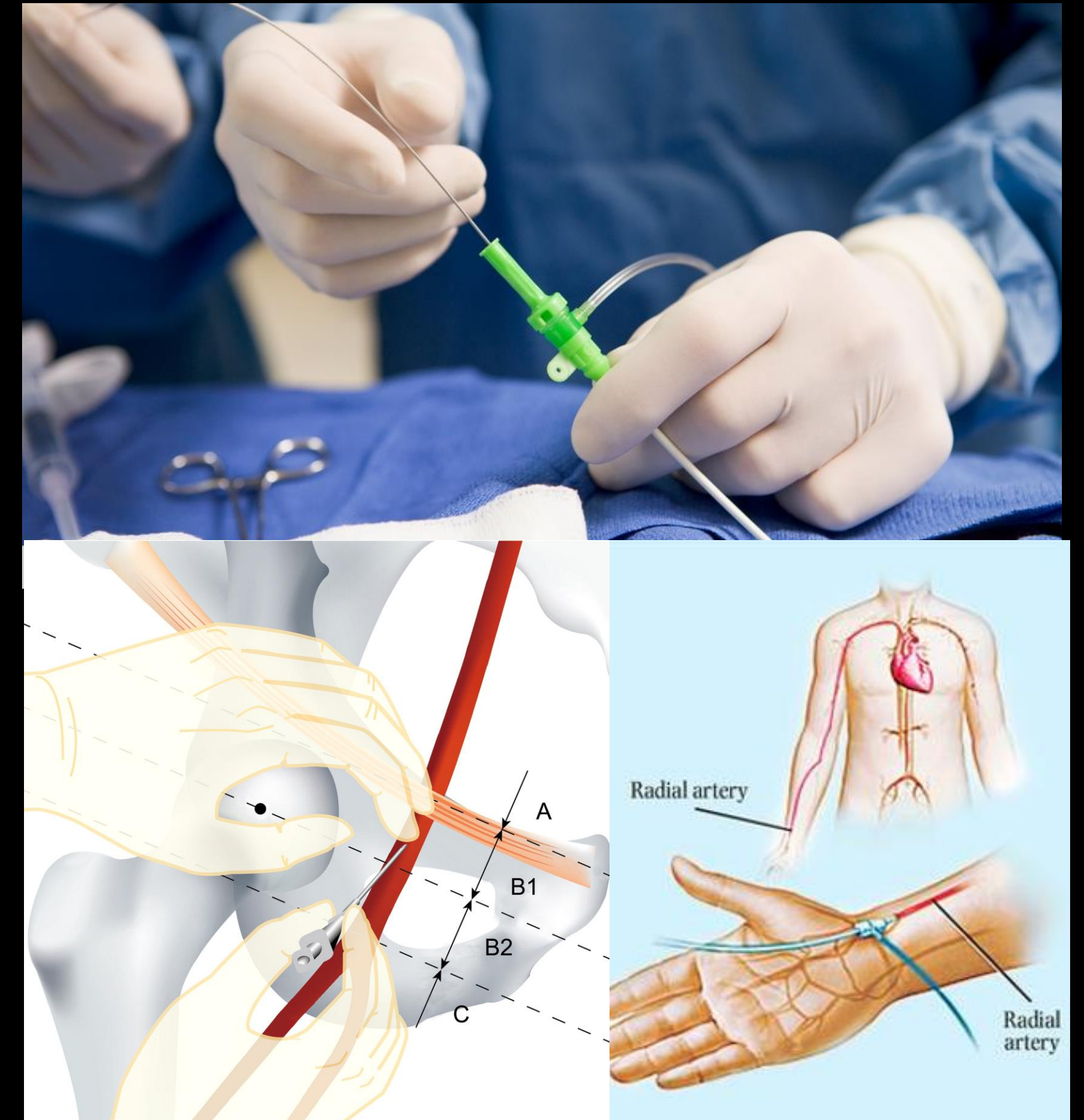
Chianciano Terme 13-15 maggio, sessione STROKE

Beatrice Modello

Neuroradiologia Diagnostica ed Interventistica CESENA-RIMINI

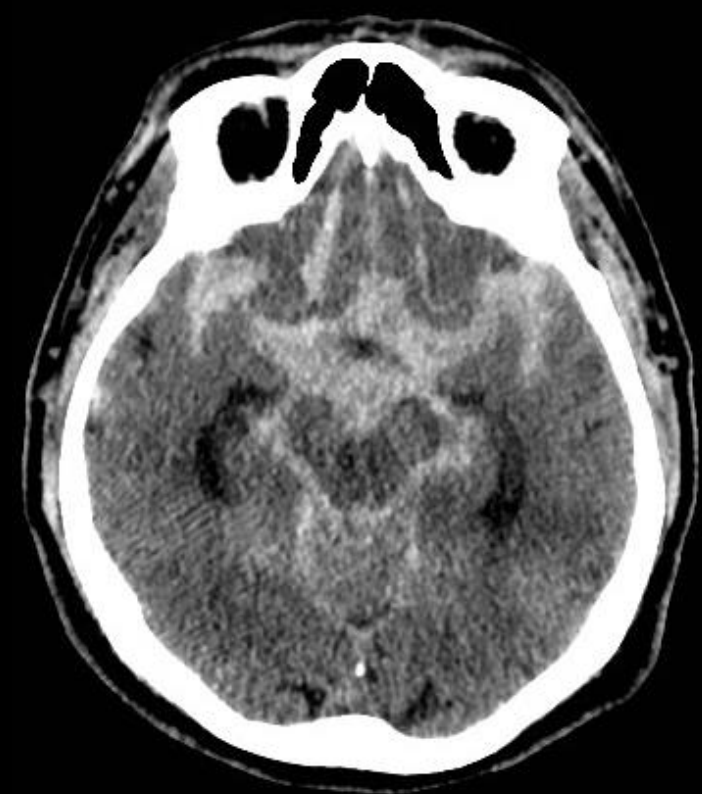
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Neuroradiologia interventistica



Neuroradiologia interventistica

Emorragie intracraniche



Neuroradiologia interventistica

Aneurismi



F 61 anni

Sincope, cefalea

GCS 13

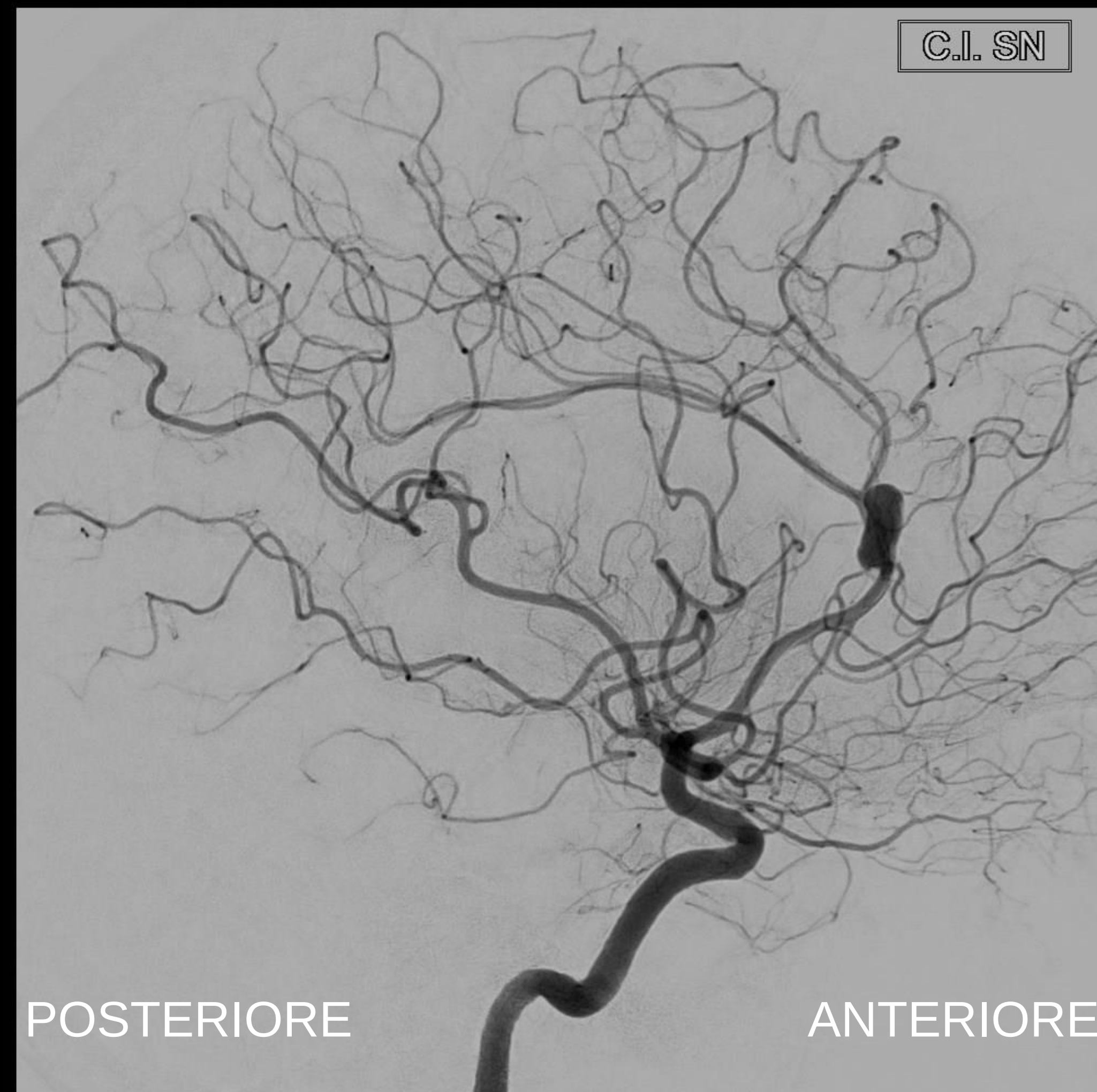
Neuroradiologia interventistica

Aneurismi



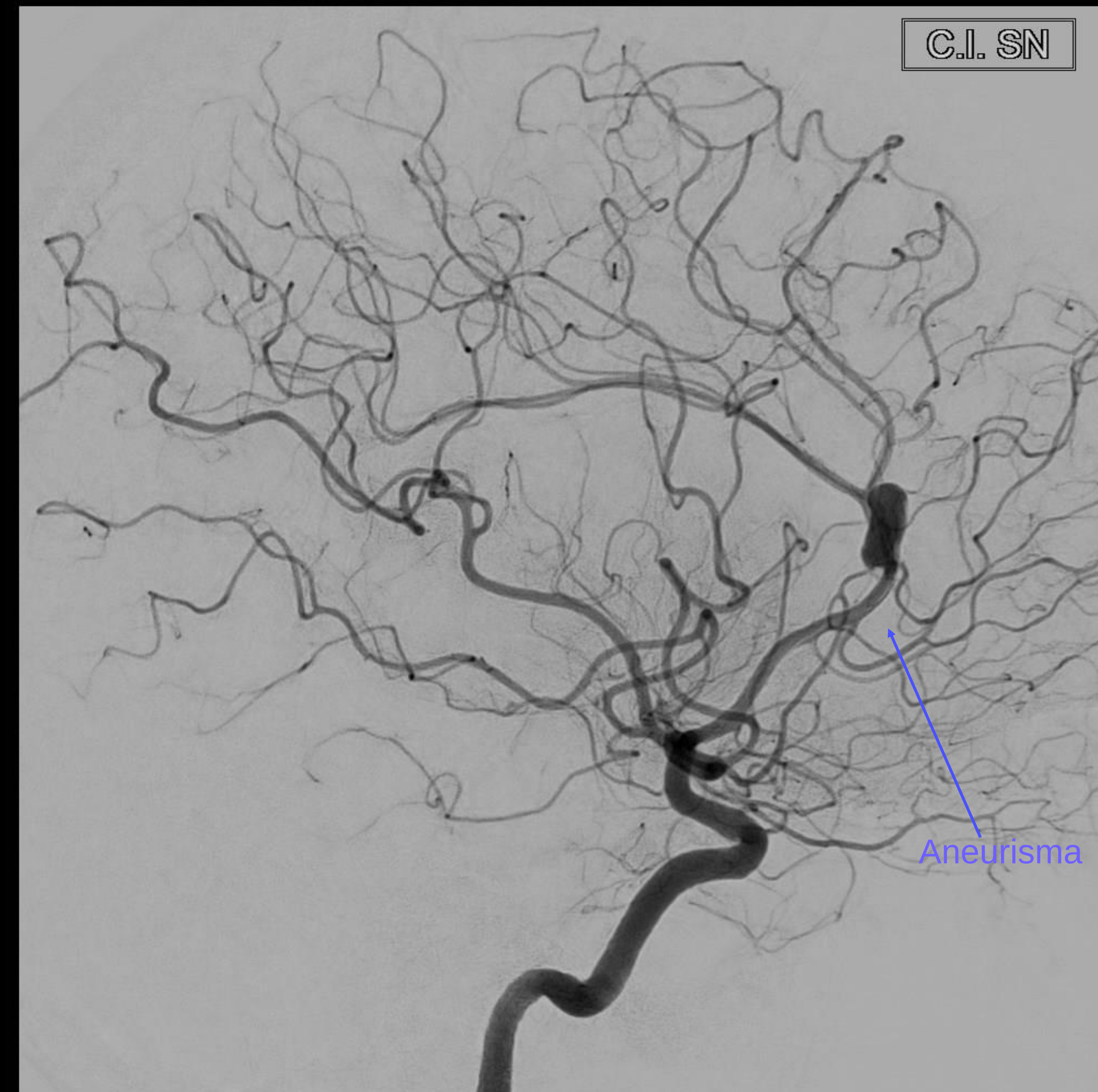
Neuroradiologia interventistica

Aneurismi



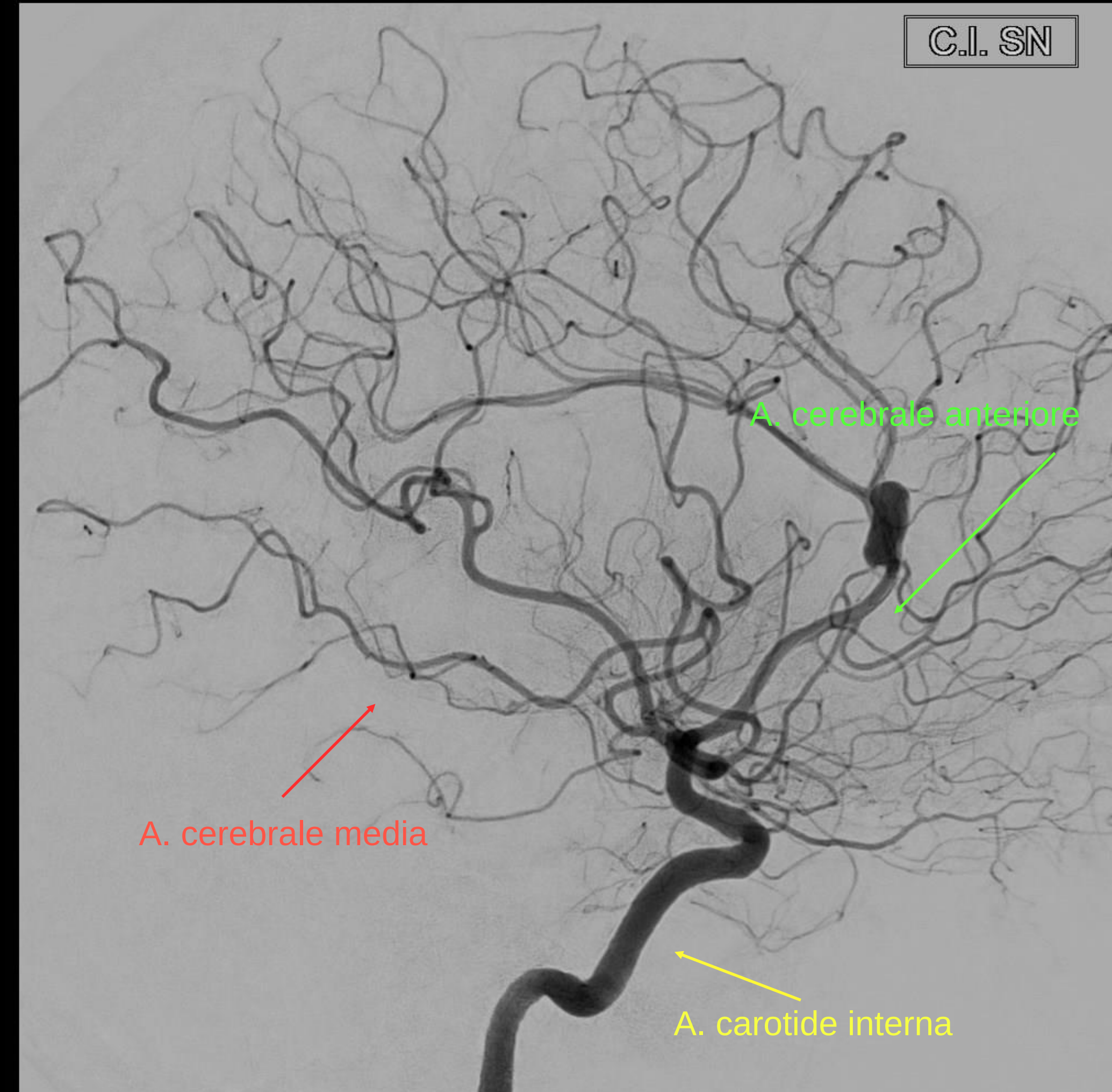
Neuroradiologia interventistica

Aneurismi



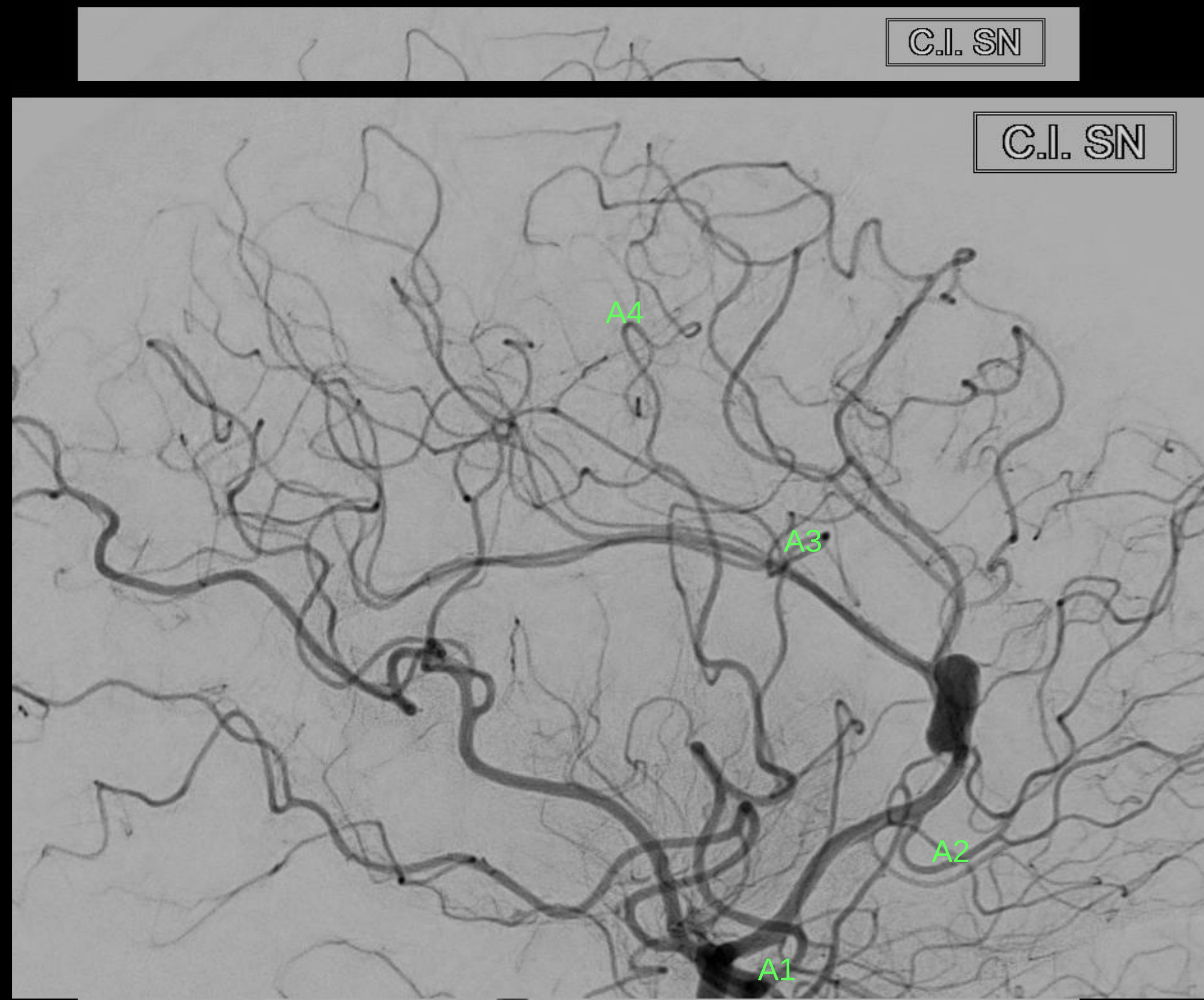
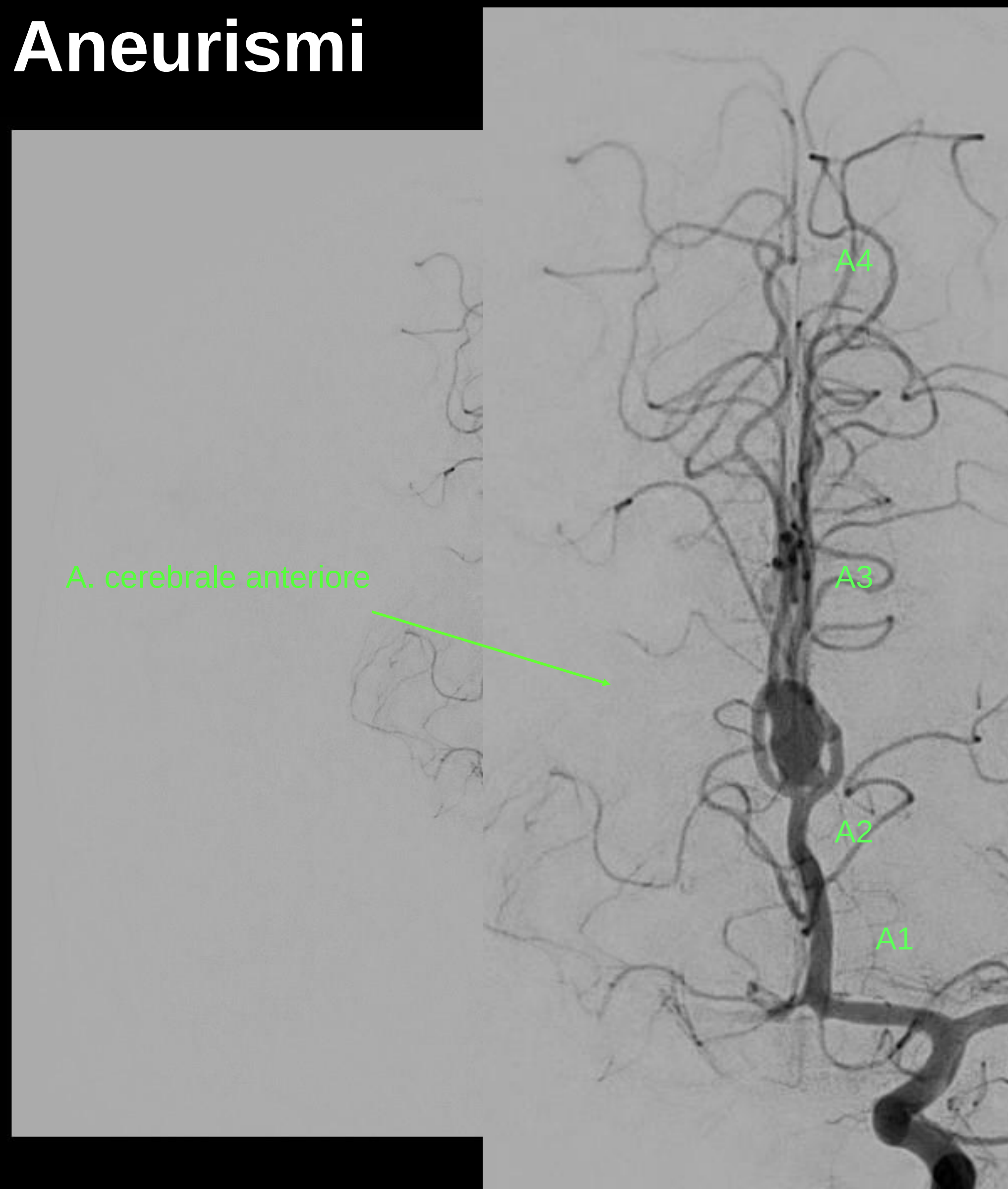
Neuroradiologia interventistica

Aneurismi



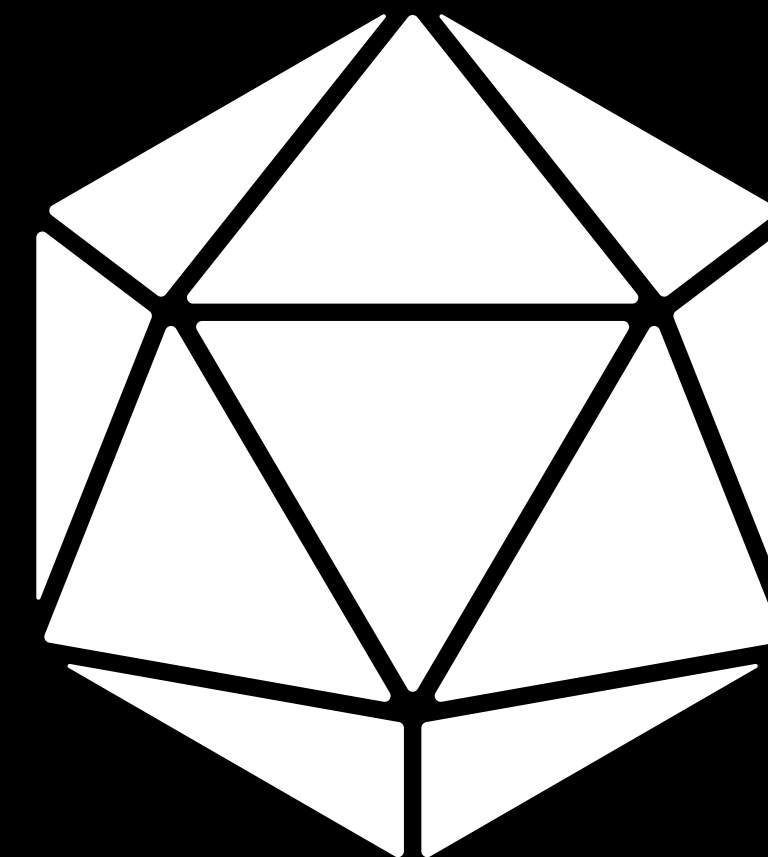
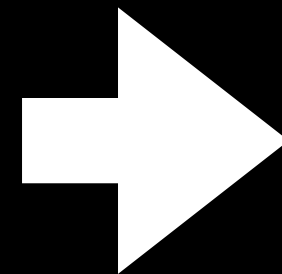
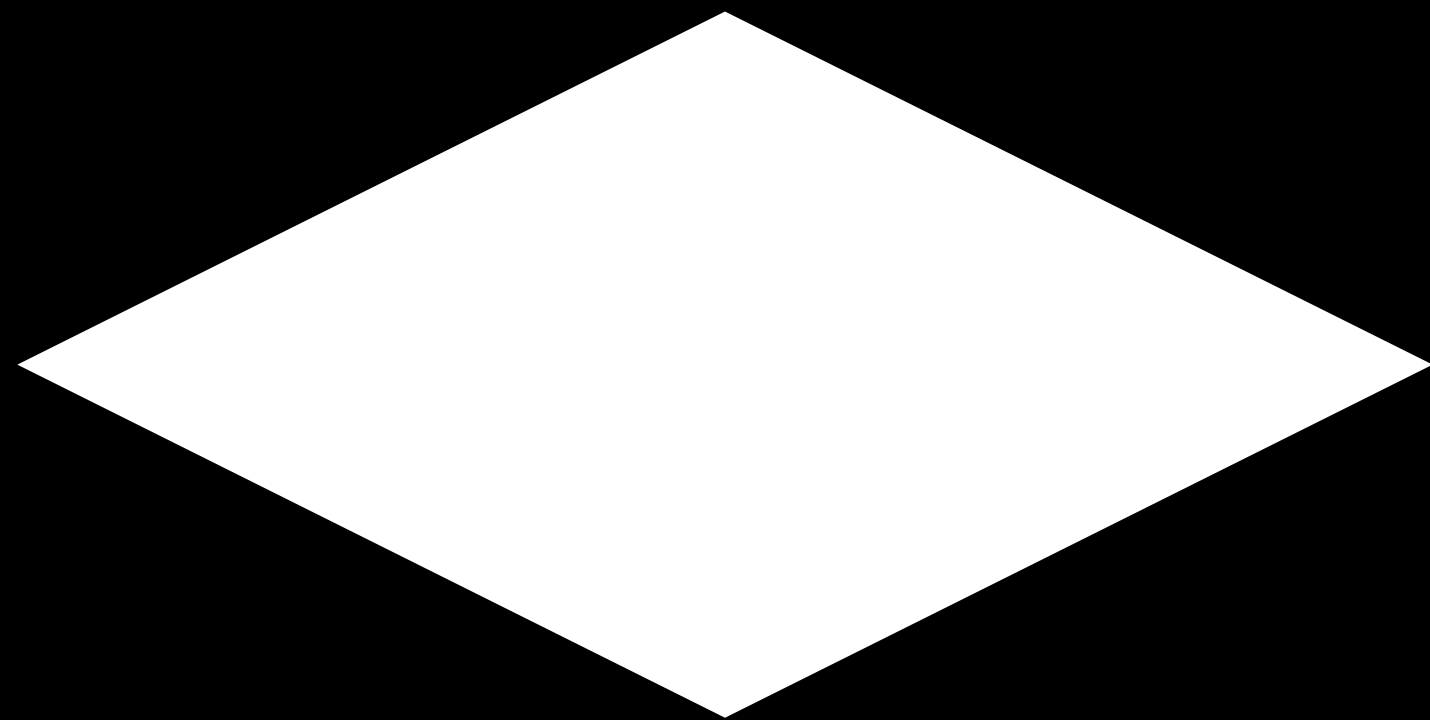
Neuroradiologia interventistica

Aneurismi



Neuroradiologia interventistica

Aneurismi



Neuroradiologia interventistica

Aneurismi



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ID studio: 112CE10000461532
Data esame: 2018/06/14

Rotaz.: +8°
Ang.: 0°

Lato testa



N. seriogr.: 5007
Tipo volume: 3DRA
Data seriogr.: 2018/06/14
Numero seriogr.: 14:38:58
Dimensione cubo: 53.29 mm

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ID studio: 112CE10000461532
Data esame: 2018/06/14

Rotaz.: -82°
Ang.: 0°

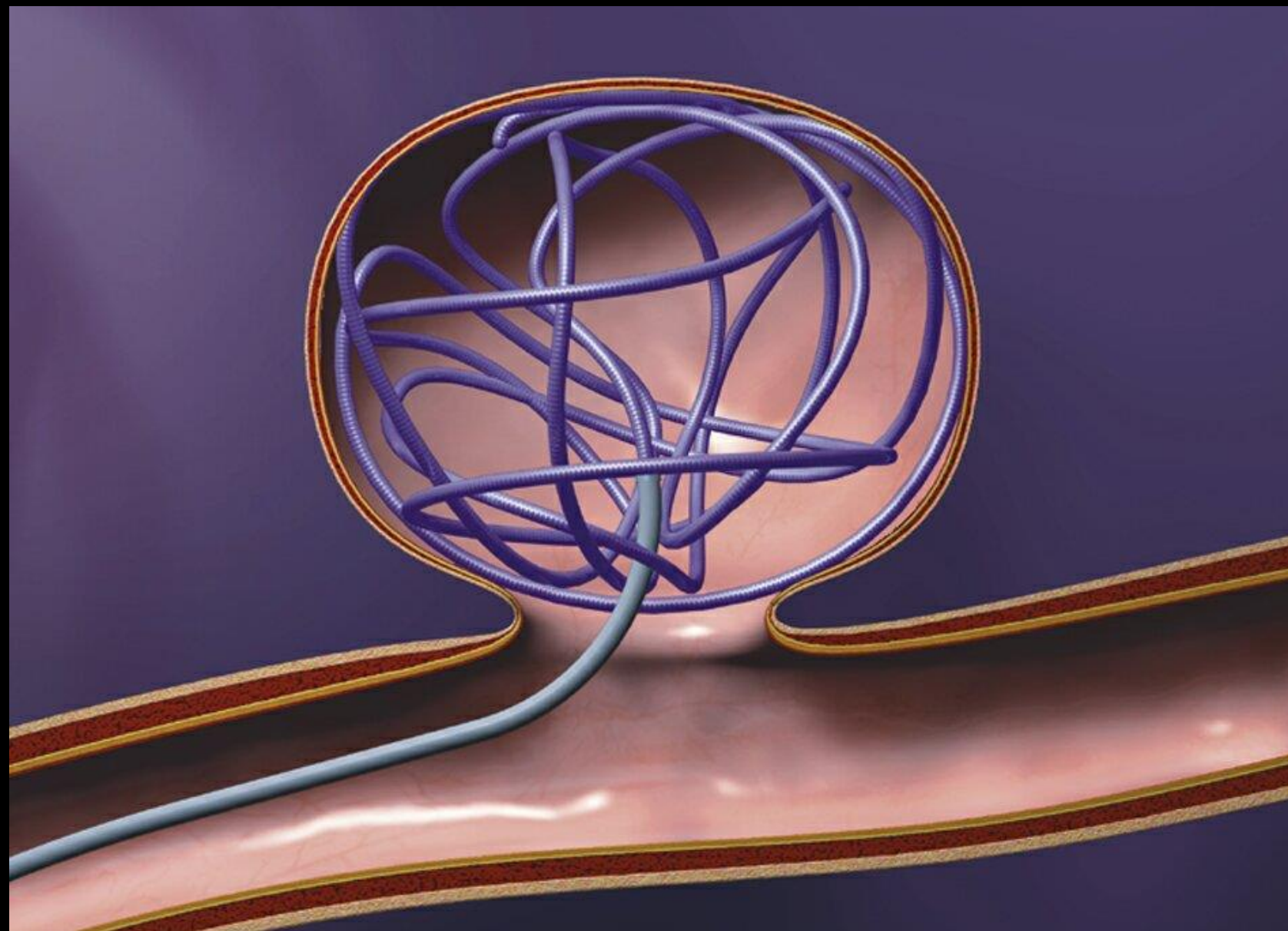
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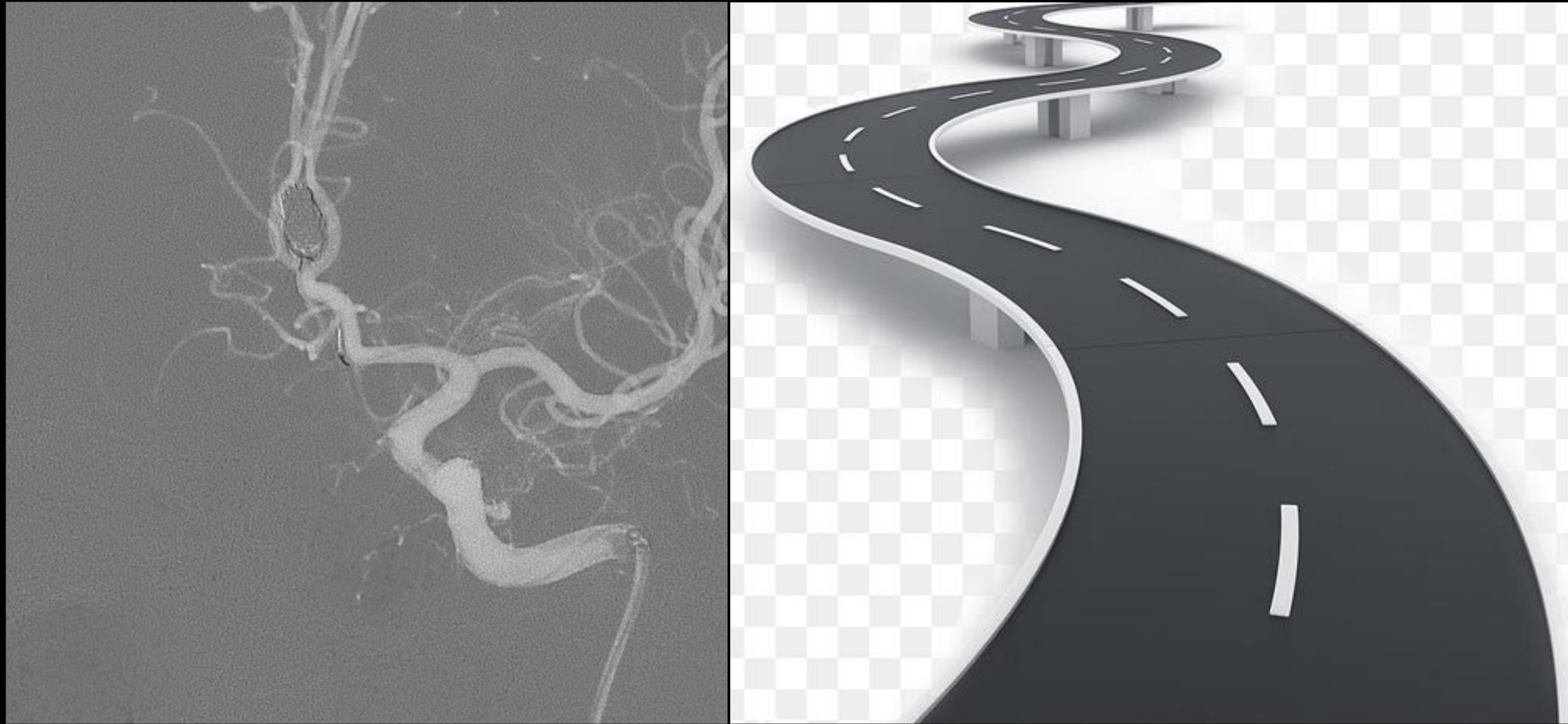
Neuroradiologia interventistica

Aneurismi



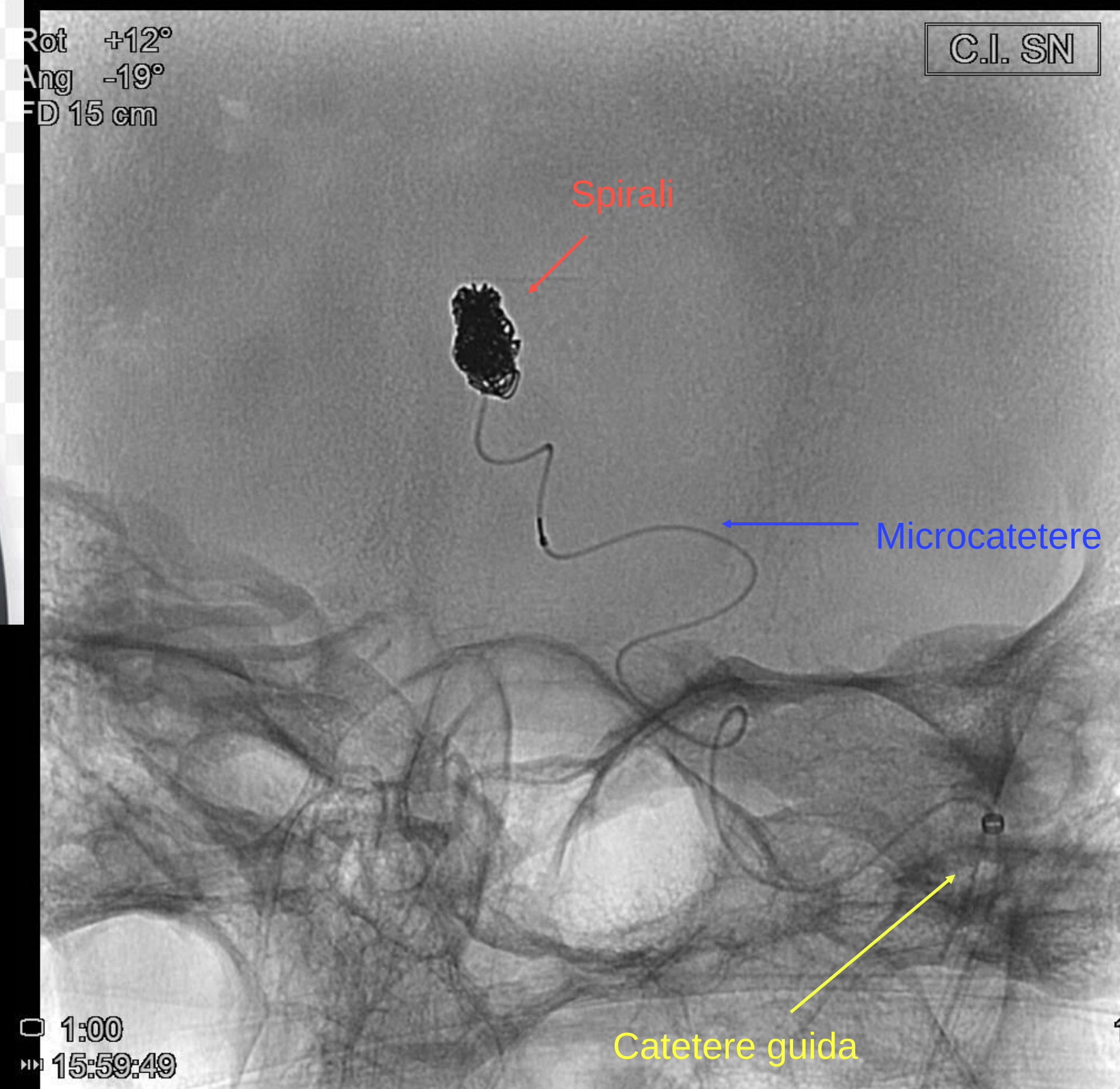
Neuroradiologia interventistica

Aneurismi



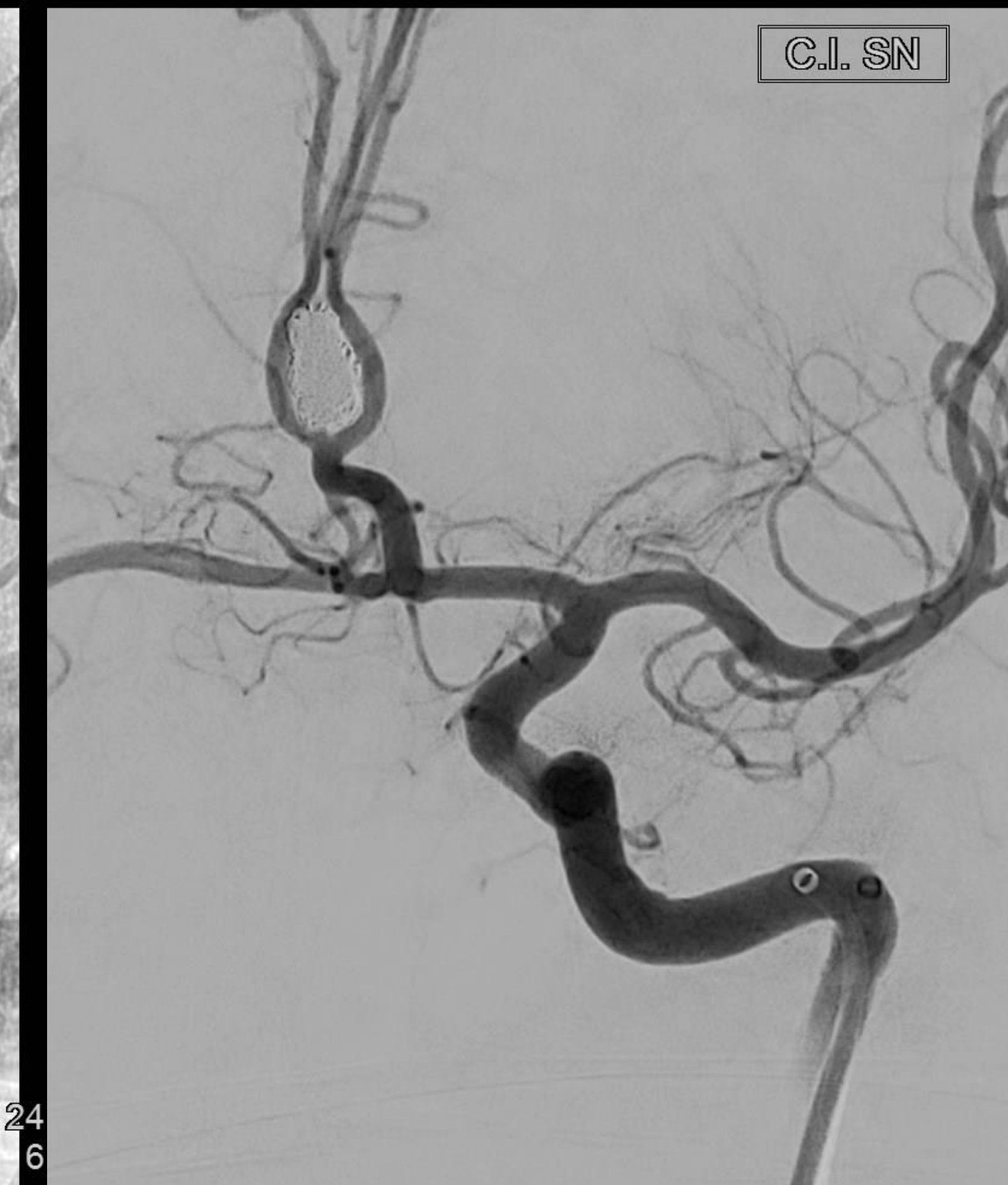
Neuroradiologia interventistica

Aneurismi



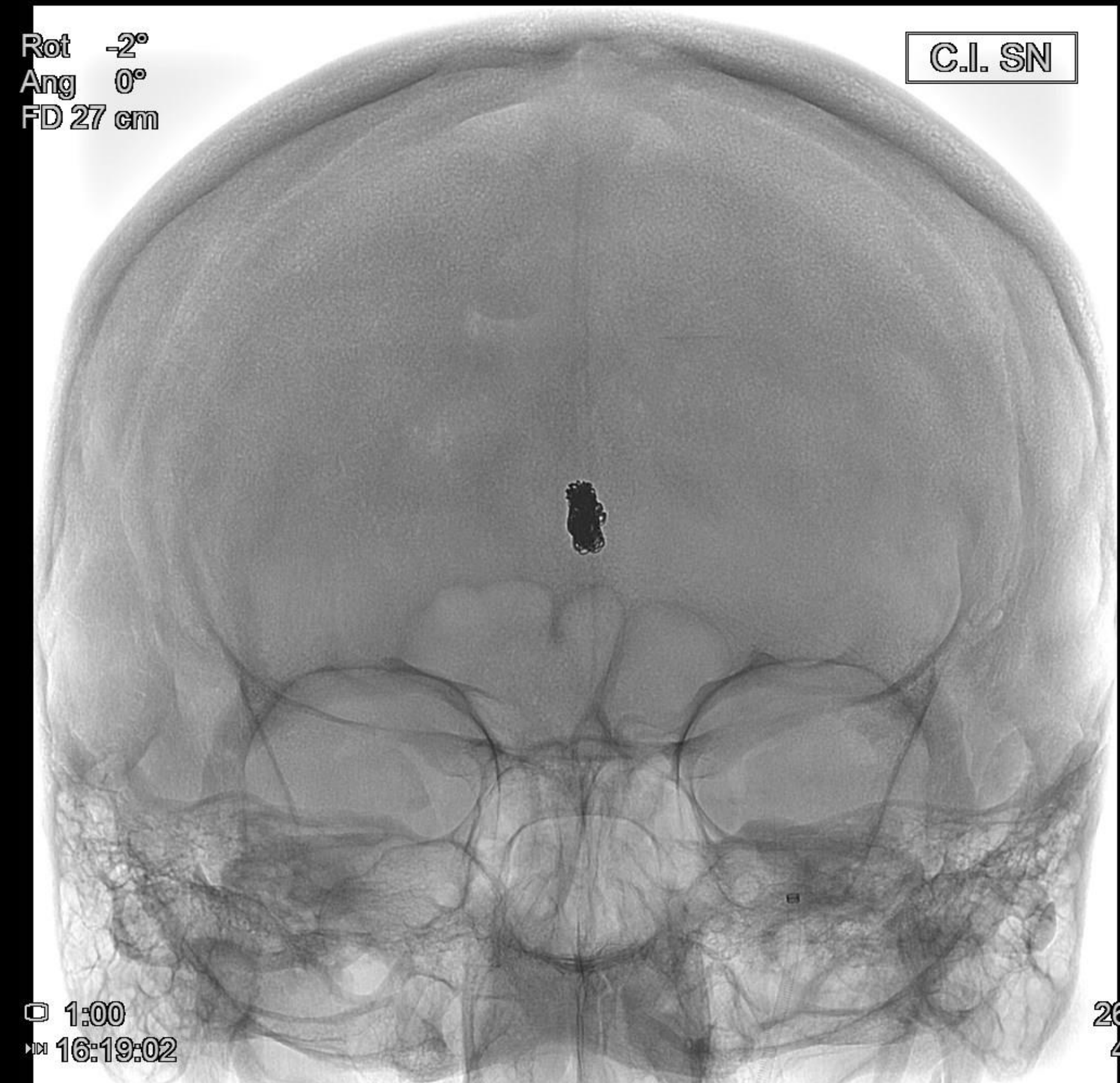
Neuroradiologia interventistica

Aneurismi



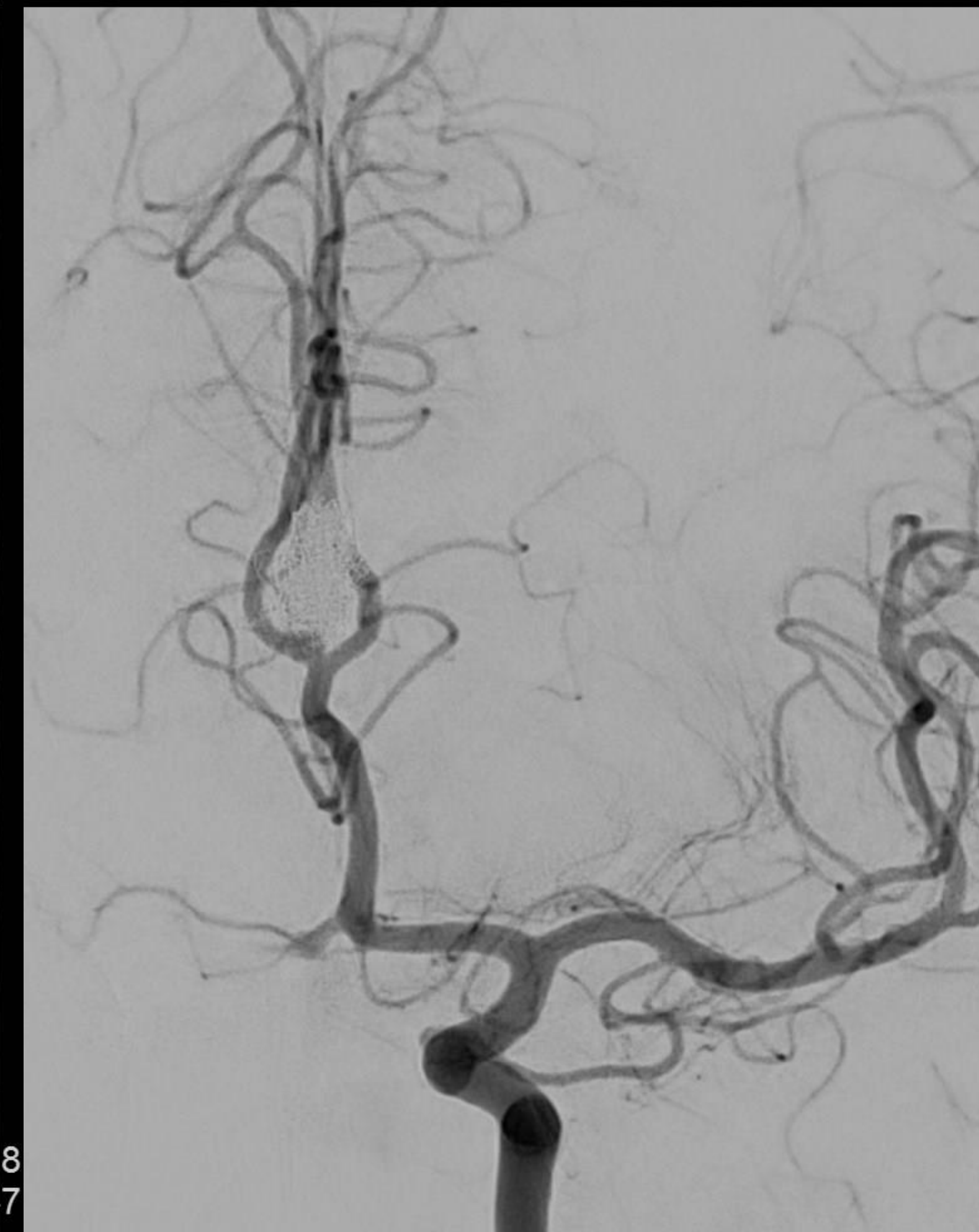
Neuroradiologia interventistica

Aneurismi



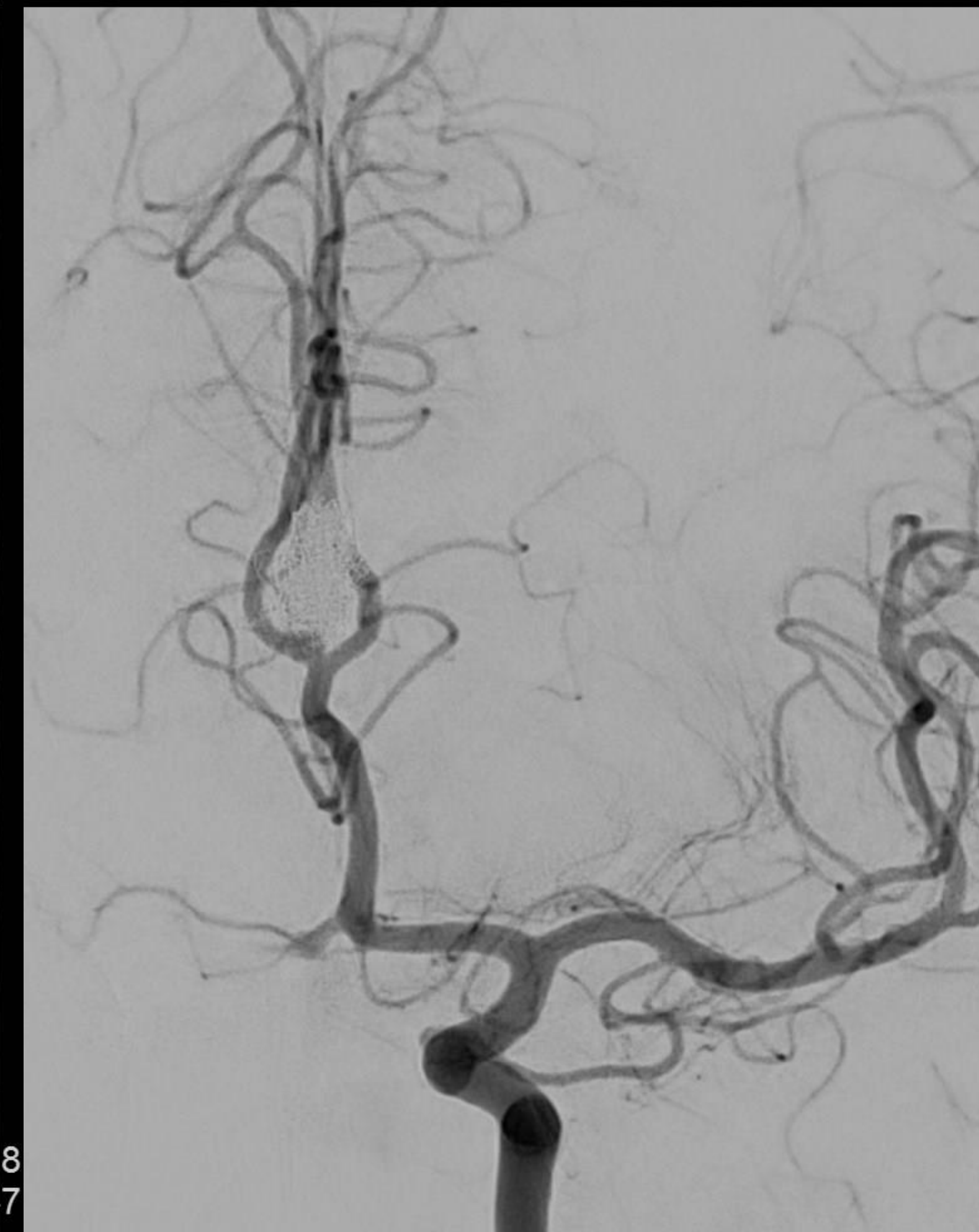
Neuroradiologia interventistica

Aneurismi



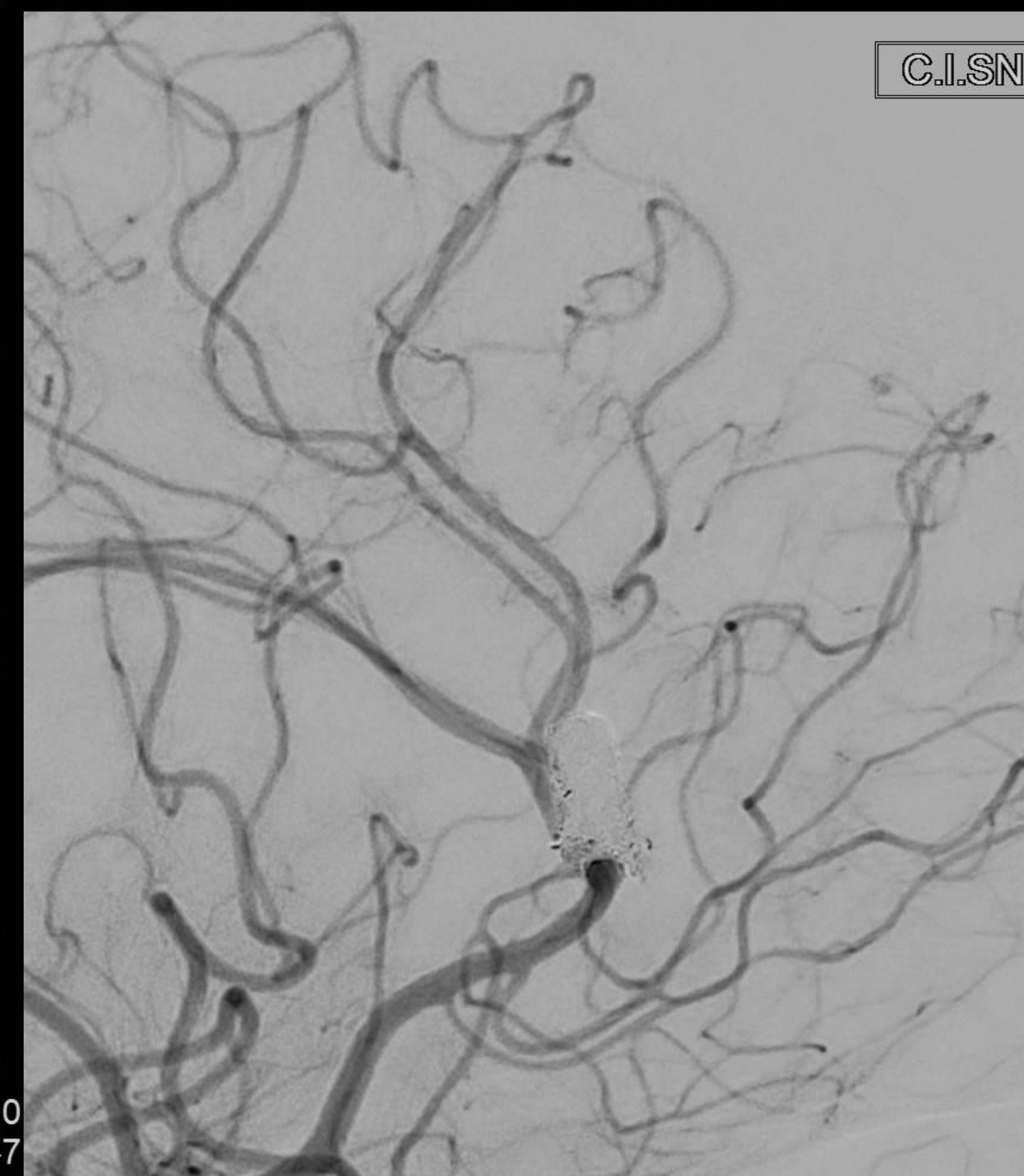
Neuroradiologia interventistica

Aneurismi



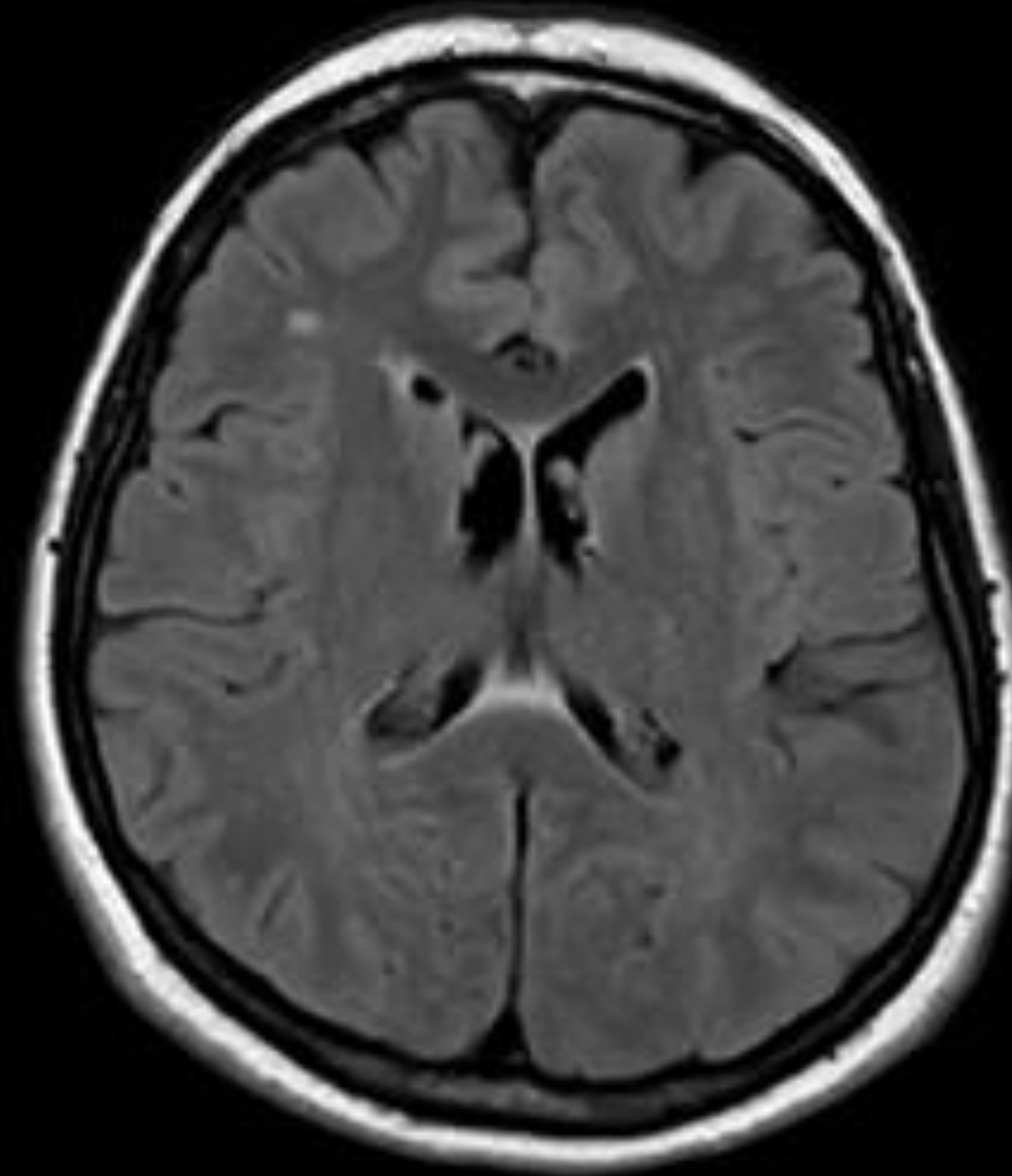
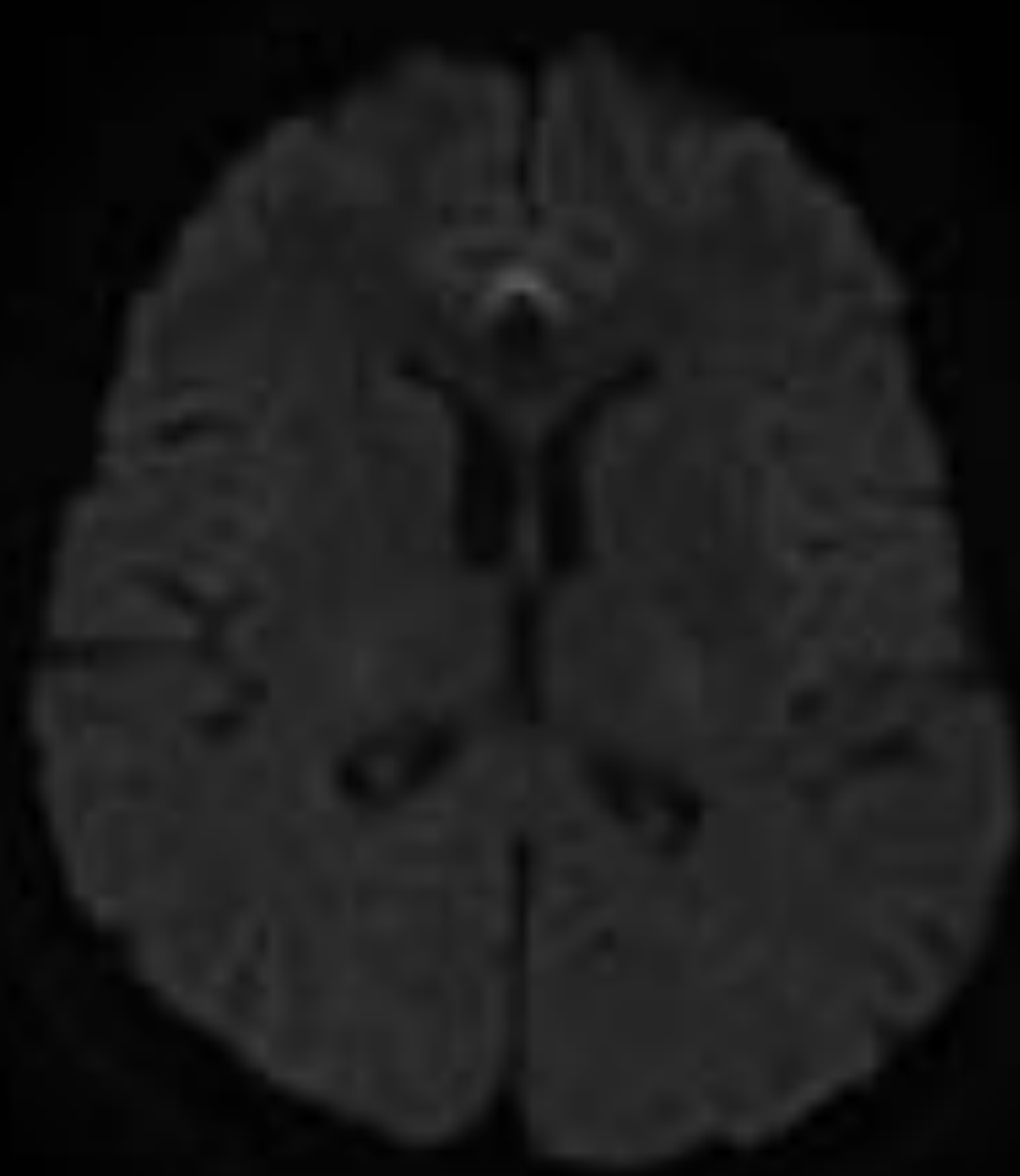
Neuroradiologia interventistica

Aneurismi



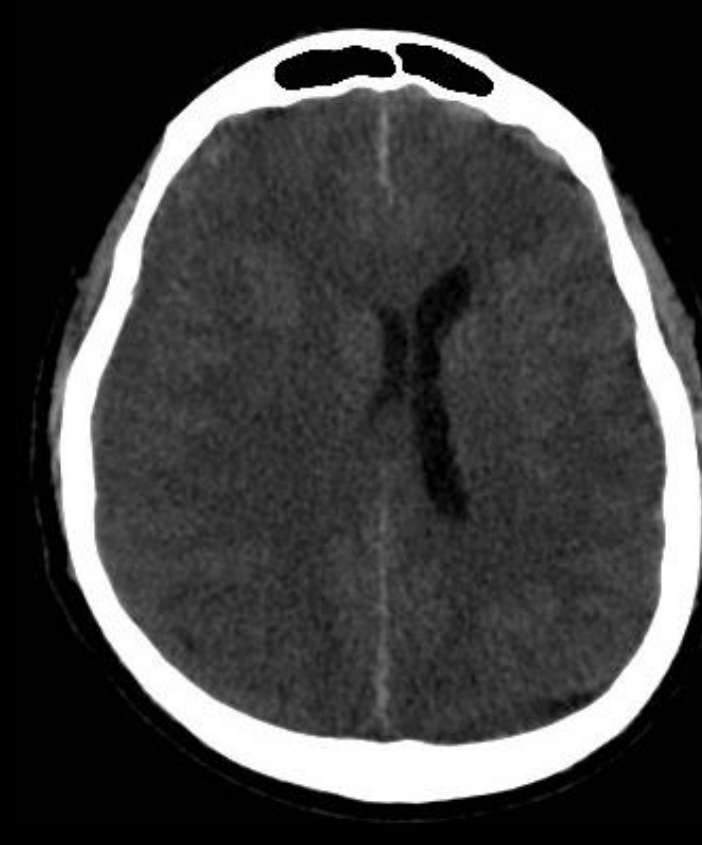
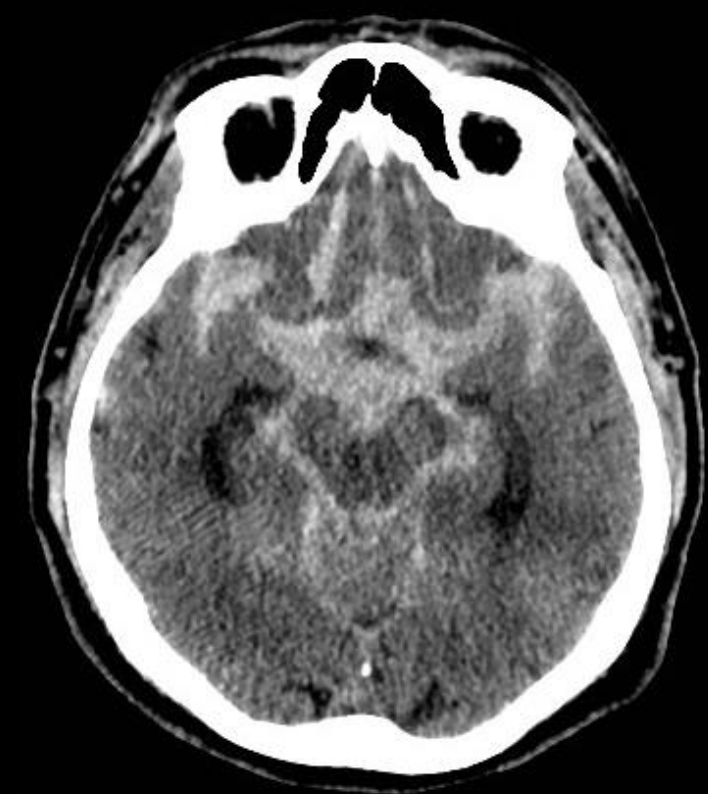
Neuroradiologia interventistica

Aneurismi



Neuroradiologia interventistica

Emorragie intracraniche



Neuroradiologia interventistica

Aneurismi



M 60 anni

Cefalea

GCS 13

Neuroradiologia interventistica

Aneurismi



Neuroradiologia interventistica

Aneurismi



Neuroradiologia interventistica

Aneurismi



ID paziente: 035602
ID studio: 112CE10000747987
Data esame: 2019/03/06

Rotaz: +90°
Ang.: 0°

Lato testa

N. seriogr.: 5005
Tipo volume: 3DRA
Data seriogr.: 2019/03/06
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Dimensione cubo: 53.29 mm



Neuroradiologia interventistica

Aneurismi



Neuroradiologia interventistica

Aneurismi



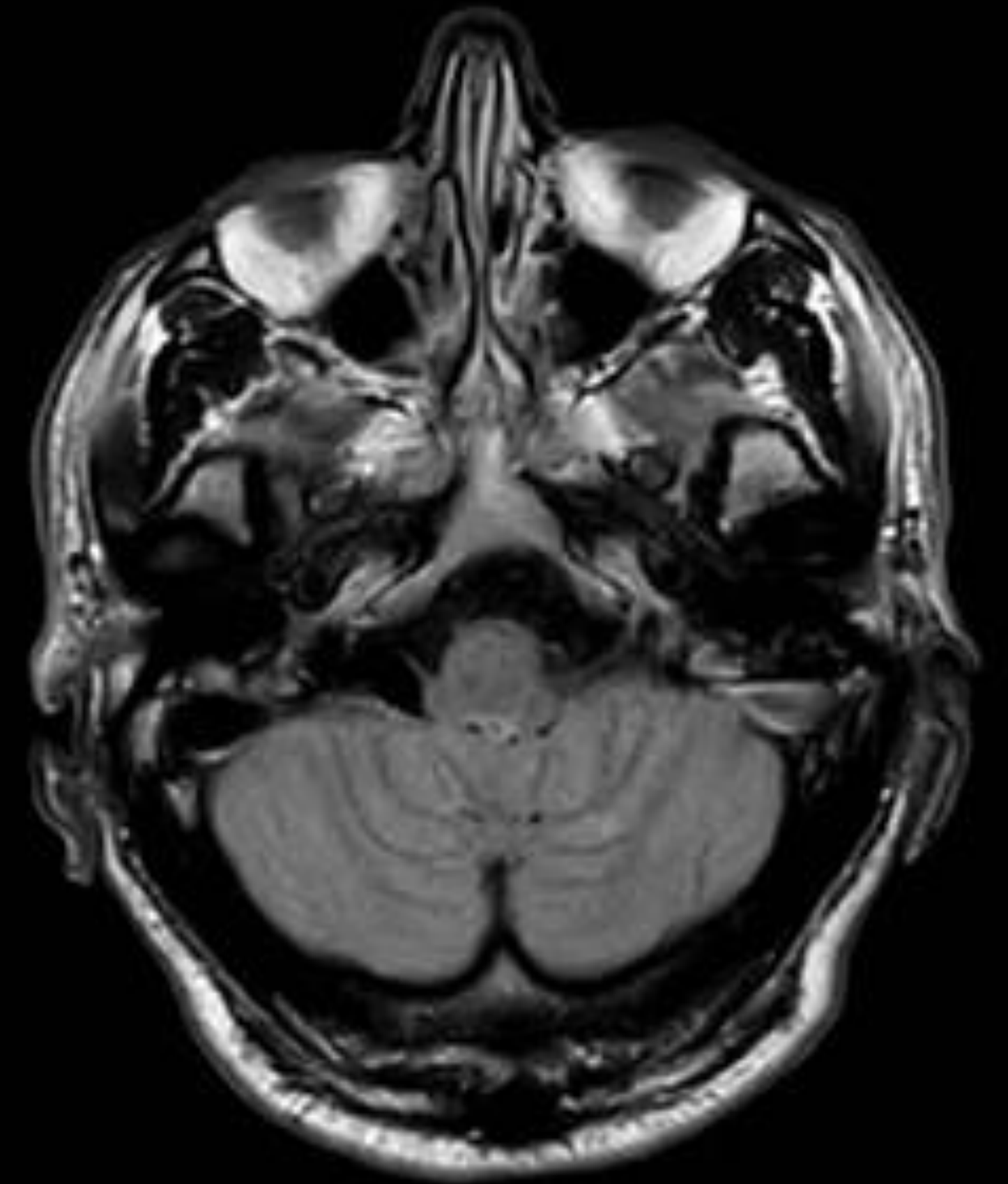
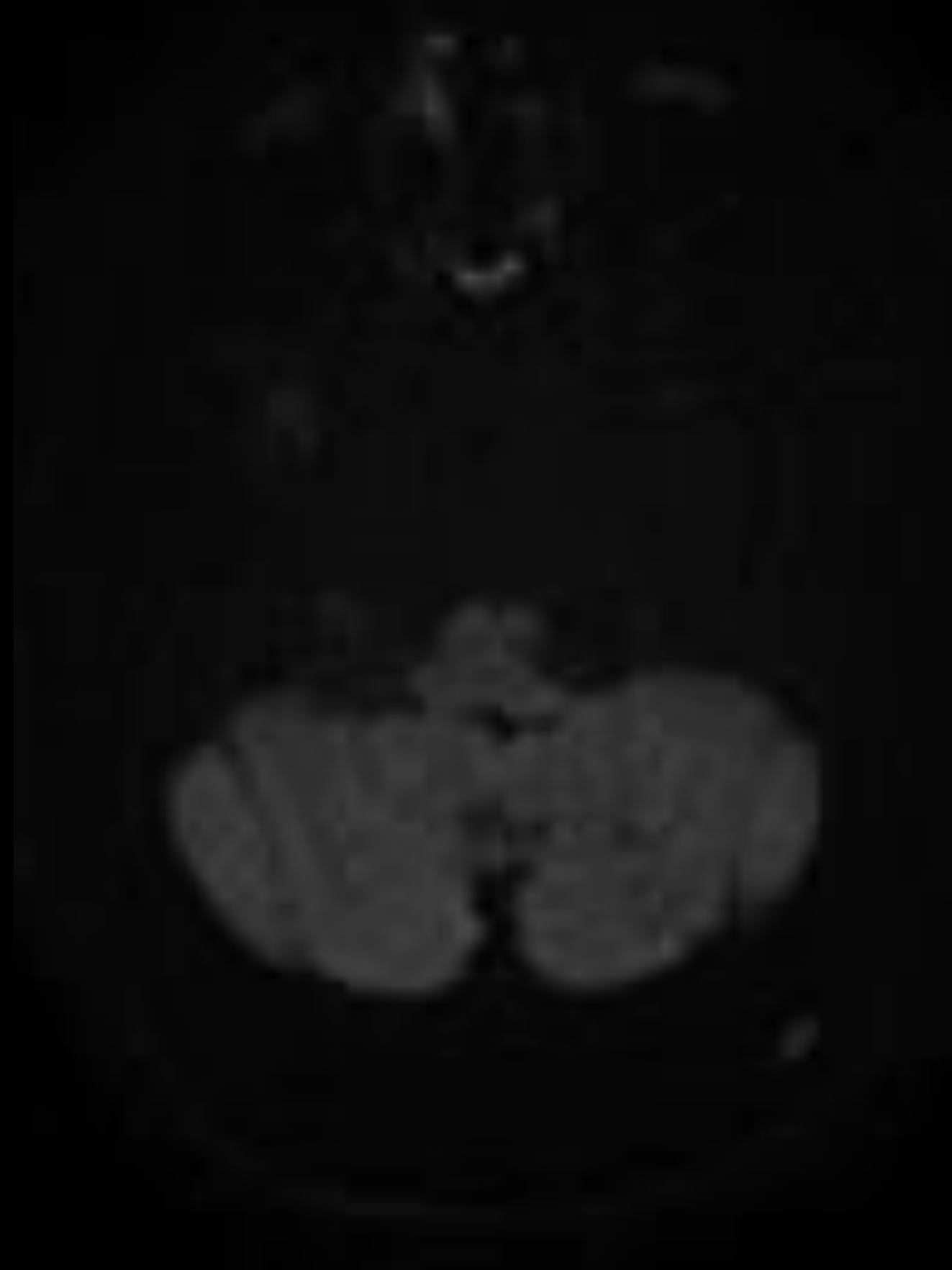
Neuroradiologia interventistica

Aneurismi



Neuroradiologia interventistica

Aneurismi



Neuroradiologia interventistica

Aneurismi



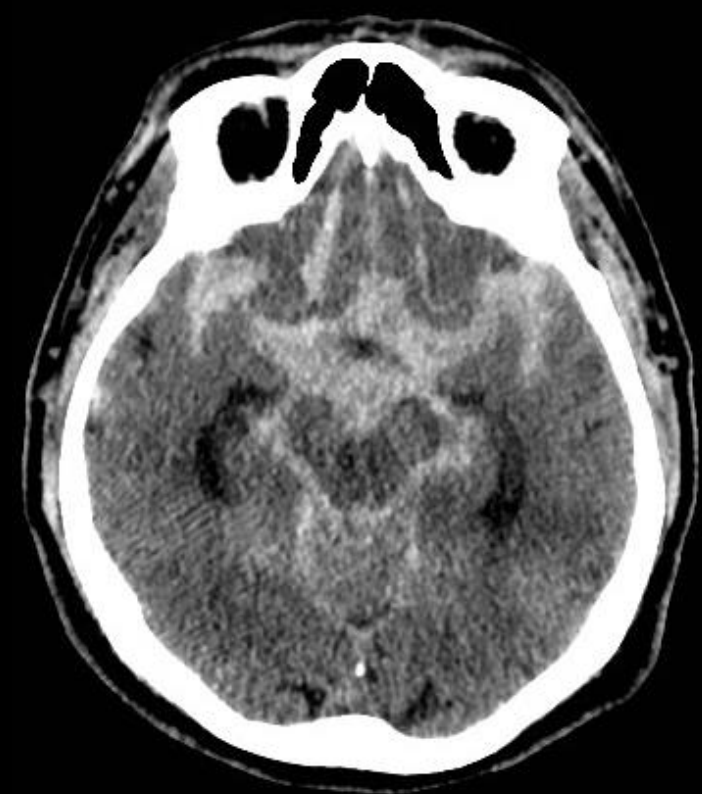
Neuroradiologia interventistica

Aneurismi



Neuroradiologia interventistica

Emorragie intracraniche



Neuroradiologia interventistica

Aneurismi



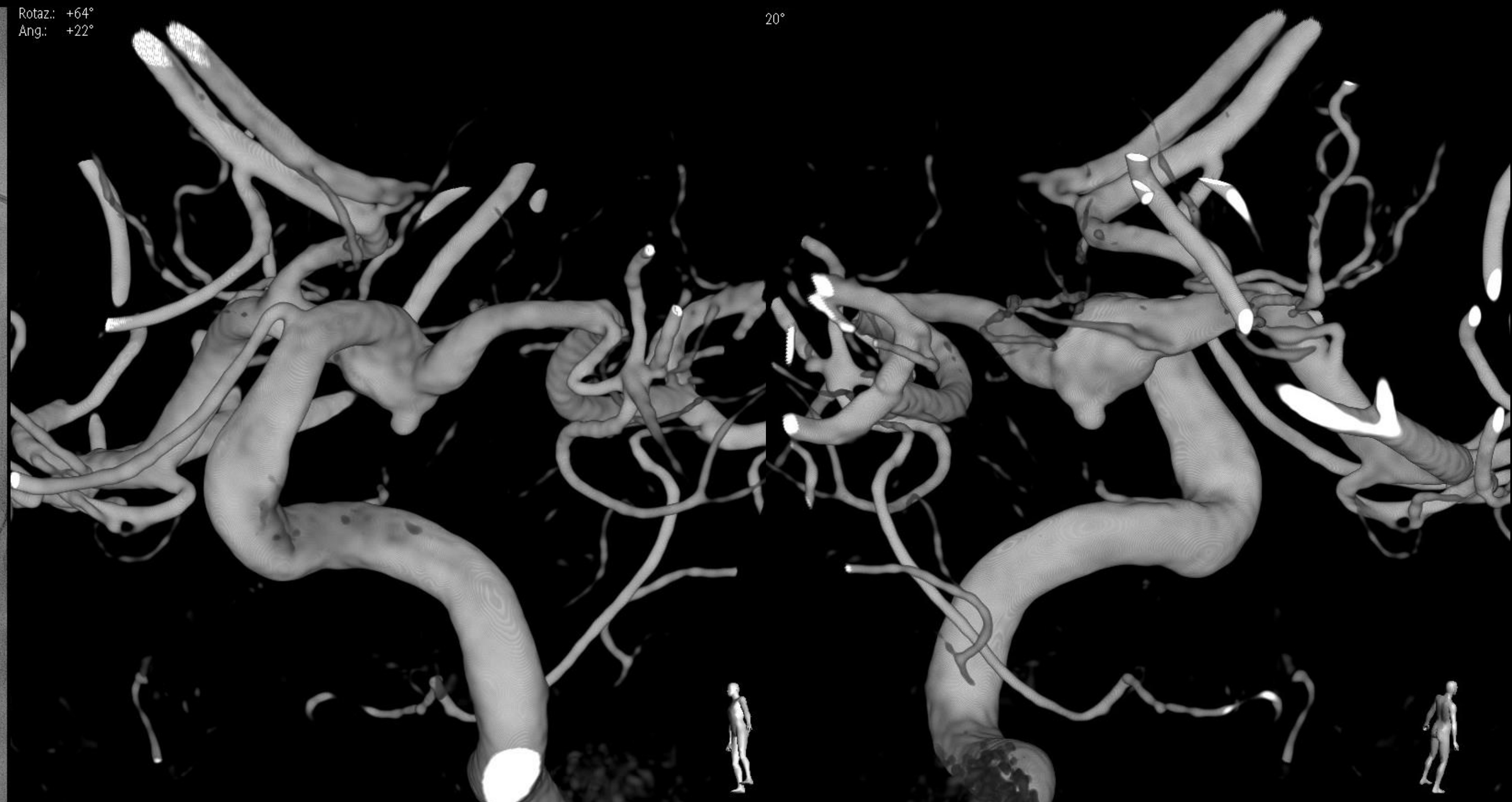
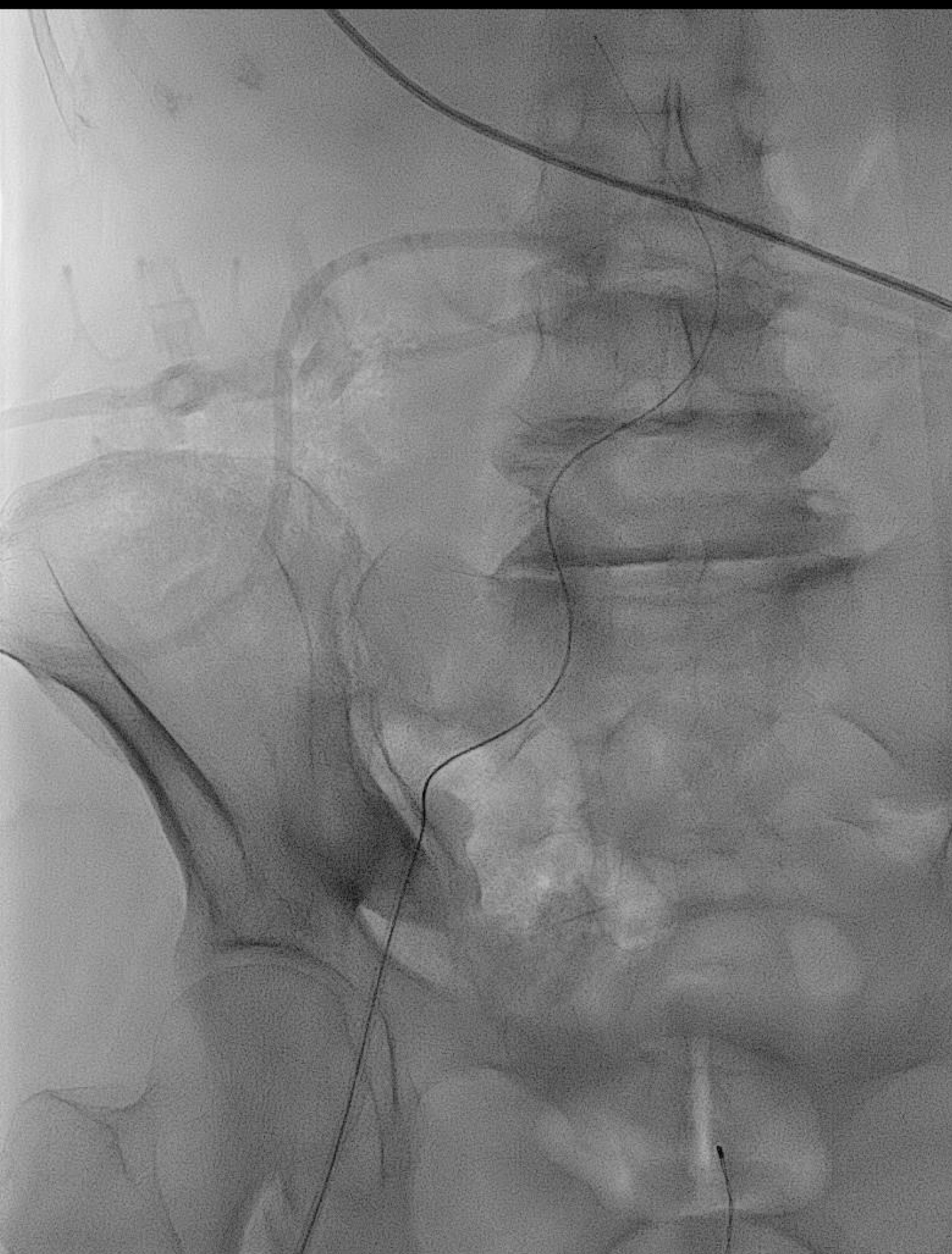
F 72 anni

Disturbo eloquio
stato soporoso
al risveglio

GCS 9

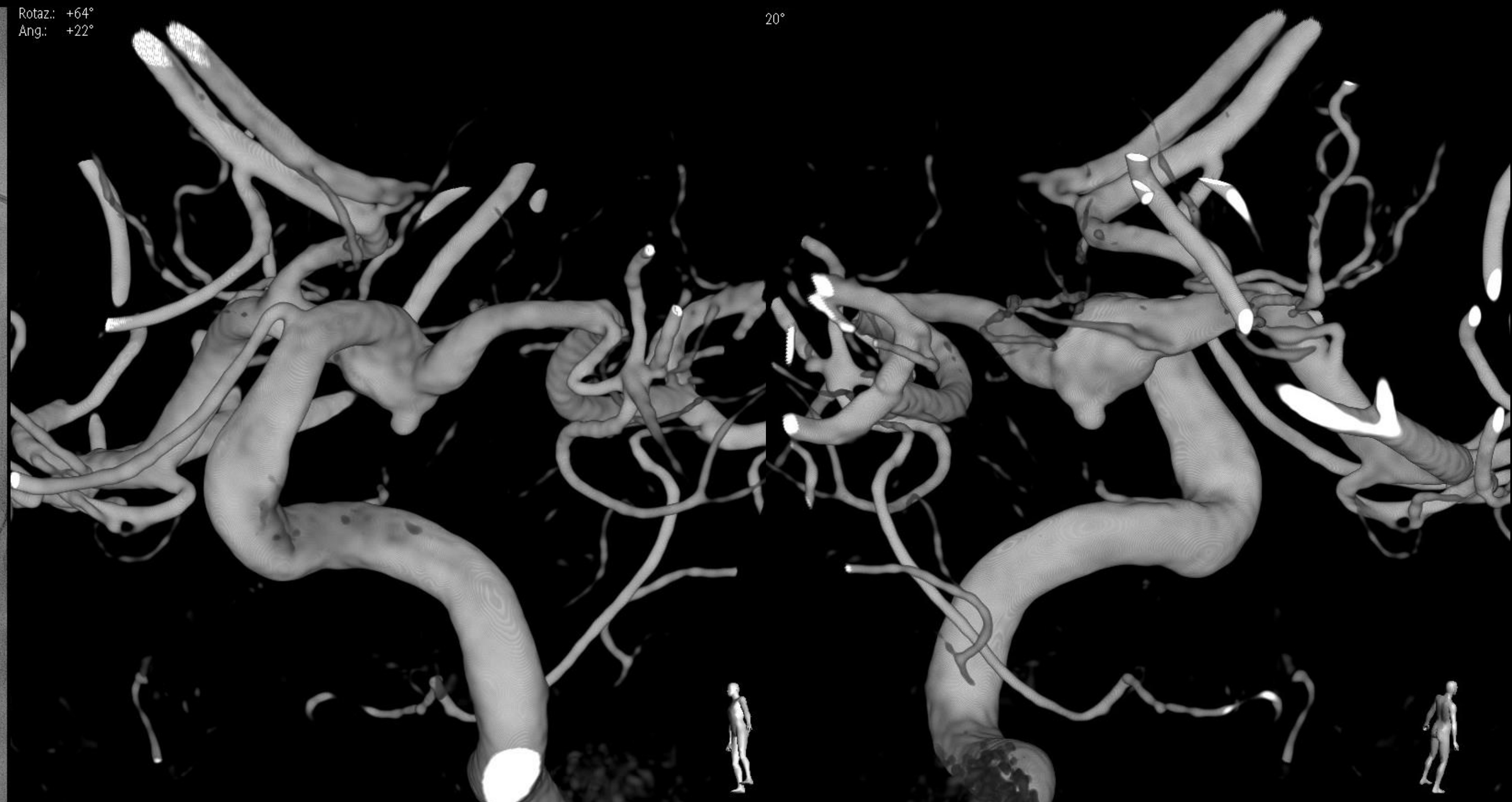
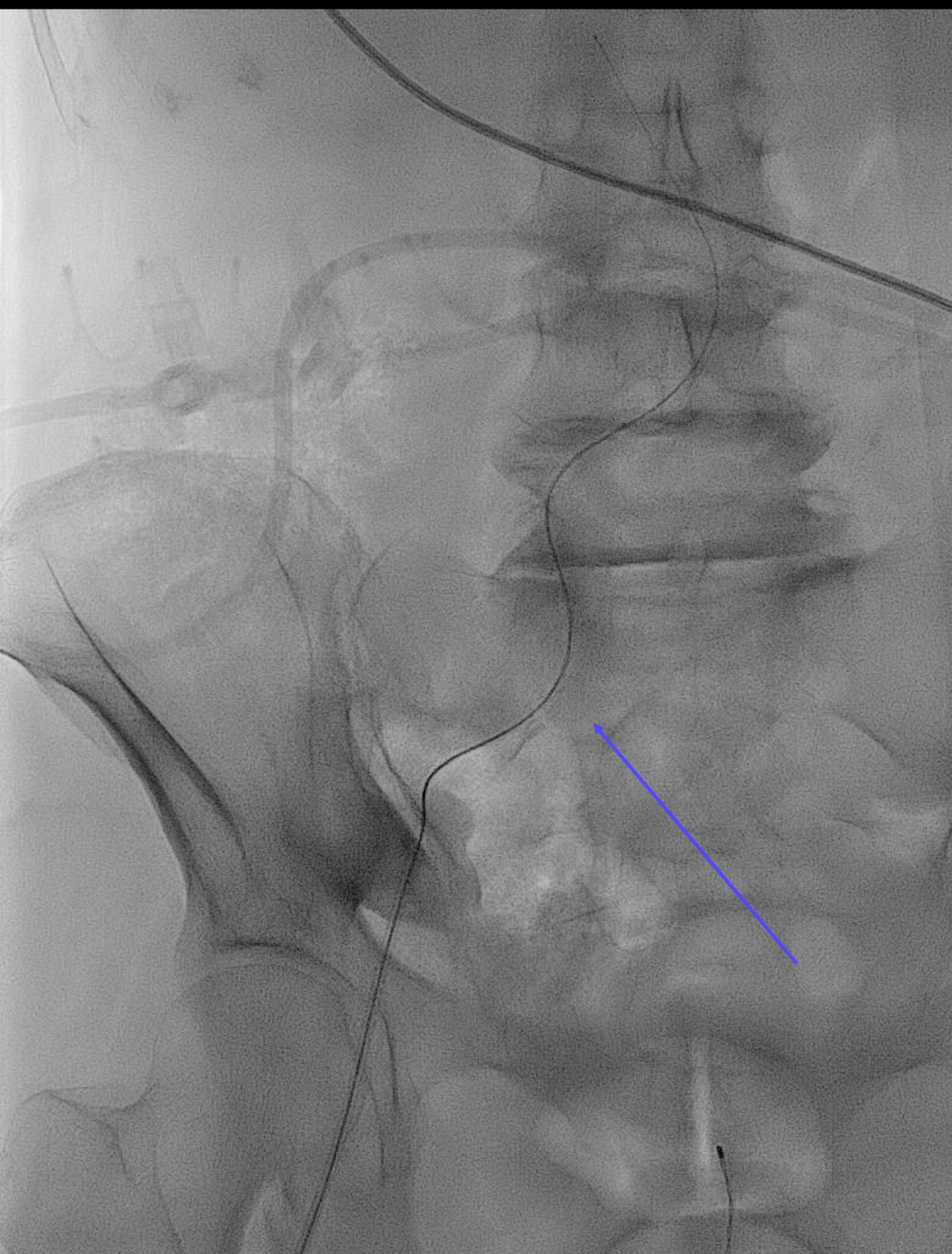
Neuroradiologia interventistica

Aneurismi



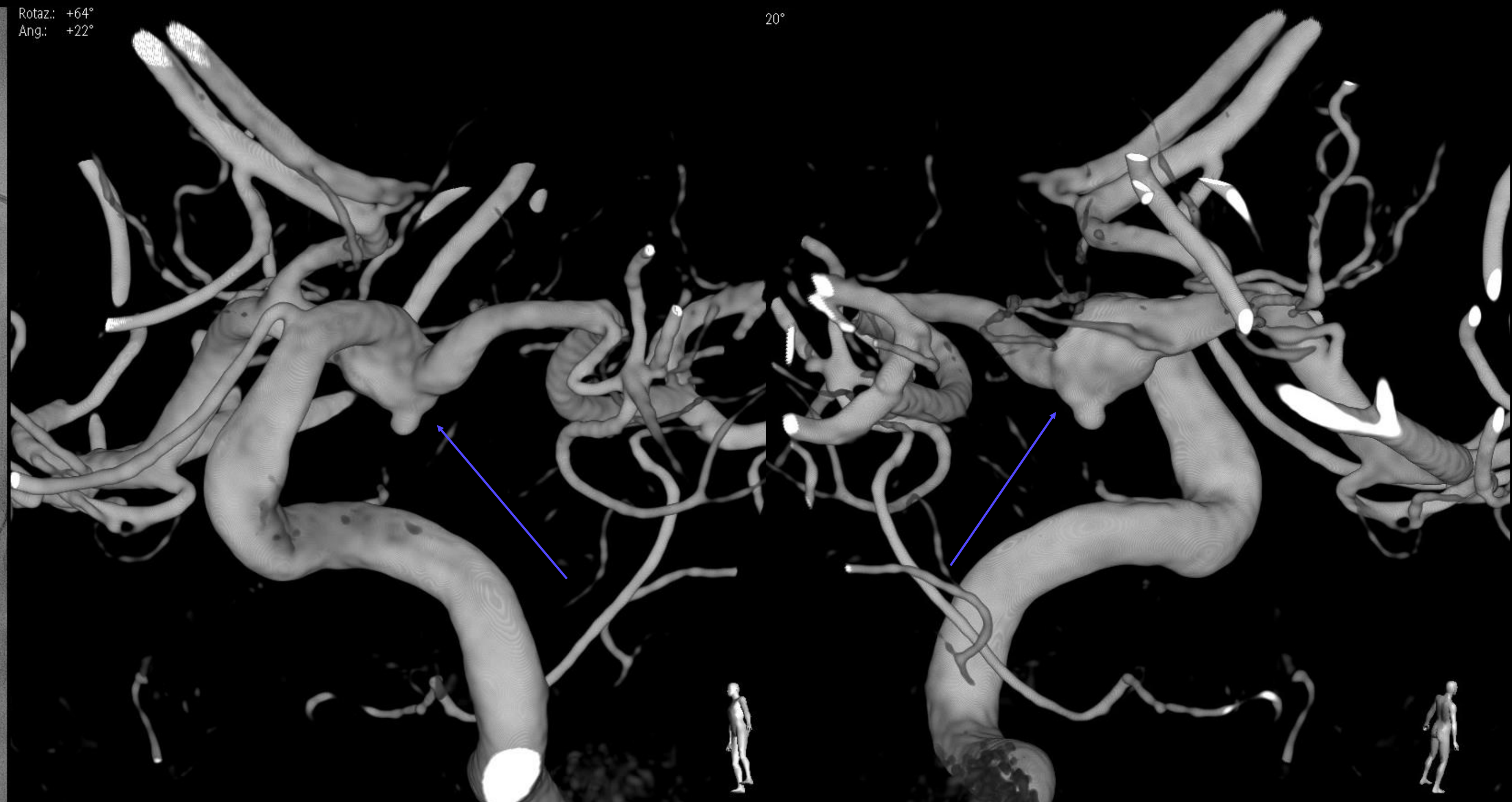
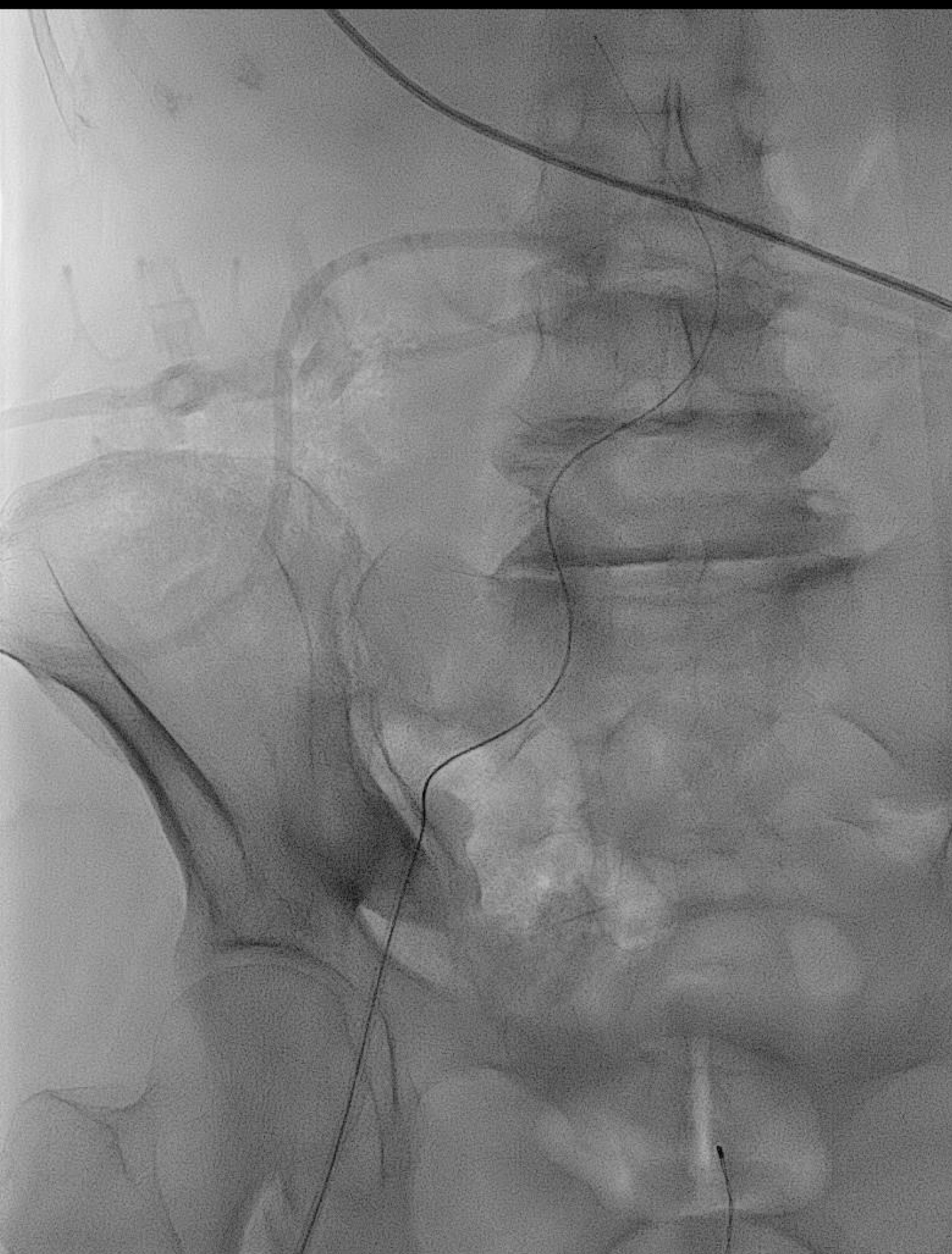
Neuroradiologia interventistica

Aneurismi



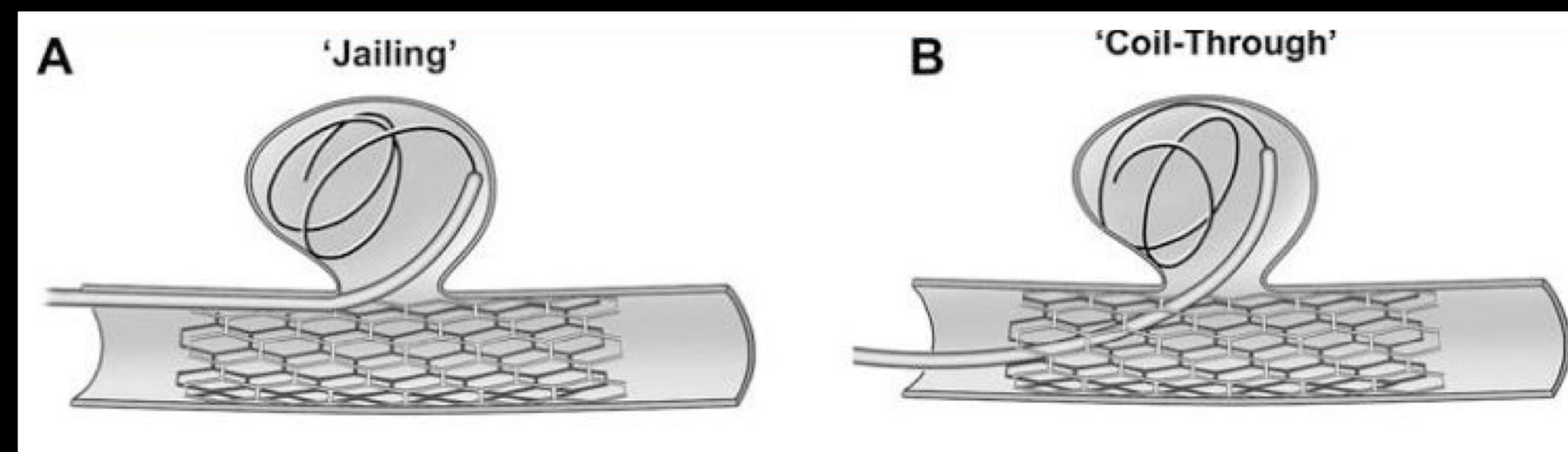
Neuroradiologia interventistica

Aneurismi



Neuroradiologia interventistica

Aneurismi



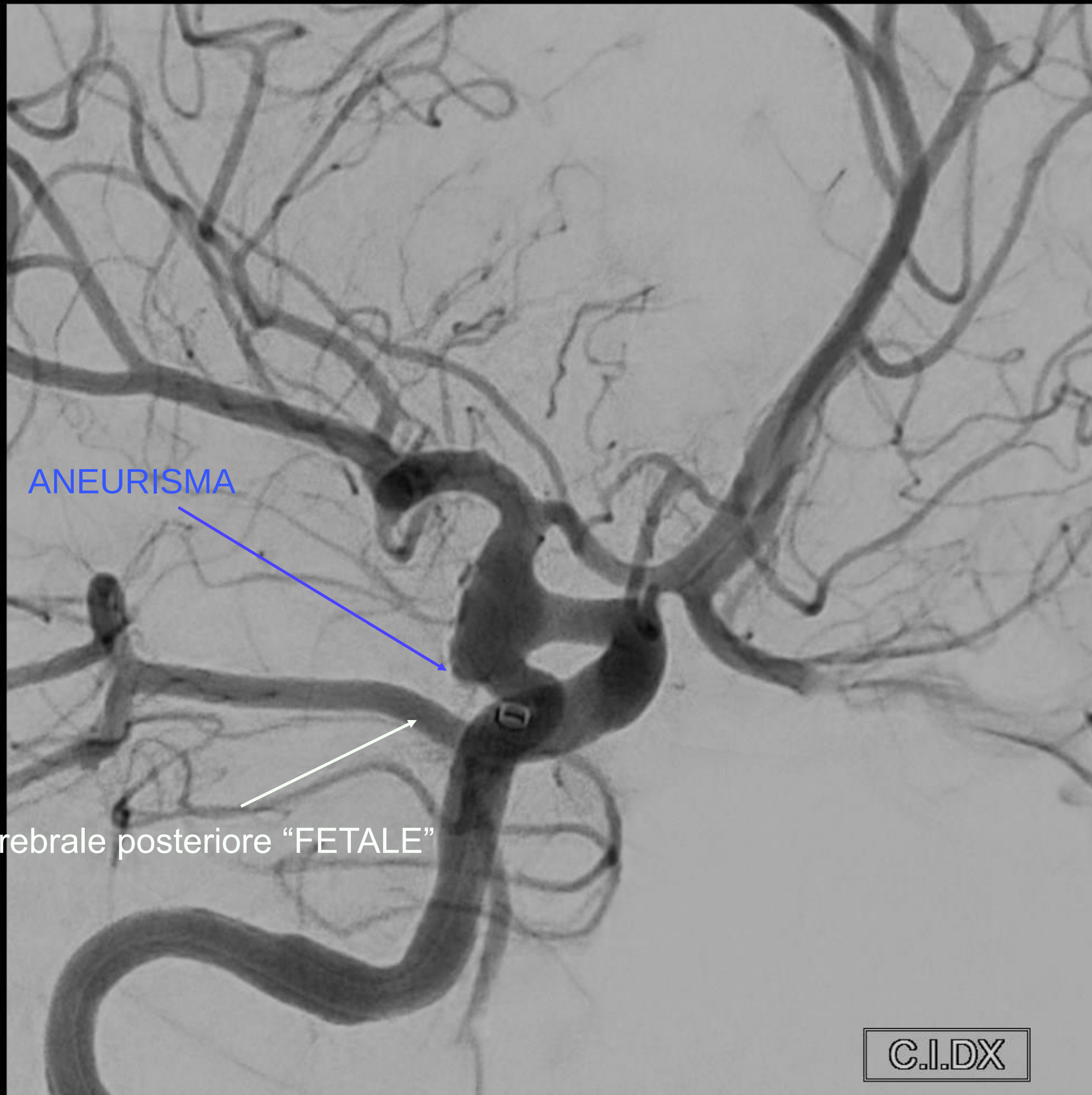
Neuroradiologia interventistica

Aneurismi



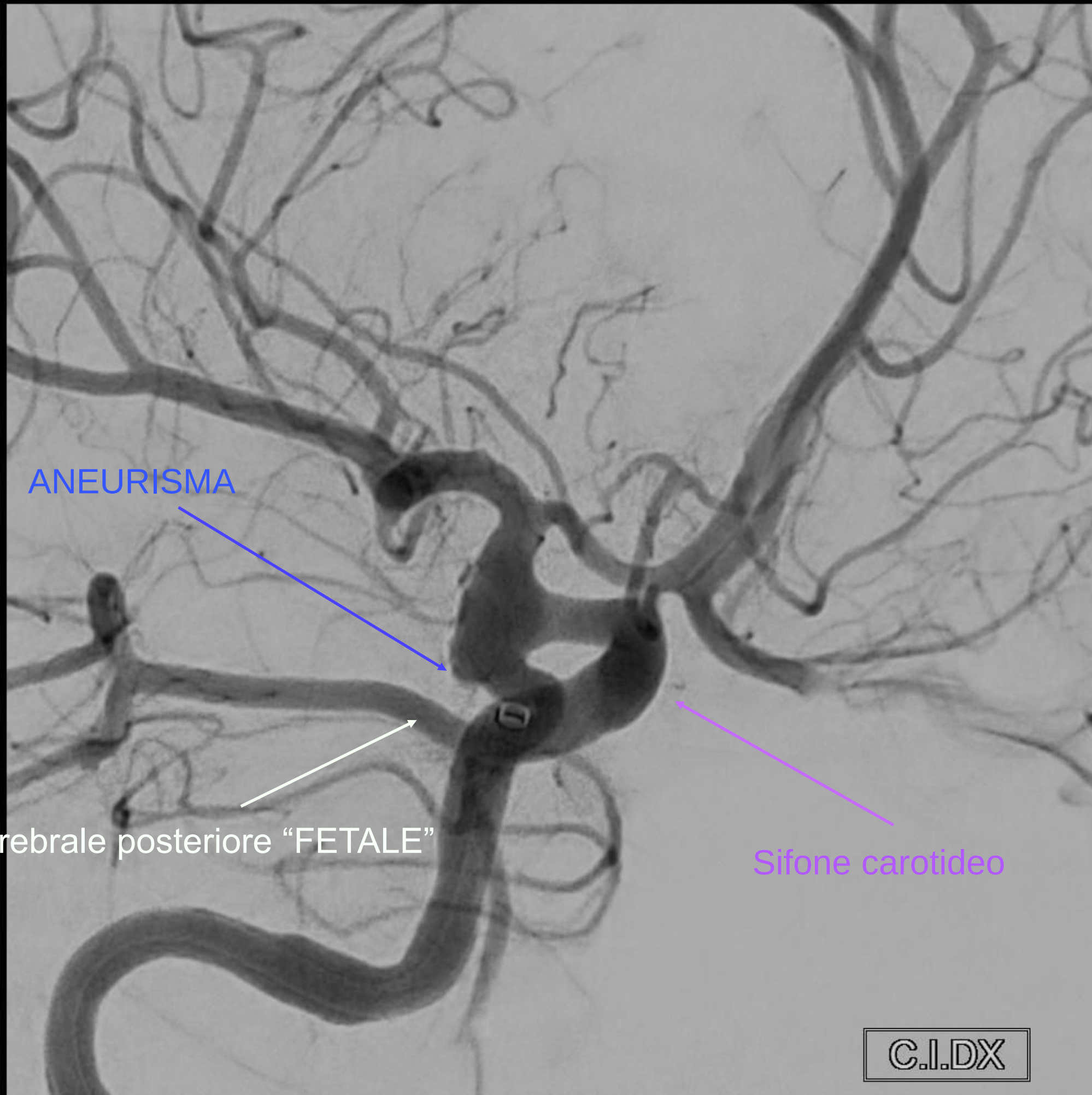
Neuroradiologia interventistica

Aneurismi



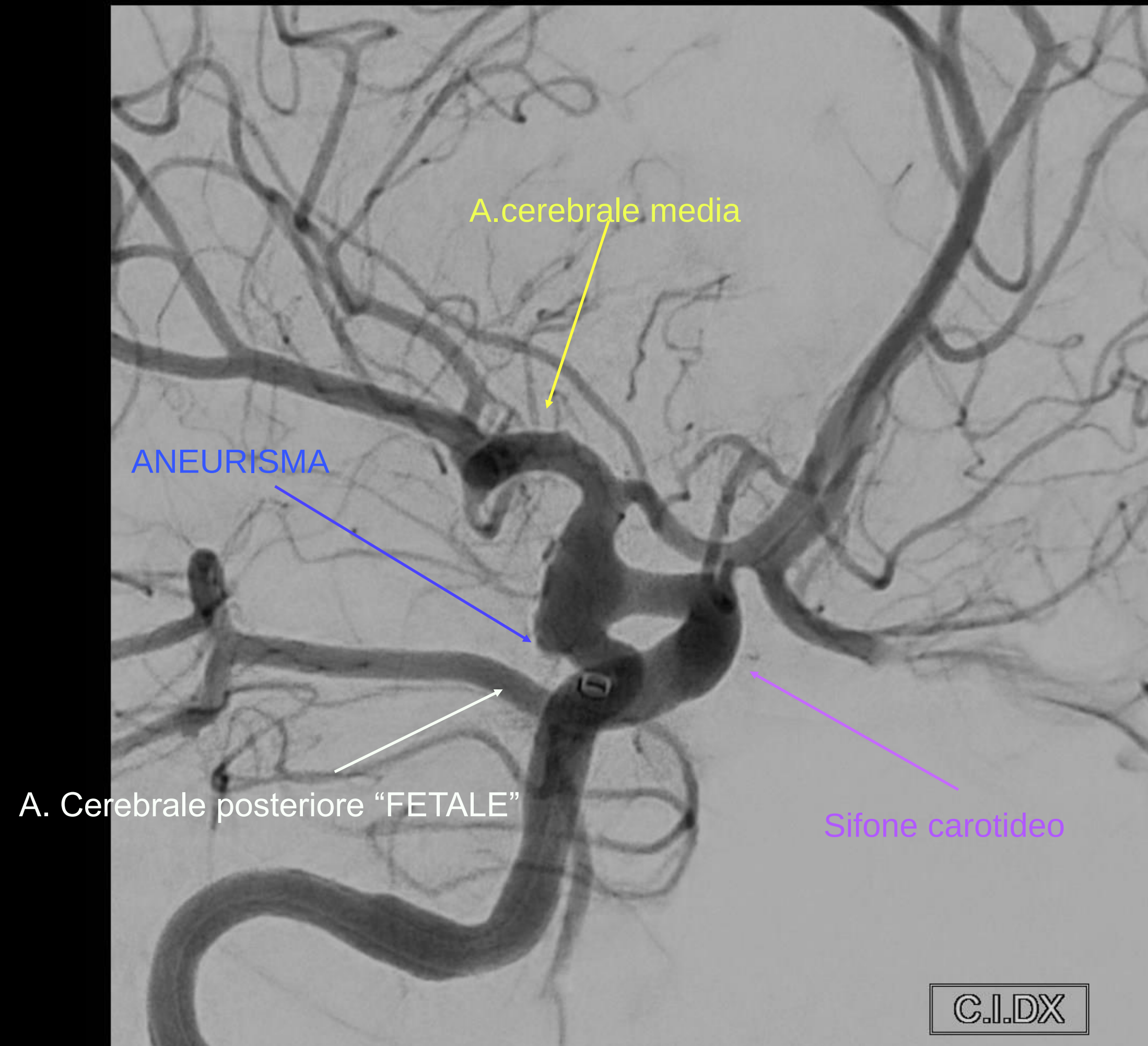
Neuroradiologia interventistica

Aneurismi



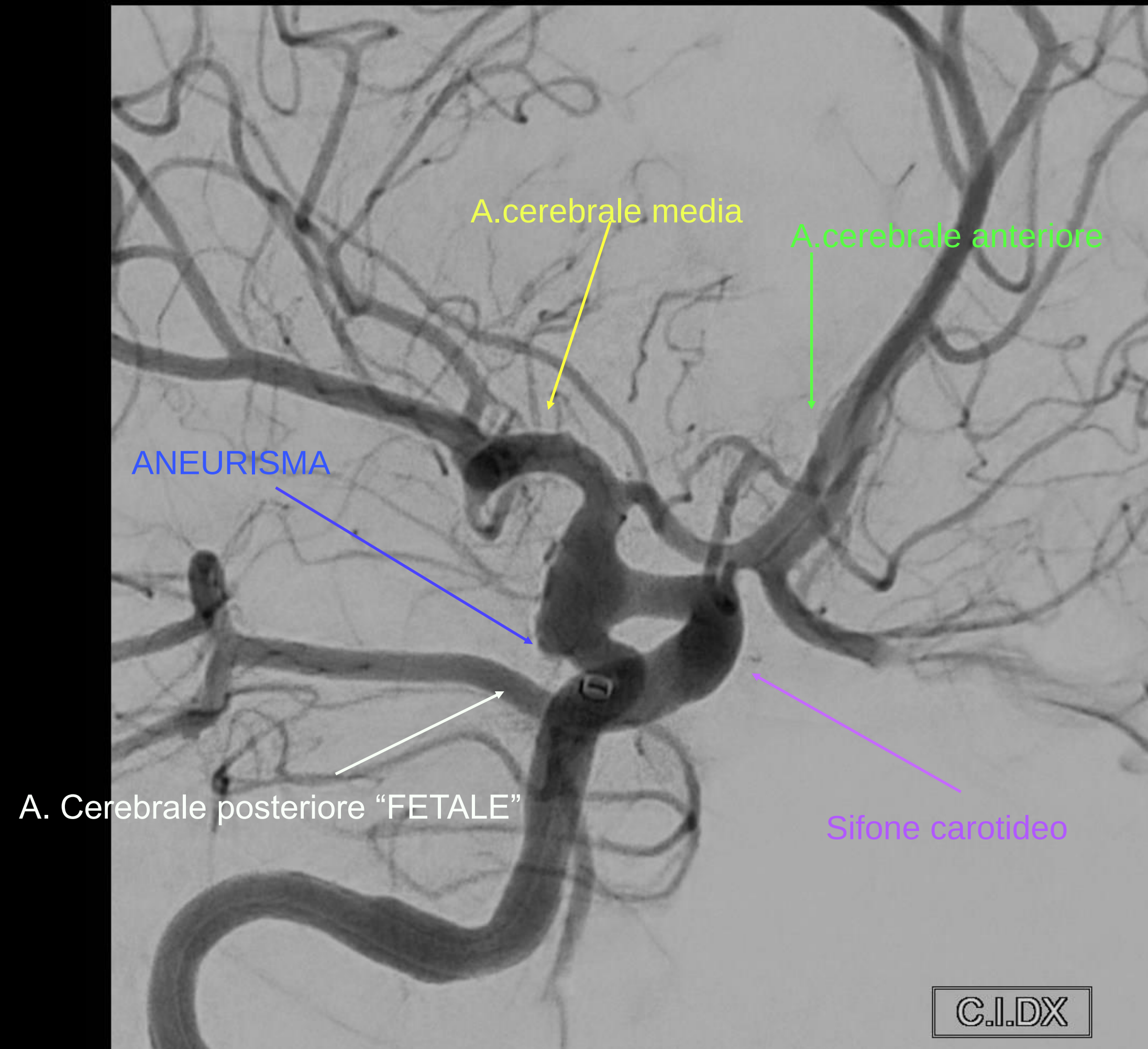
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Aneurismi



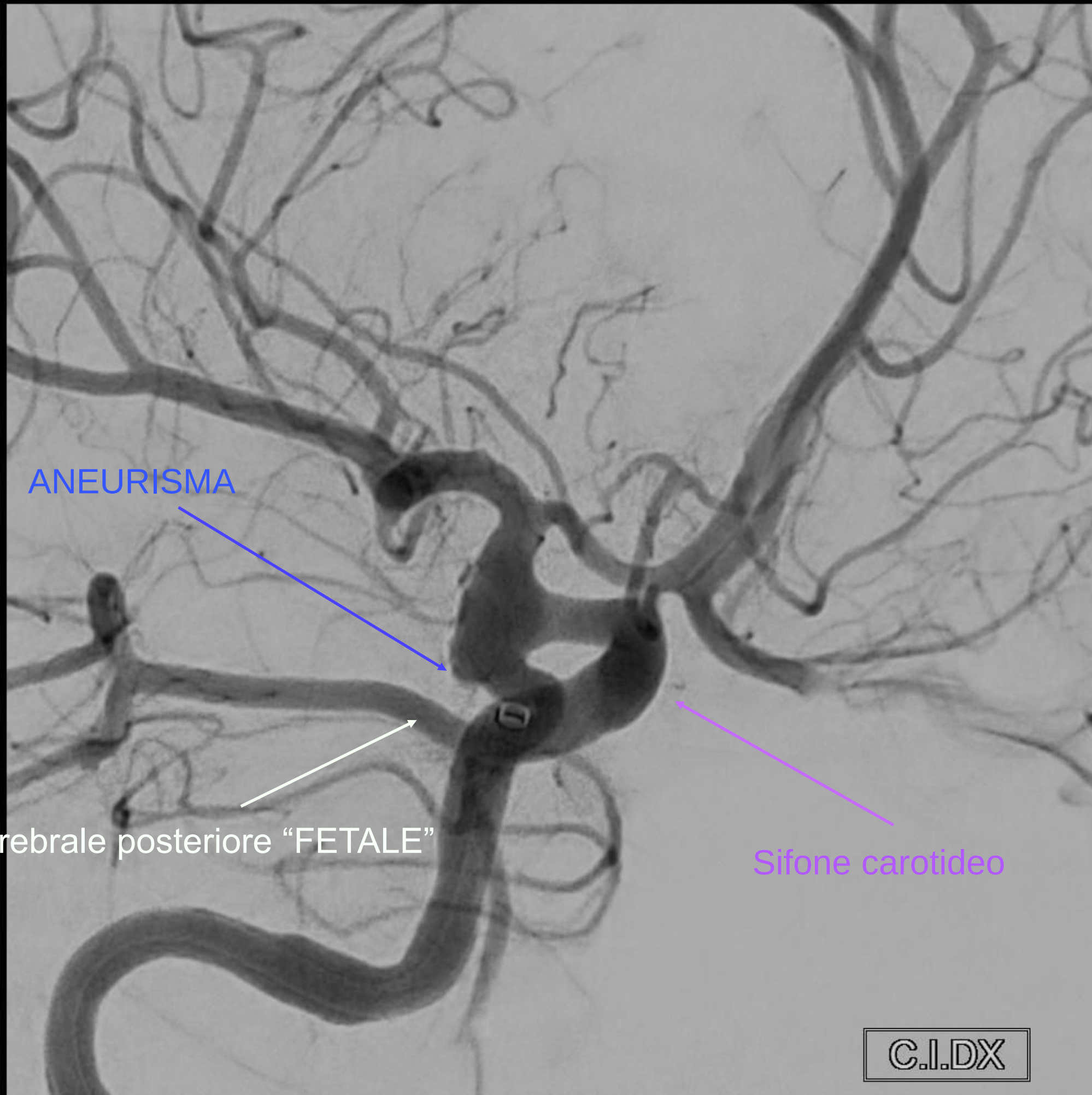
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Aneurismi



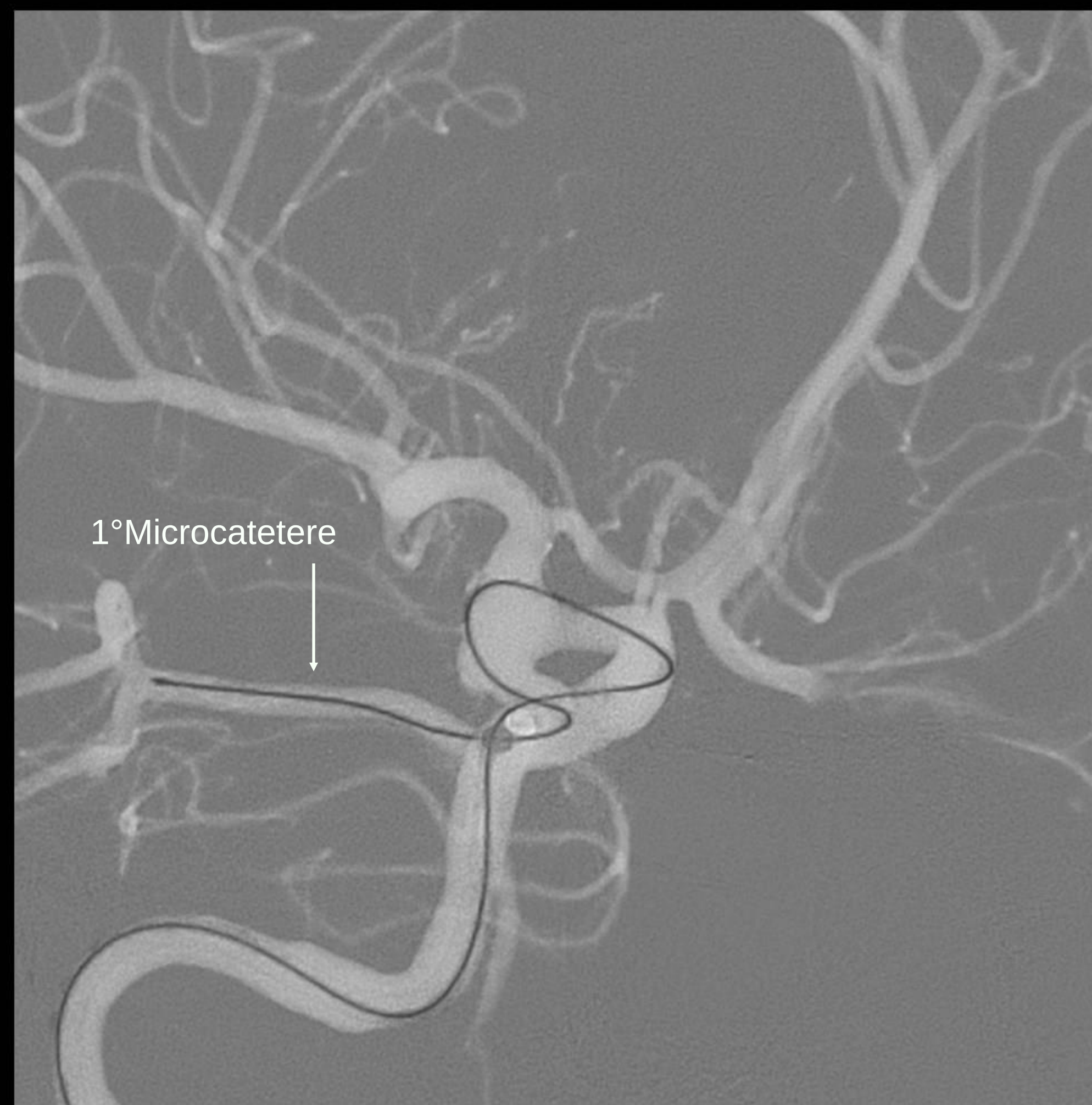
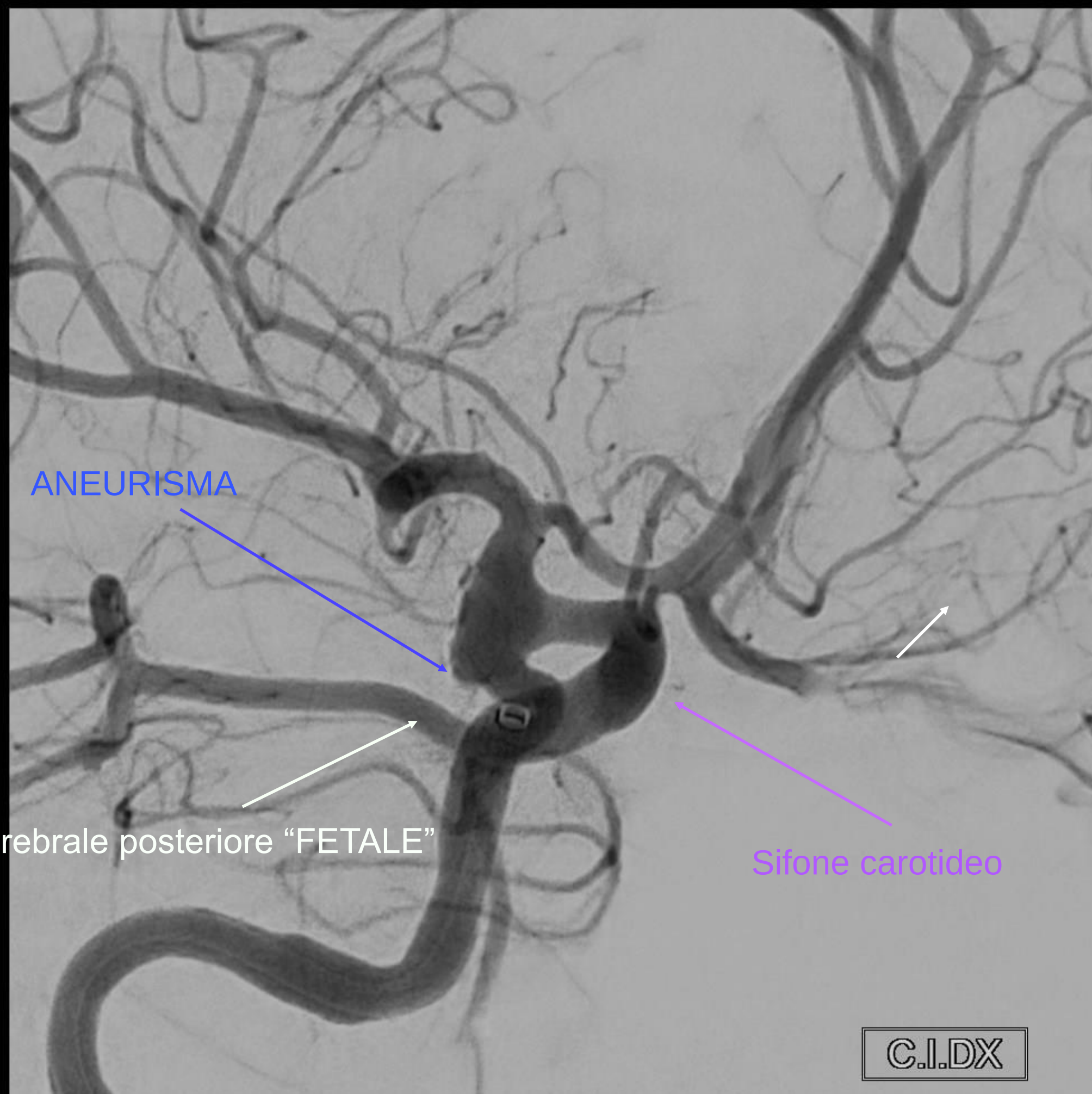
Neuroradiologia interventistica

Aneurismi



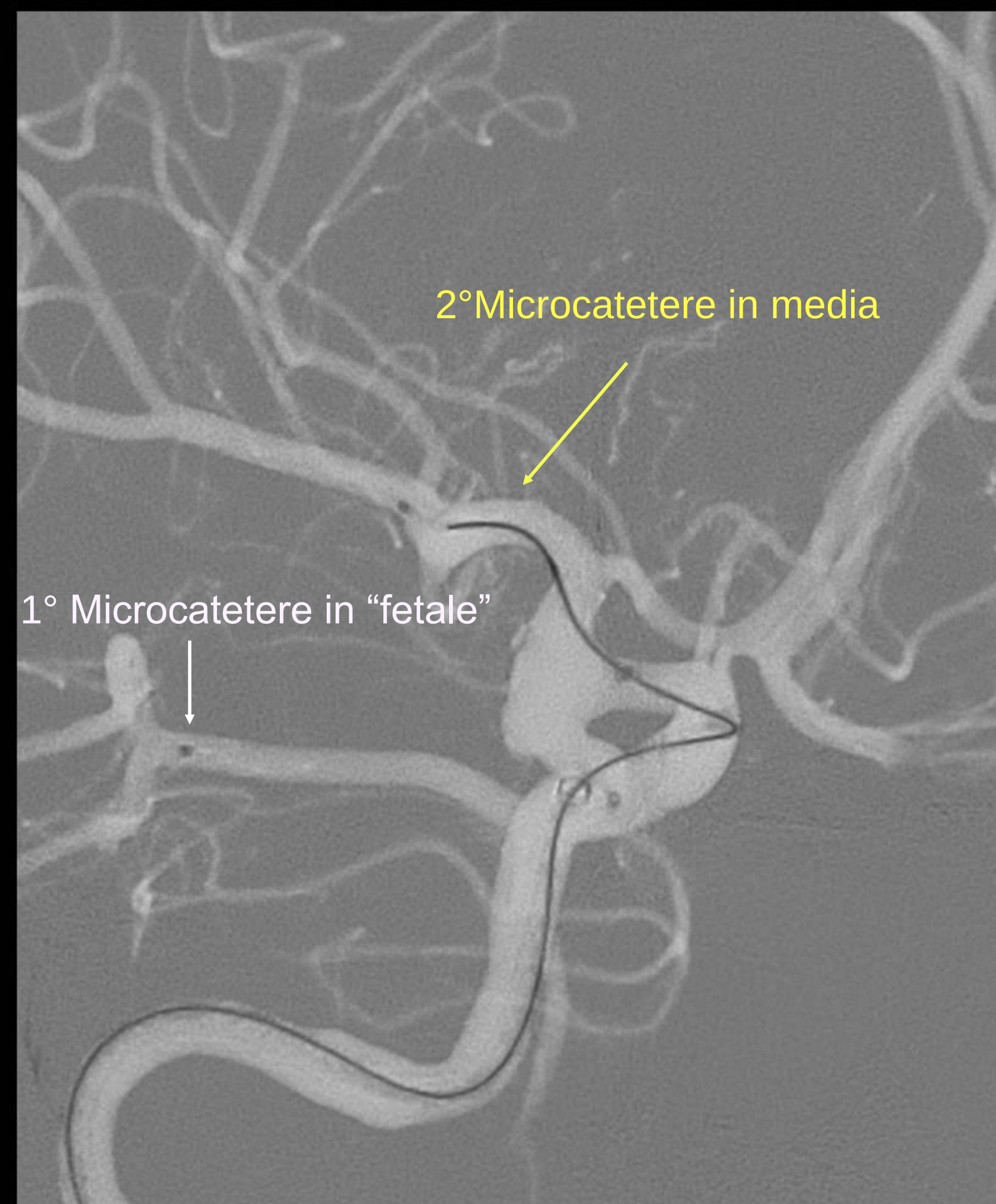
Neuroradiologia interventistica

Aneurismi



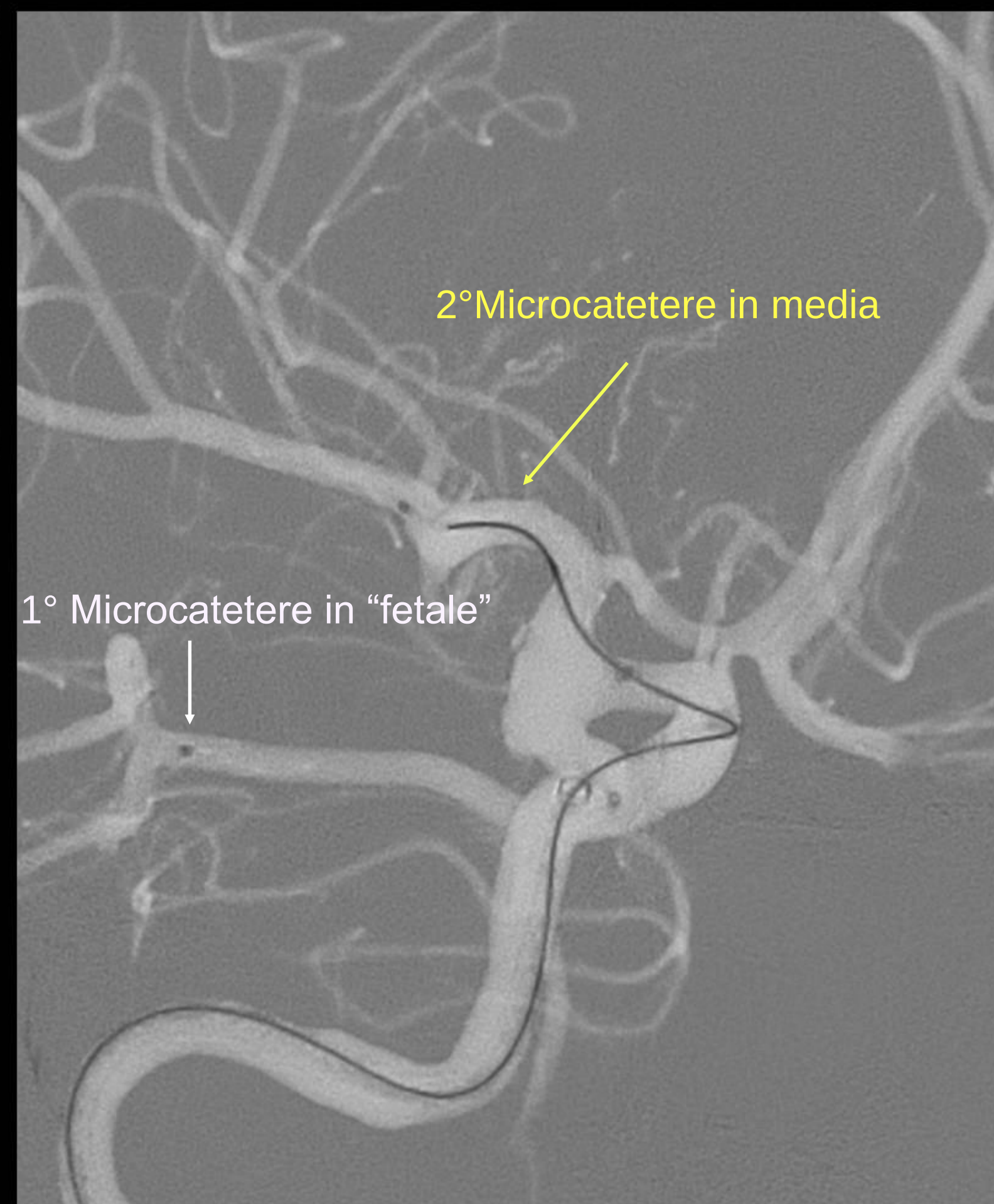
Neuroradiologia interventistica

Aneurismi



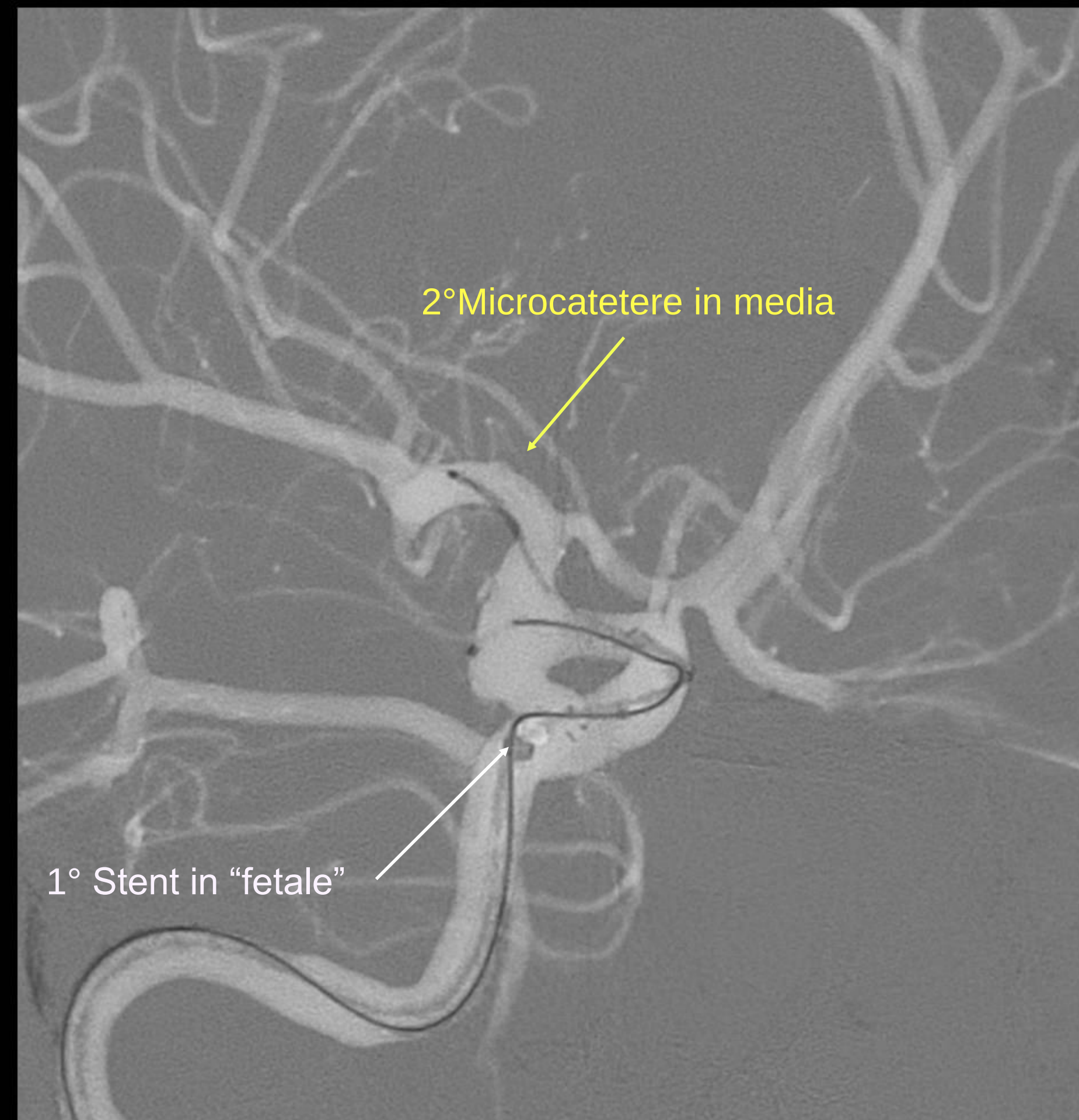
Neuroradiologia interventistica

Aneurismi



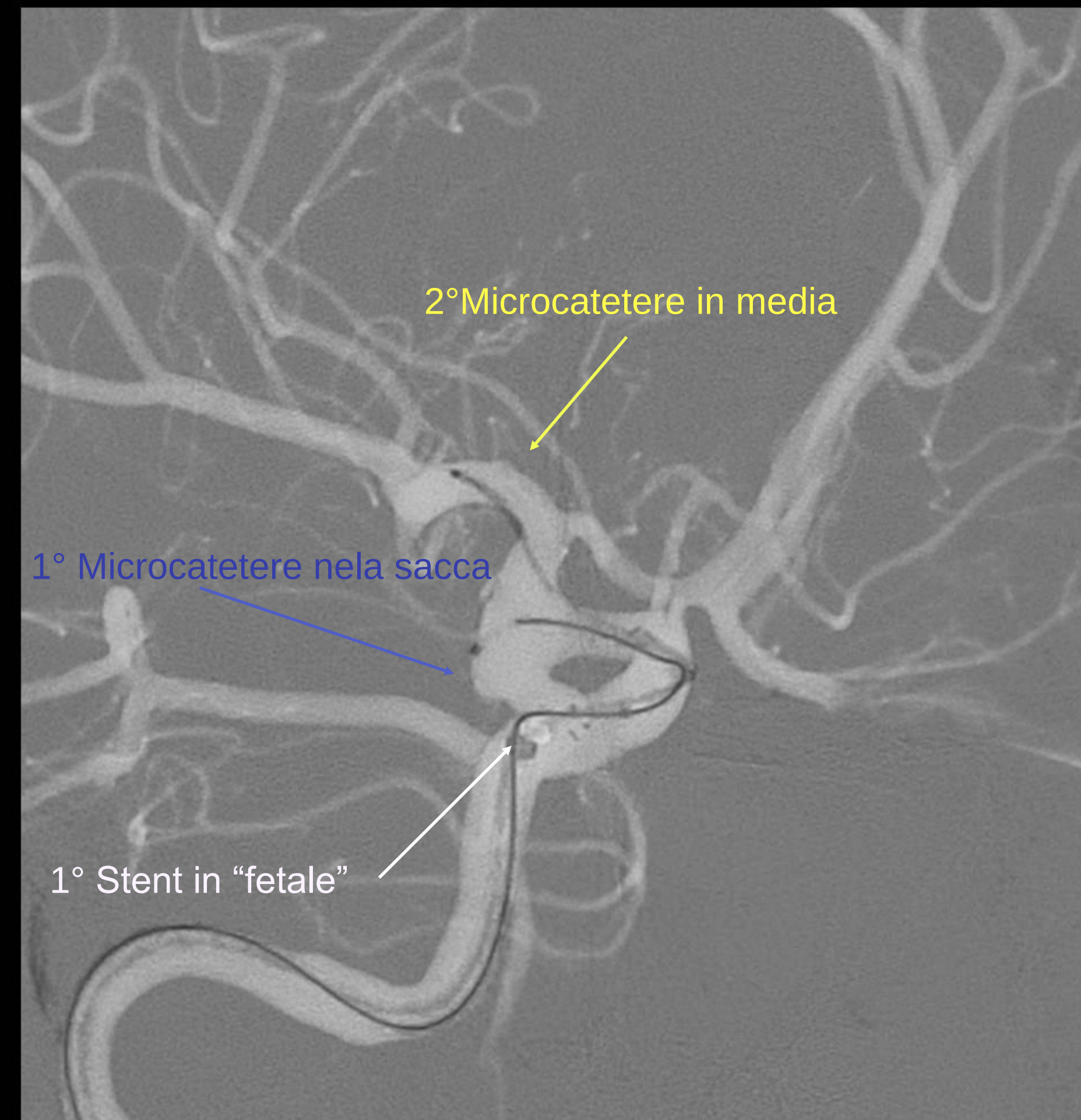
Neuroradiologia interventistica

Aneurismi



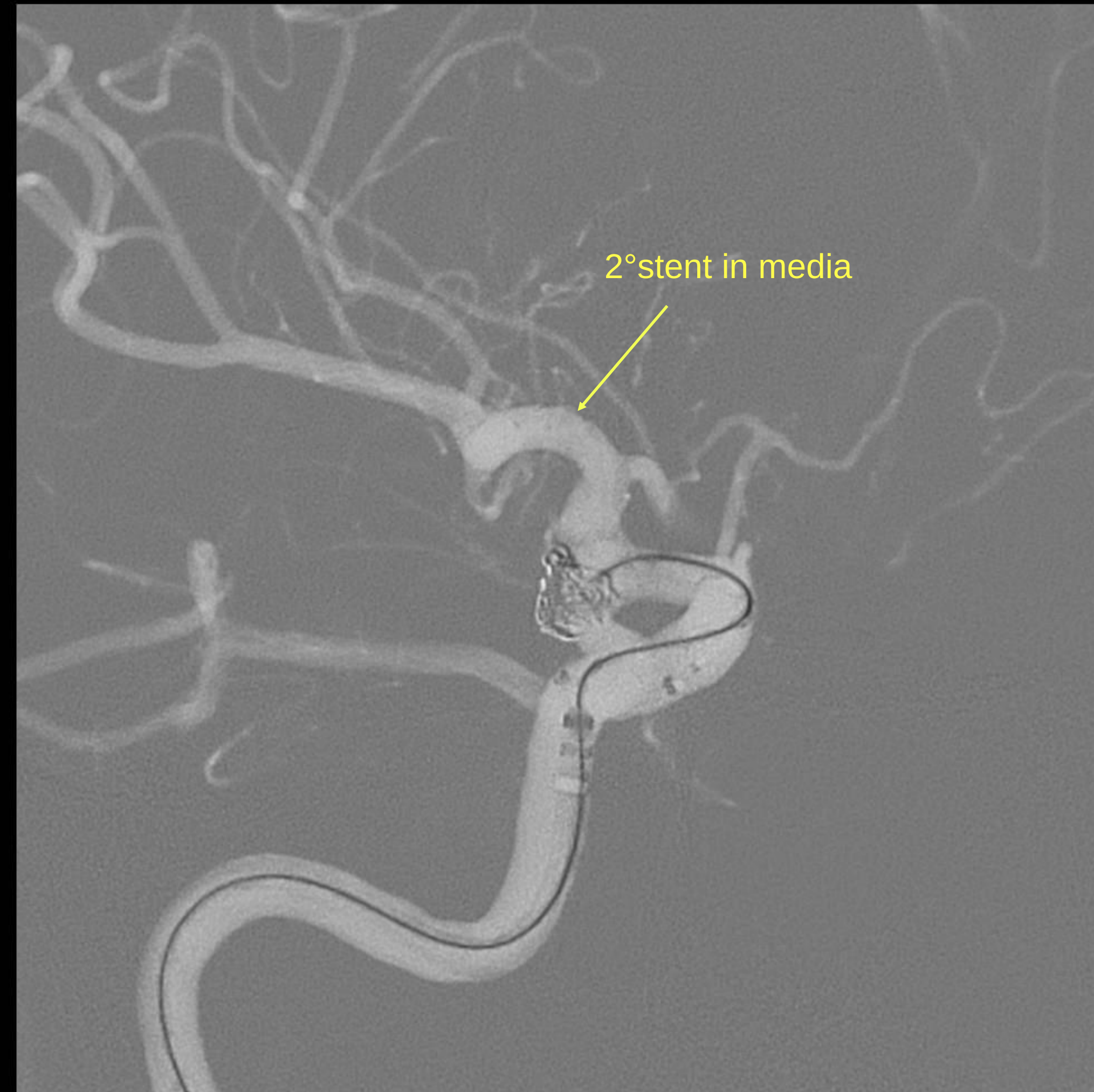
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Aneurismi



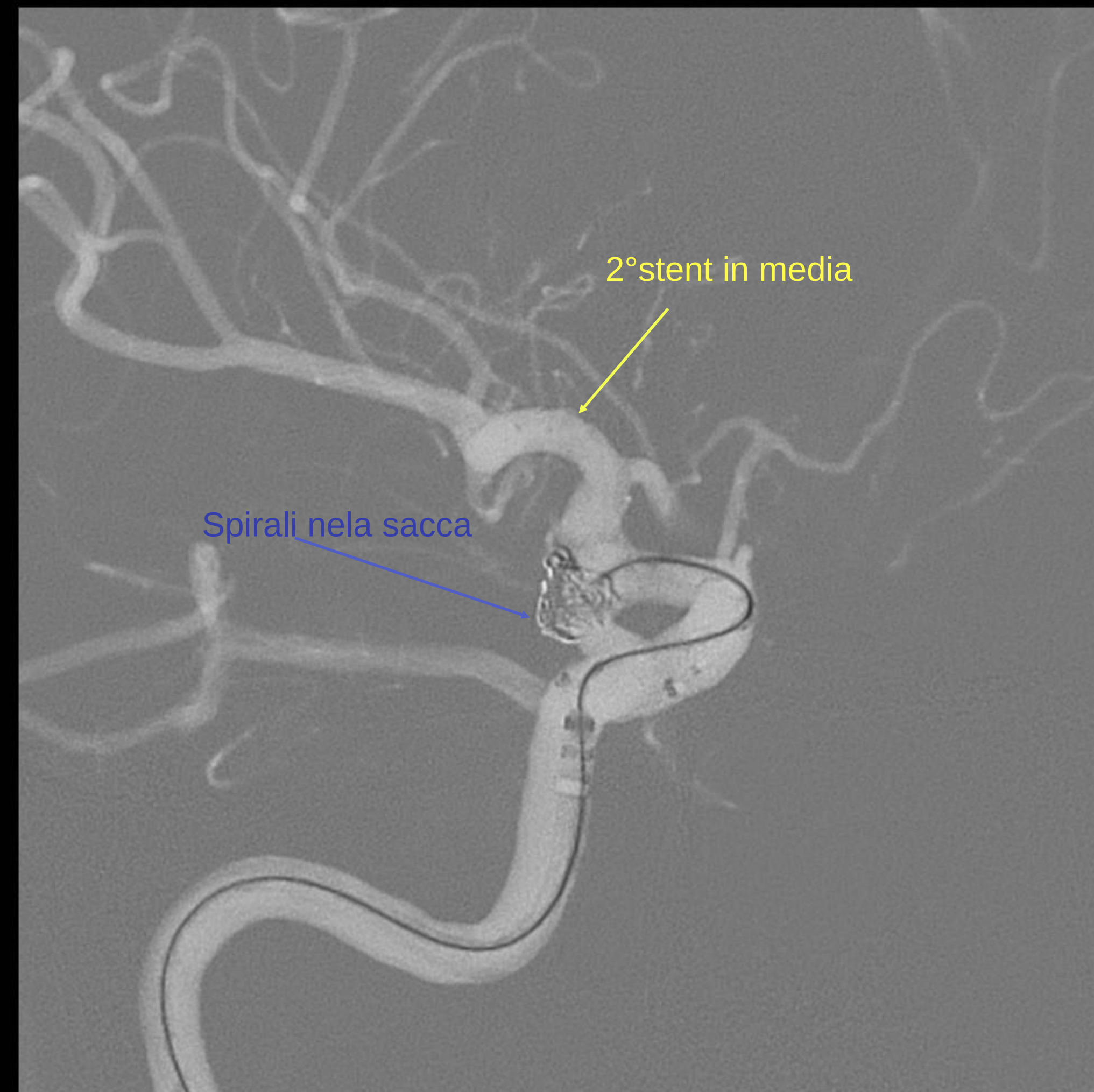
Neuroradiologia interventistica

Aneurismi



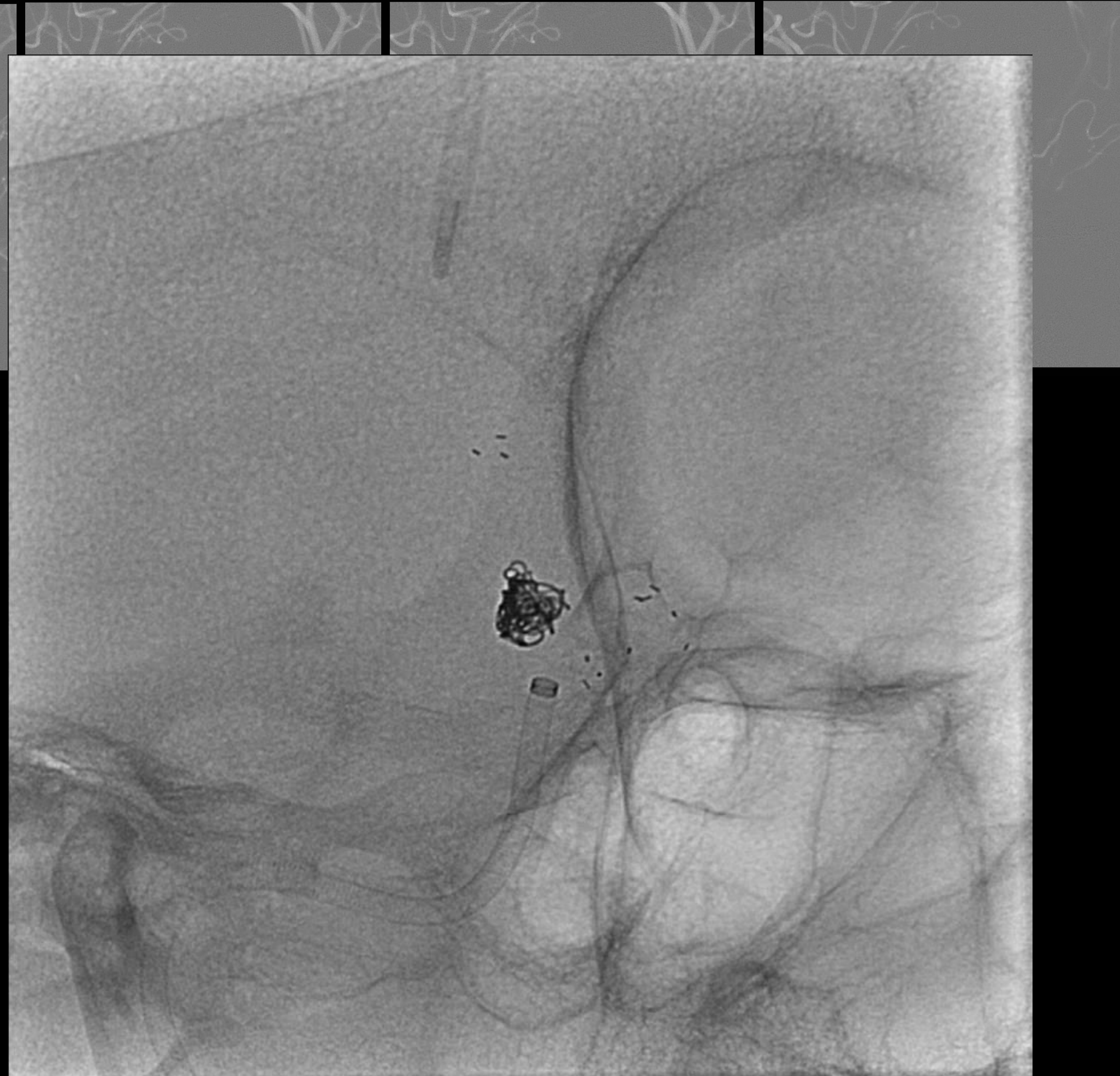
Neuroradiologia interventistica

Aneurismi



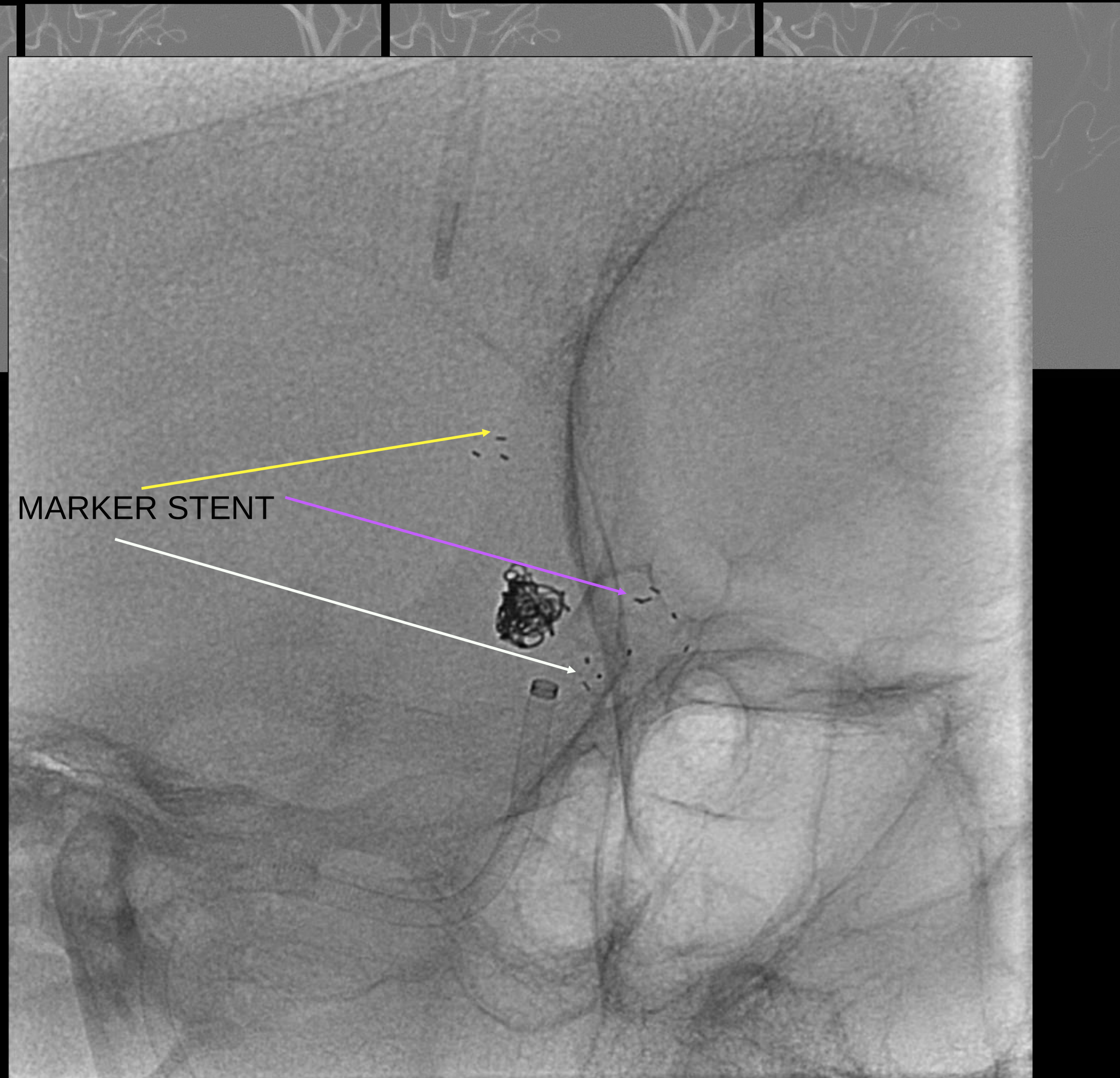
Neuroradiologia interventistica

Aneurismi



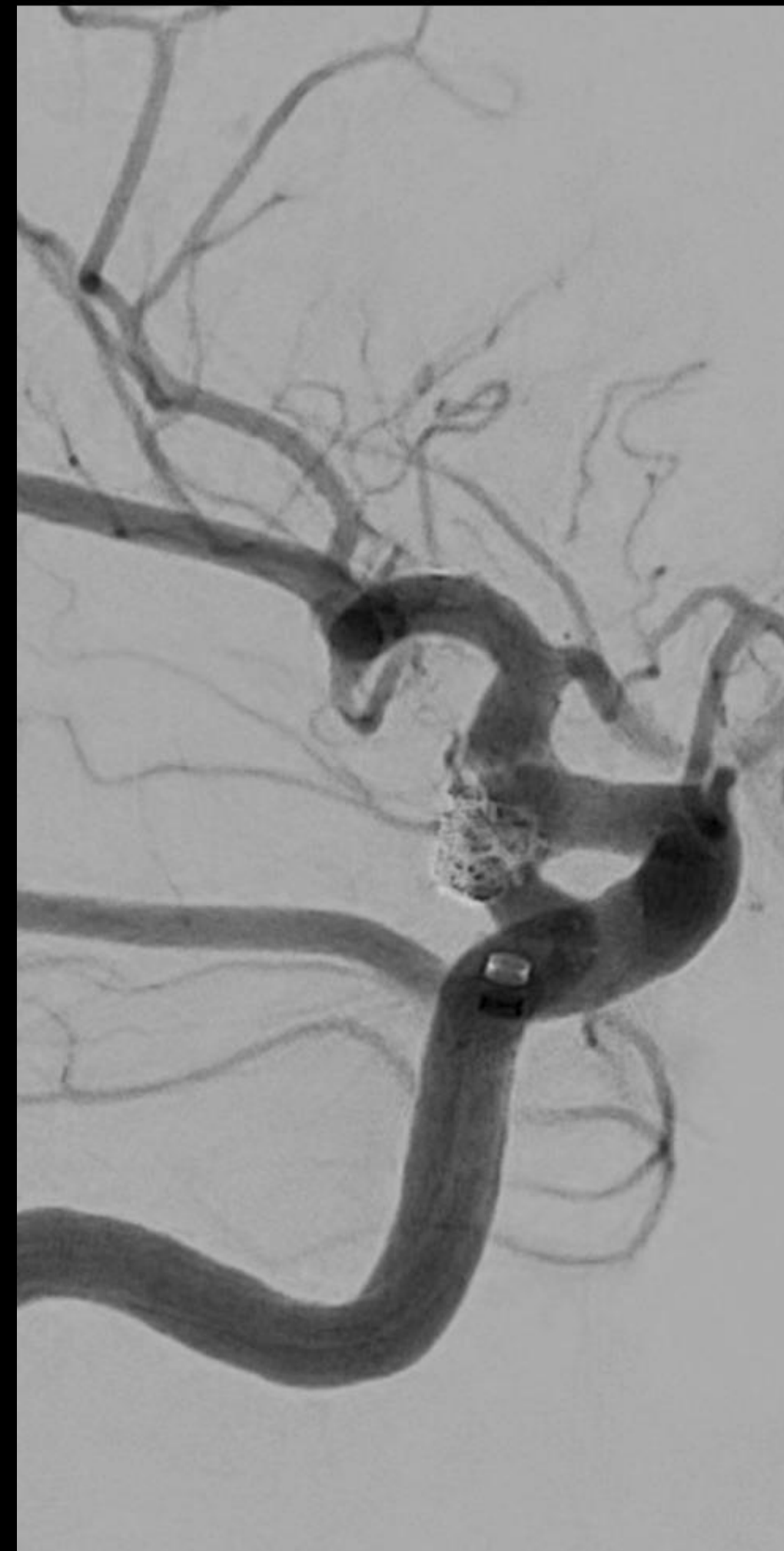
Neuroradiologia interventistica

Aneurismi



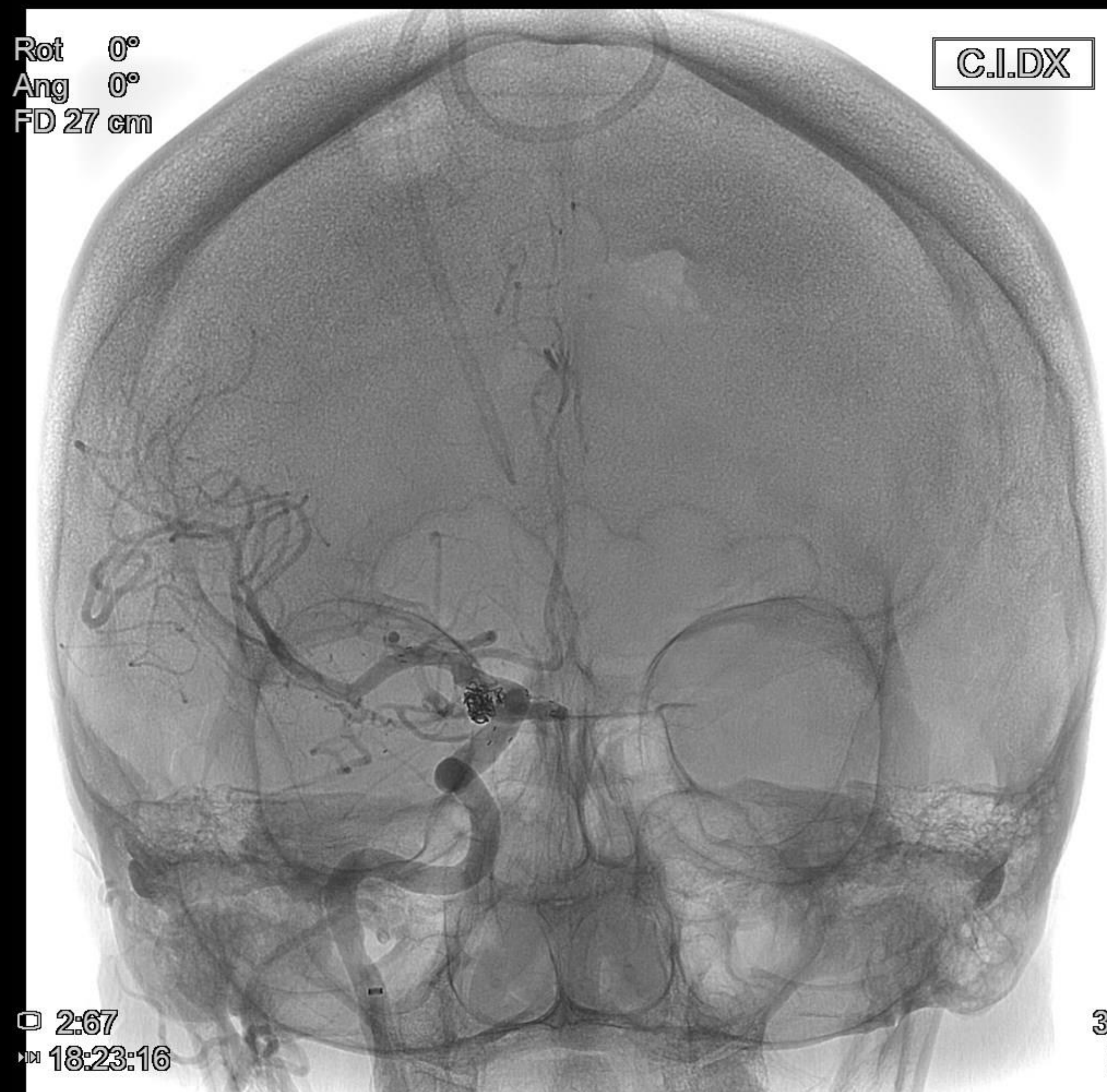
Neuroradiologia interventistica

Aneurismi



Neuroradiologia interventistica

Aneurismi



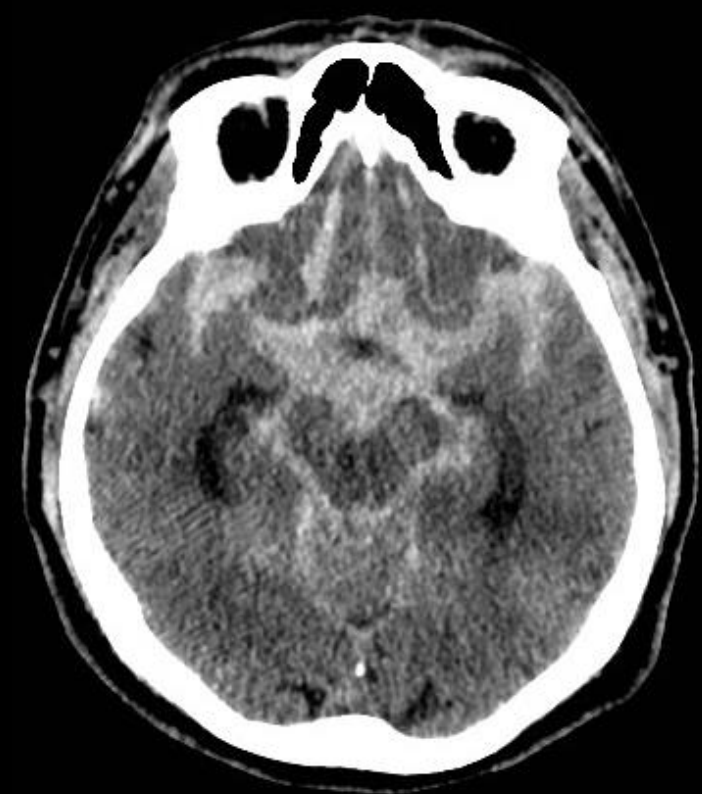
Neuroradiologia interventistica

Aneurismi



Neuroradiologia interventistica

Emorragie intracraniche



Neuroradiologia interventistica

Aneurismi



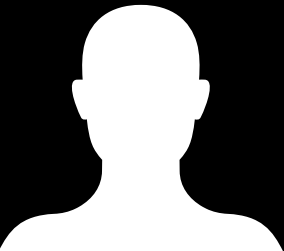
F 72 anni

Cefalea

GCS 15

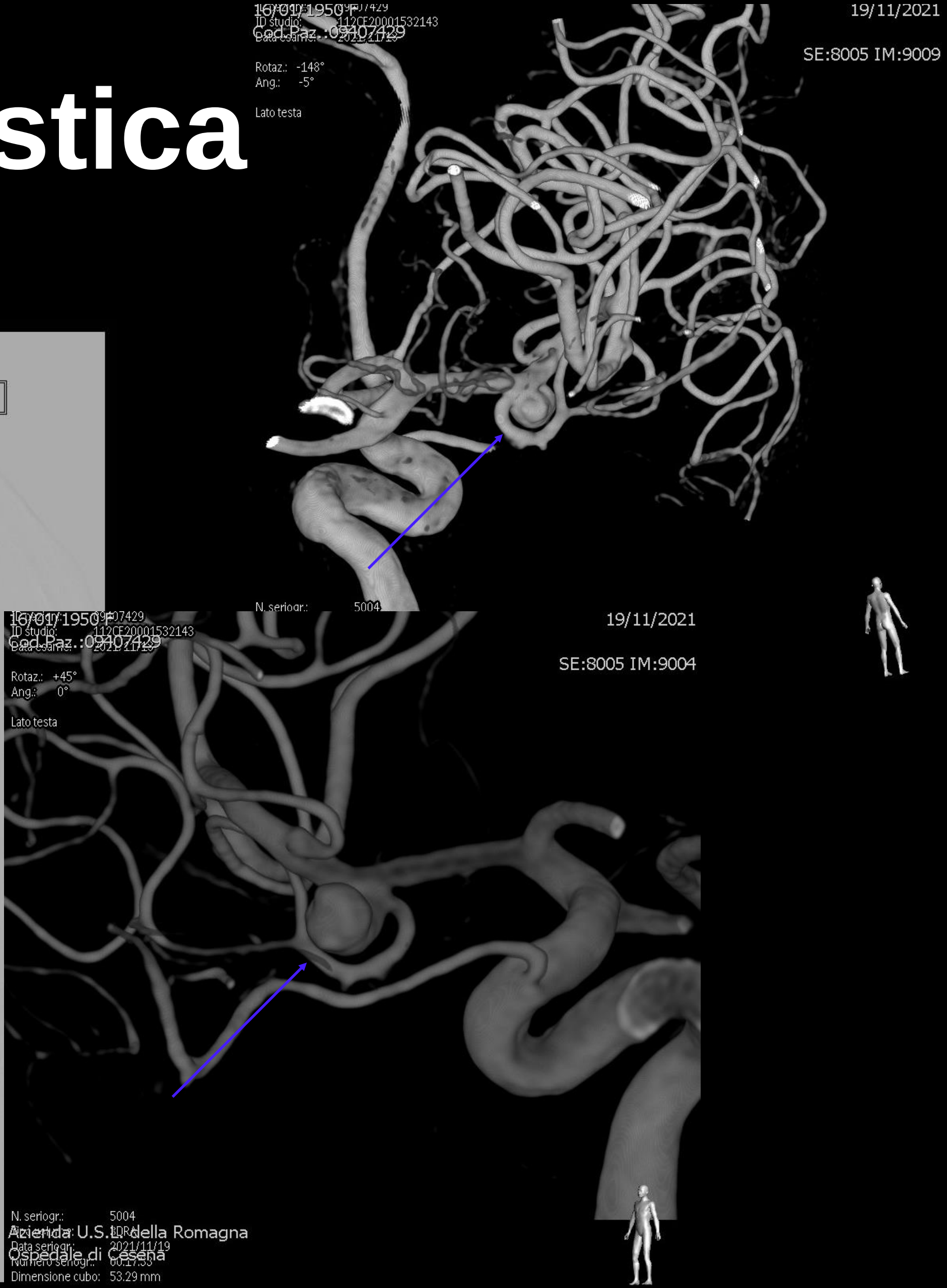
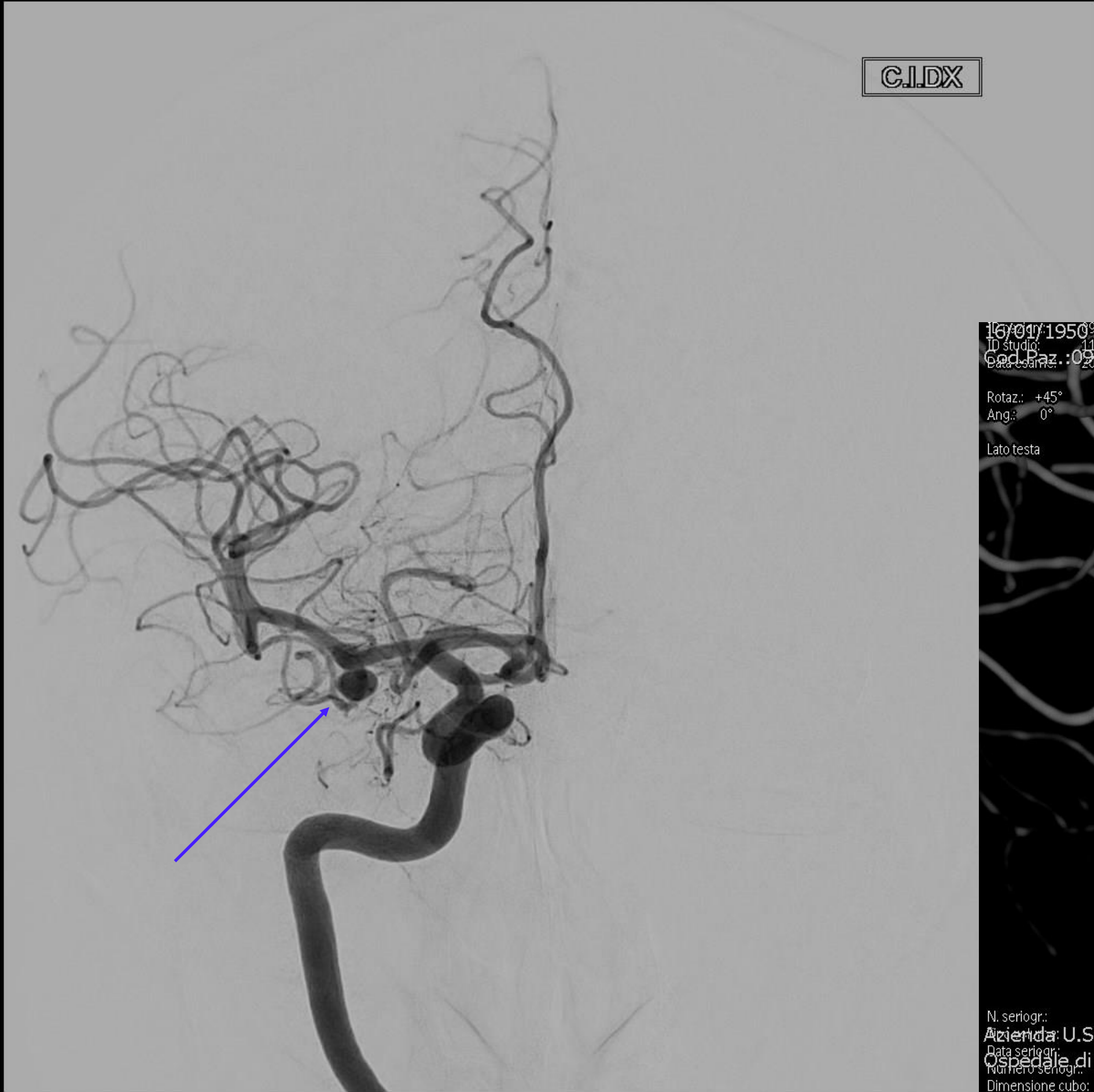
Neuroradiologia interventistica

Aneurismi



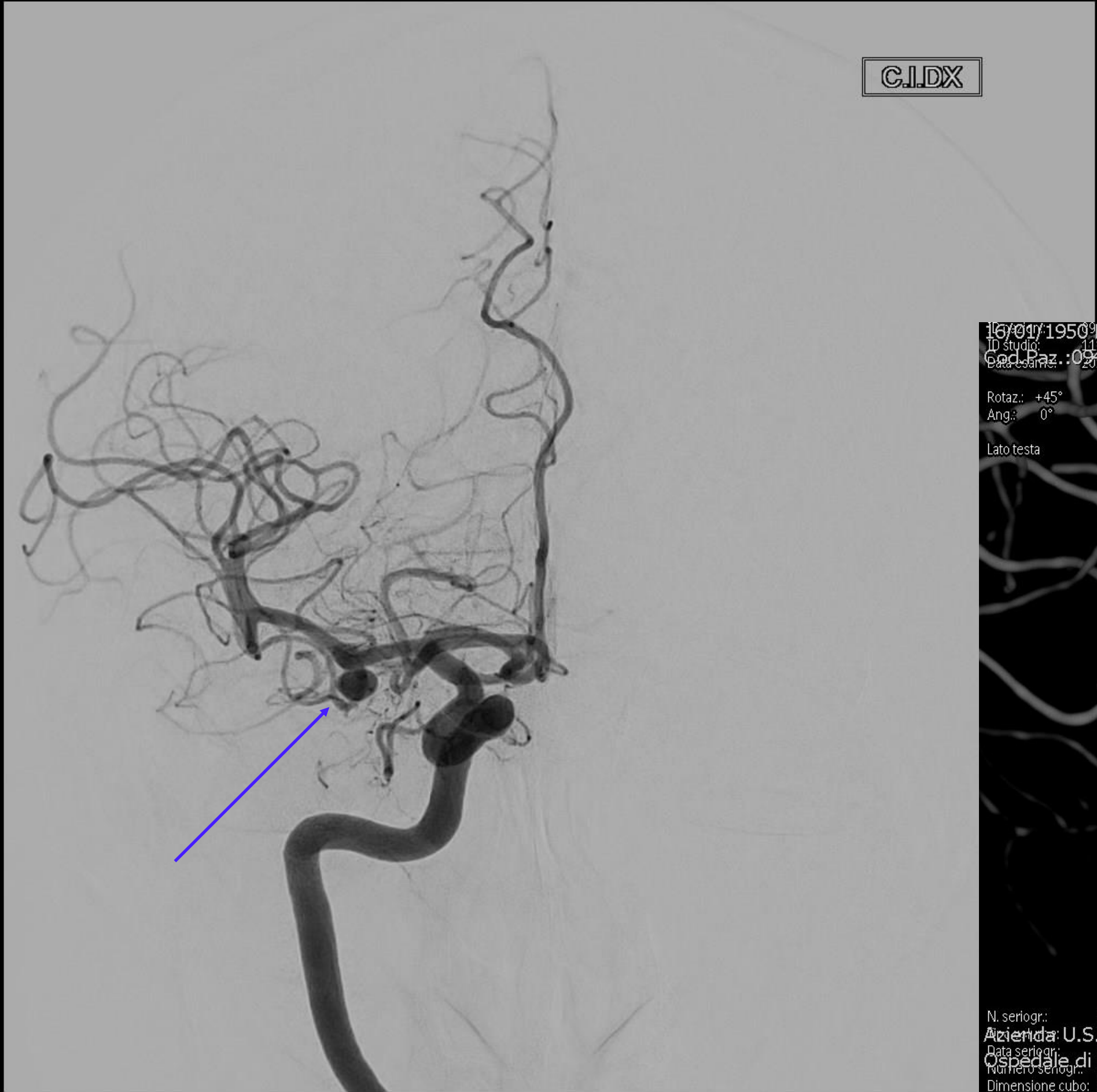
Neuroradiologia interventistica

Aneurismi



Neuroradiologia interventistica

Aneurismi



Neuroradiologia interventistica

Aneurismi

16/01/1950 F
Azienda U.S.L. della Romagna
Cod. Paz.: 09407429
FD 15 cm

19/11/2021 16/01/1950 F
10:03:10 Cod. Paz.: 09407429
SE:6 IM

19/11/2021
10:32:50
SE:9 IM:9



Neuroradiologia interventistica

Aneurismi

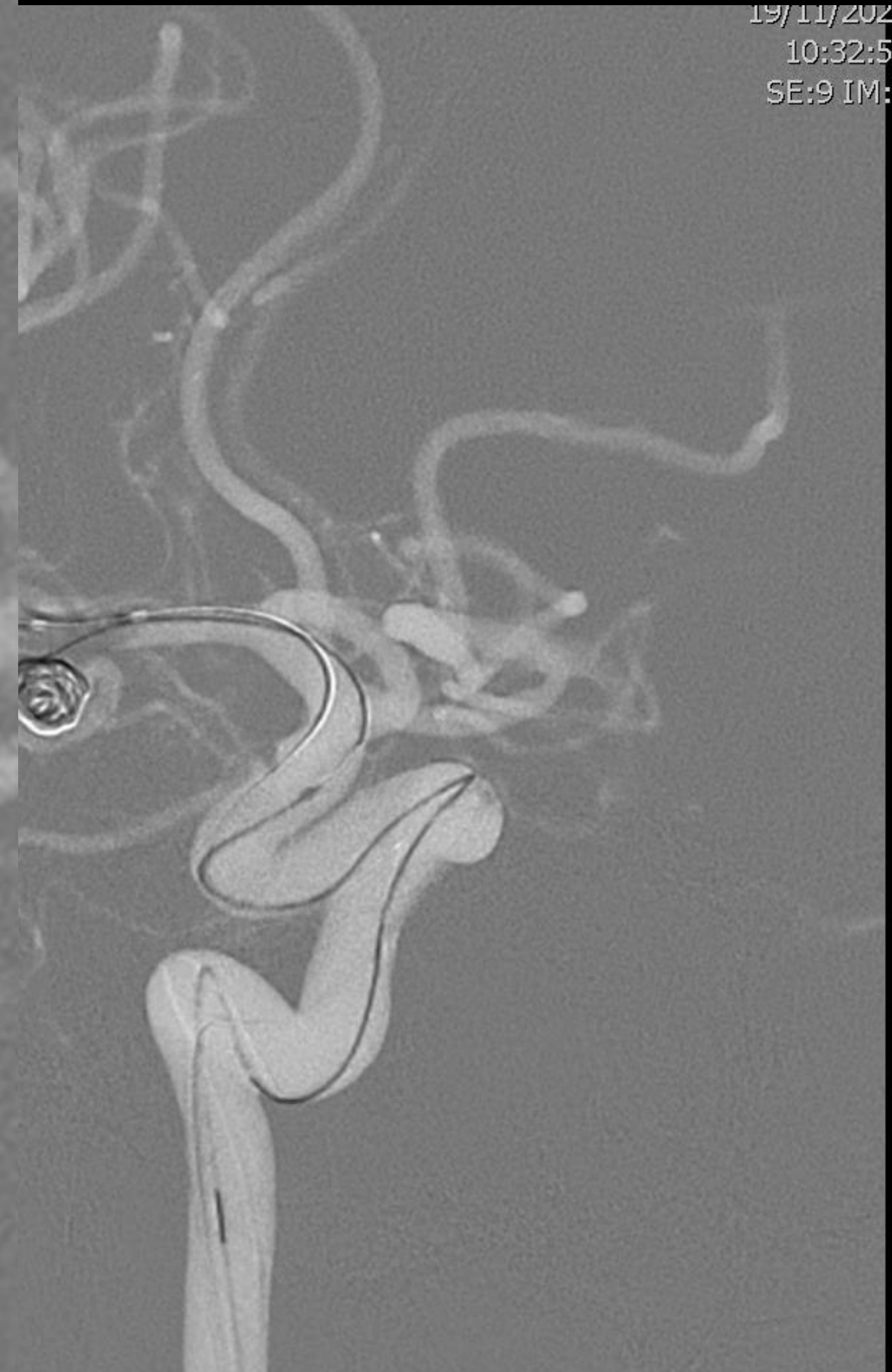
16/01/1950F
App Paz 107429
FD 15 cm



0:00
2:00
Azienda U.S.L. della Romagna
Ospedale di Cesena



19/11/2021
10:32:50
SE:9 IM:9



Neuroradiologia interventistica

Aneurismi

16/01/1950F

Azienda U.S.L. della Romagna

107429

FD 15 cm

0:00

2:00

13:03:01

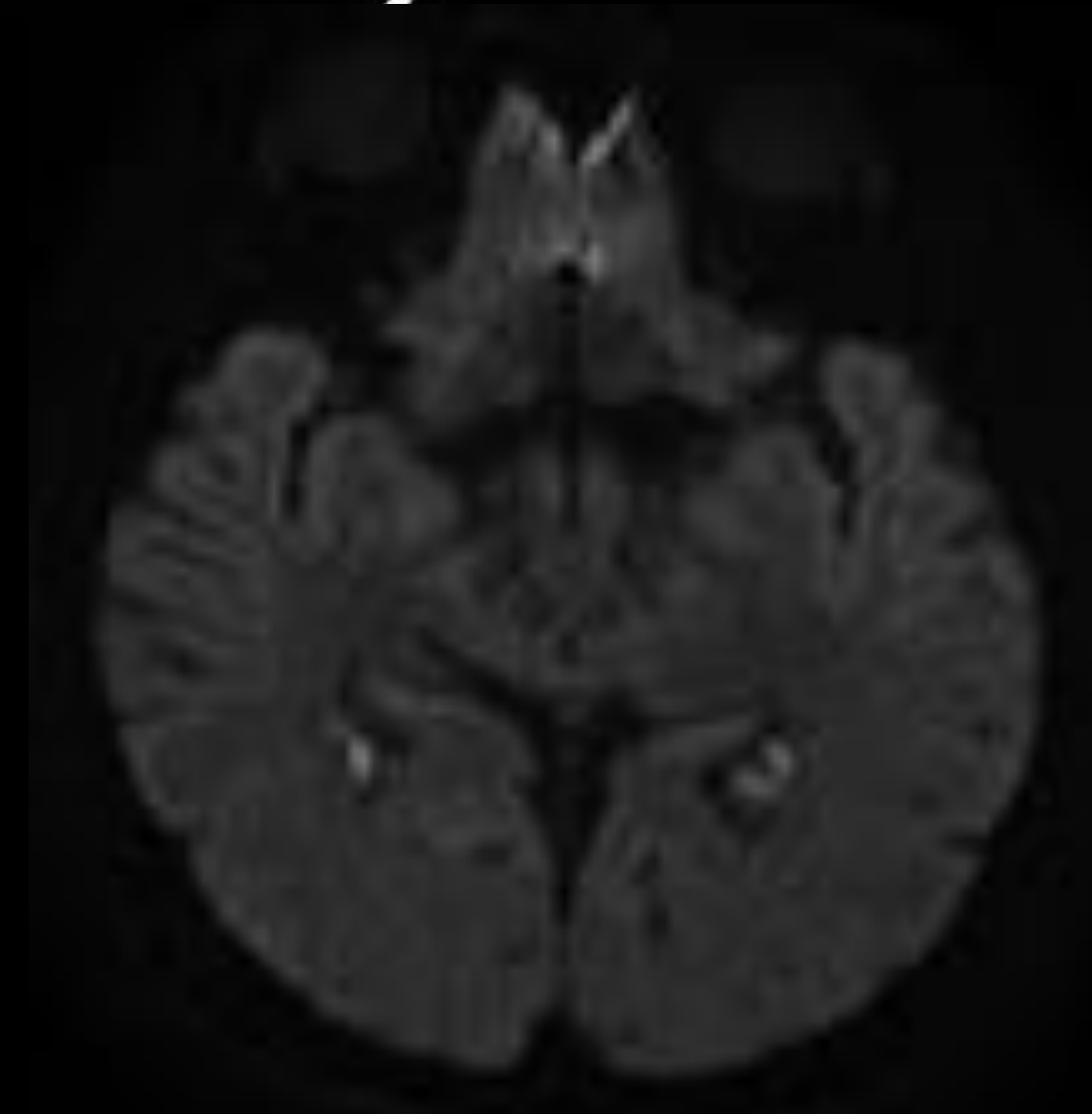
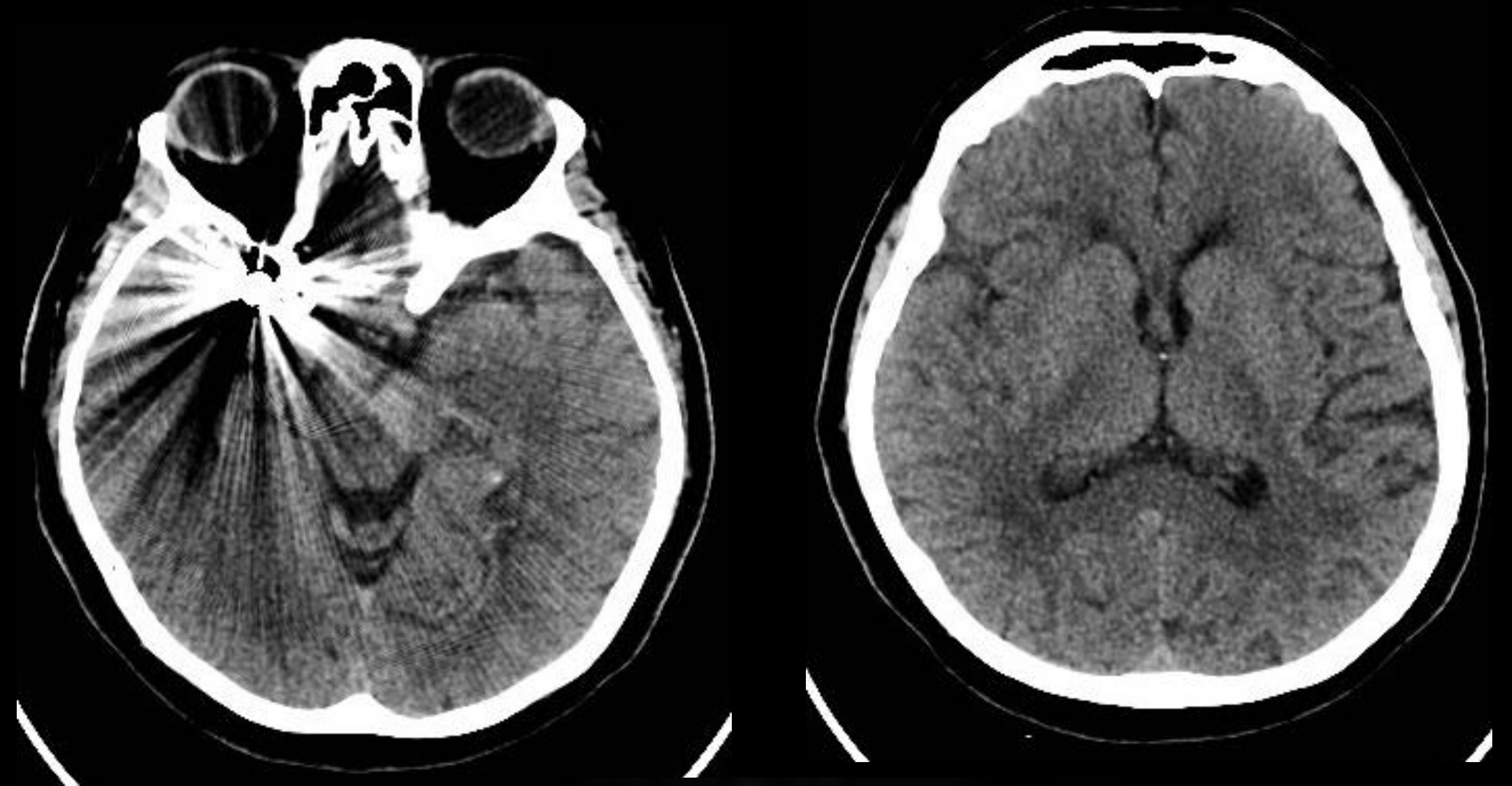
05/03/2021

esena



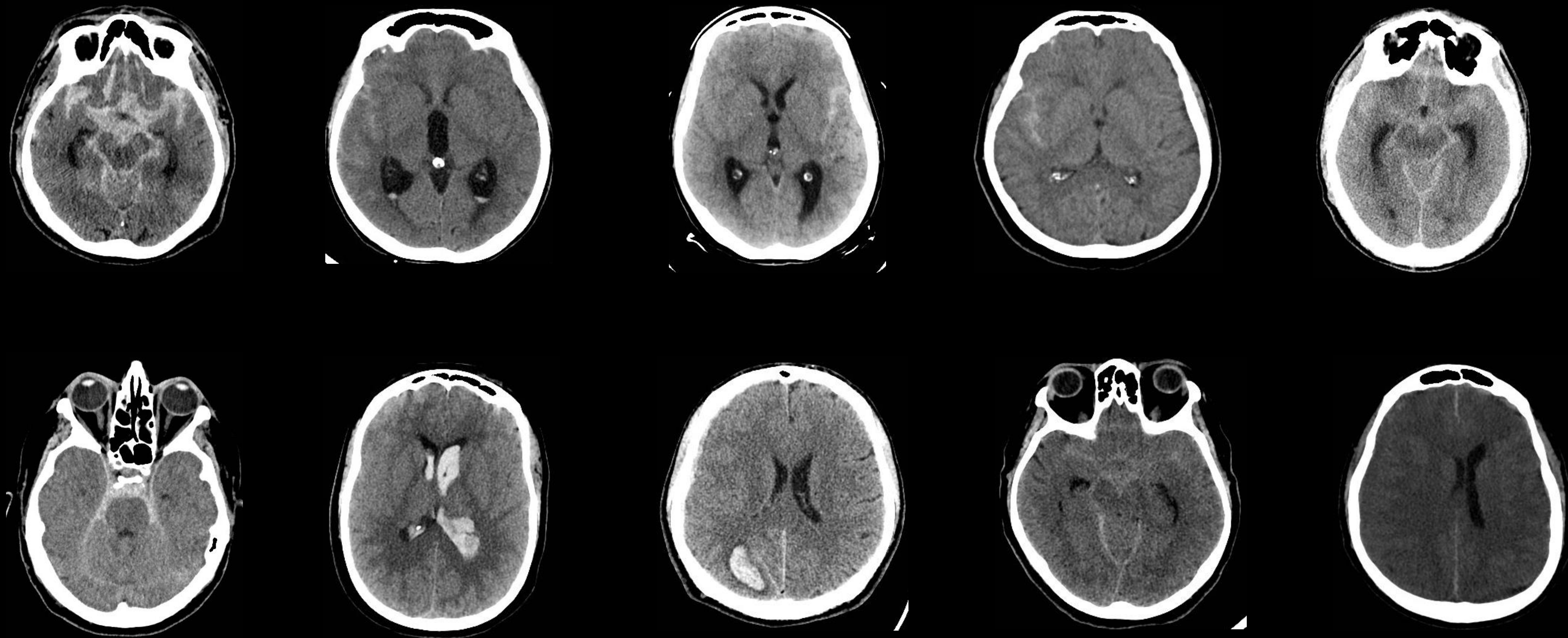
Neuroradiologia interventistica

Aneurismi



Neuroradiologia interventistica

Emorragie intracraniche



Neuroradiologia interventistica

Aneurismi



M 65 anni

Cefalea e vomito

GCS 12

Neuroradiologia interventistica

Aneurismi



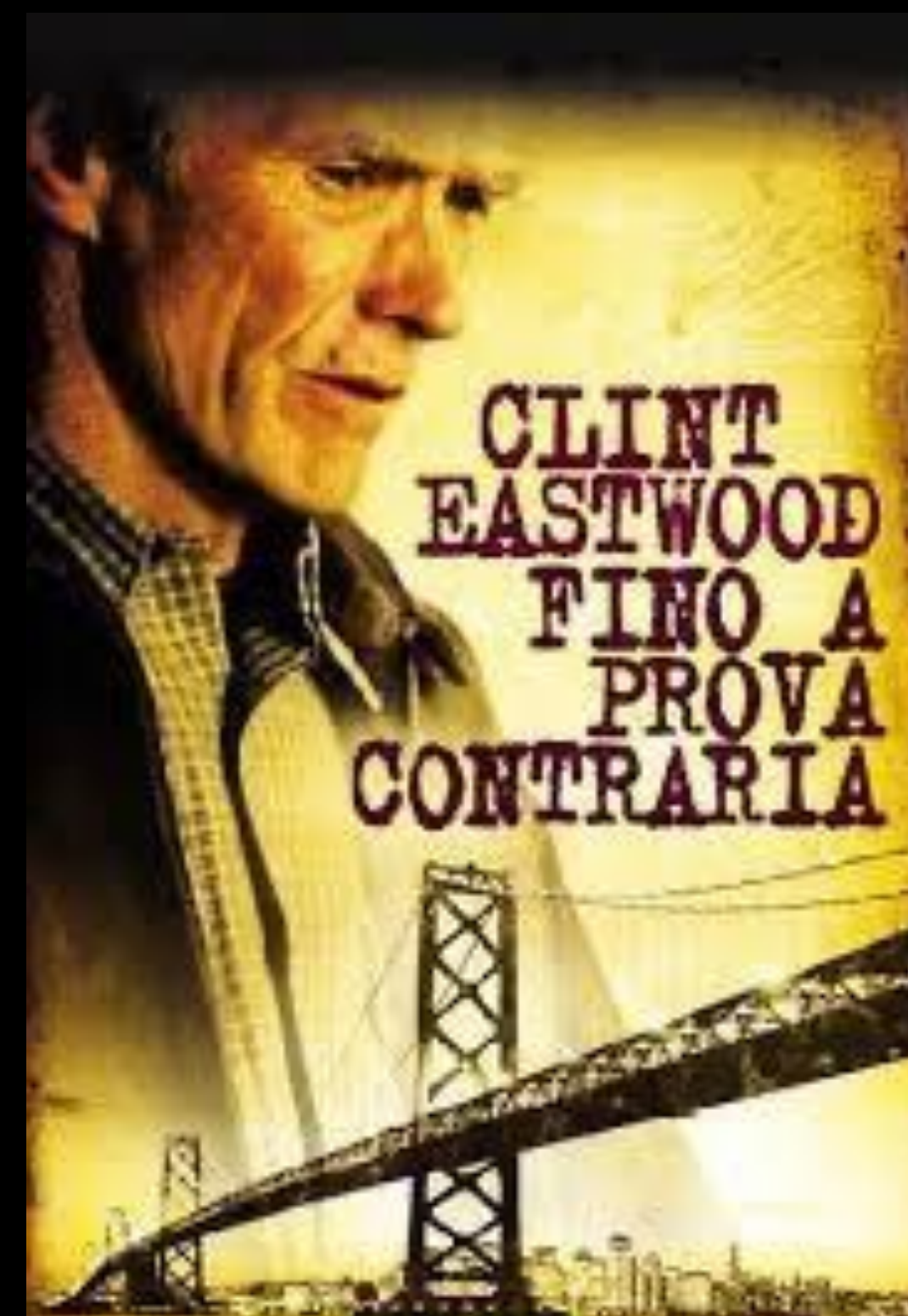
ESA SINE MATERIA?

Neuroradiologia interventistica

Aneurismi

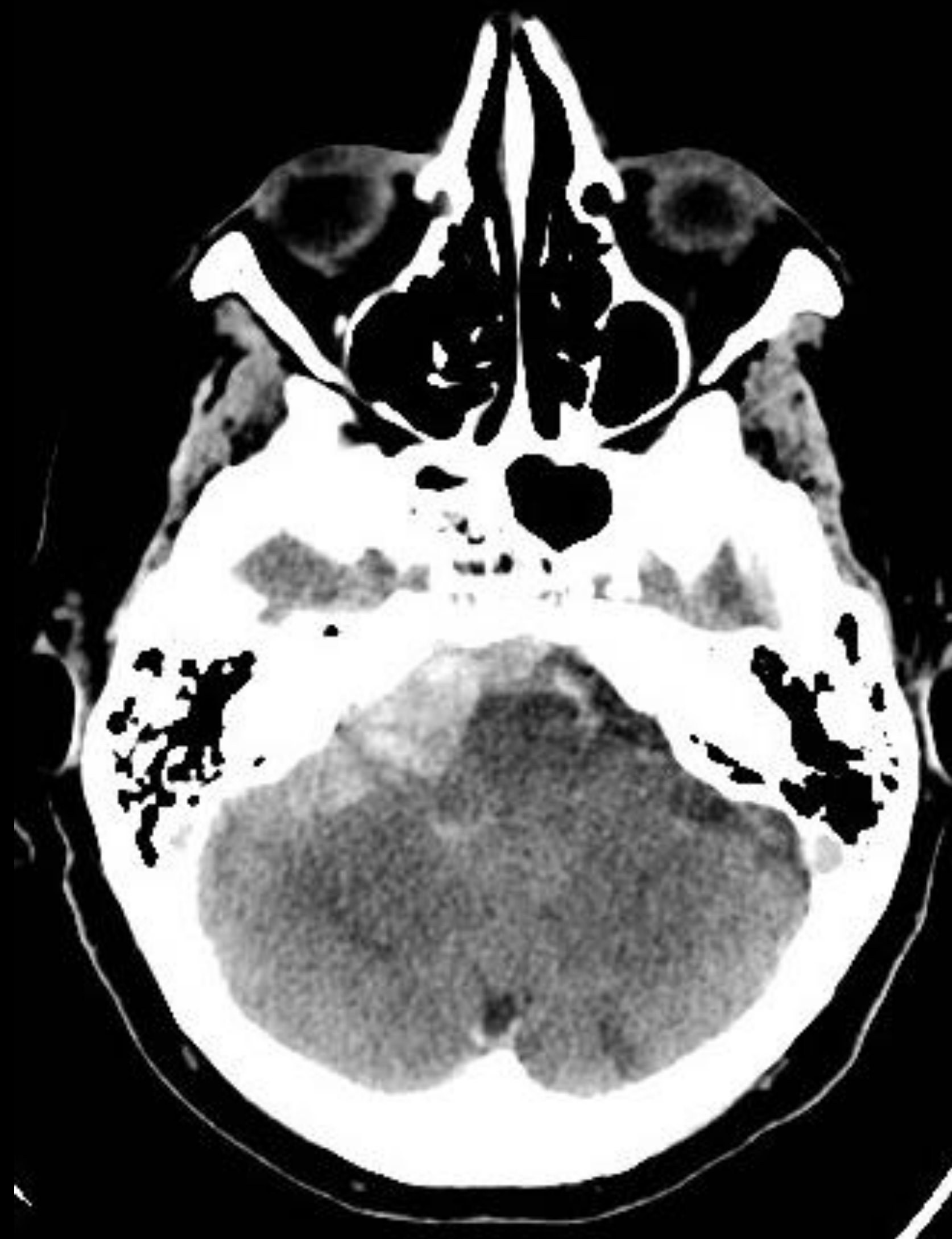


ESA SINE MATERIA?



Neuroradiologia interventistica

Aneurismi



..2 GIORNI DOPO

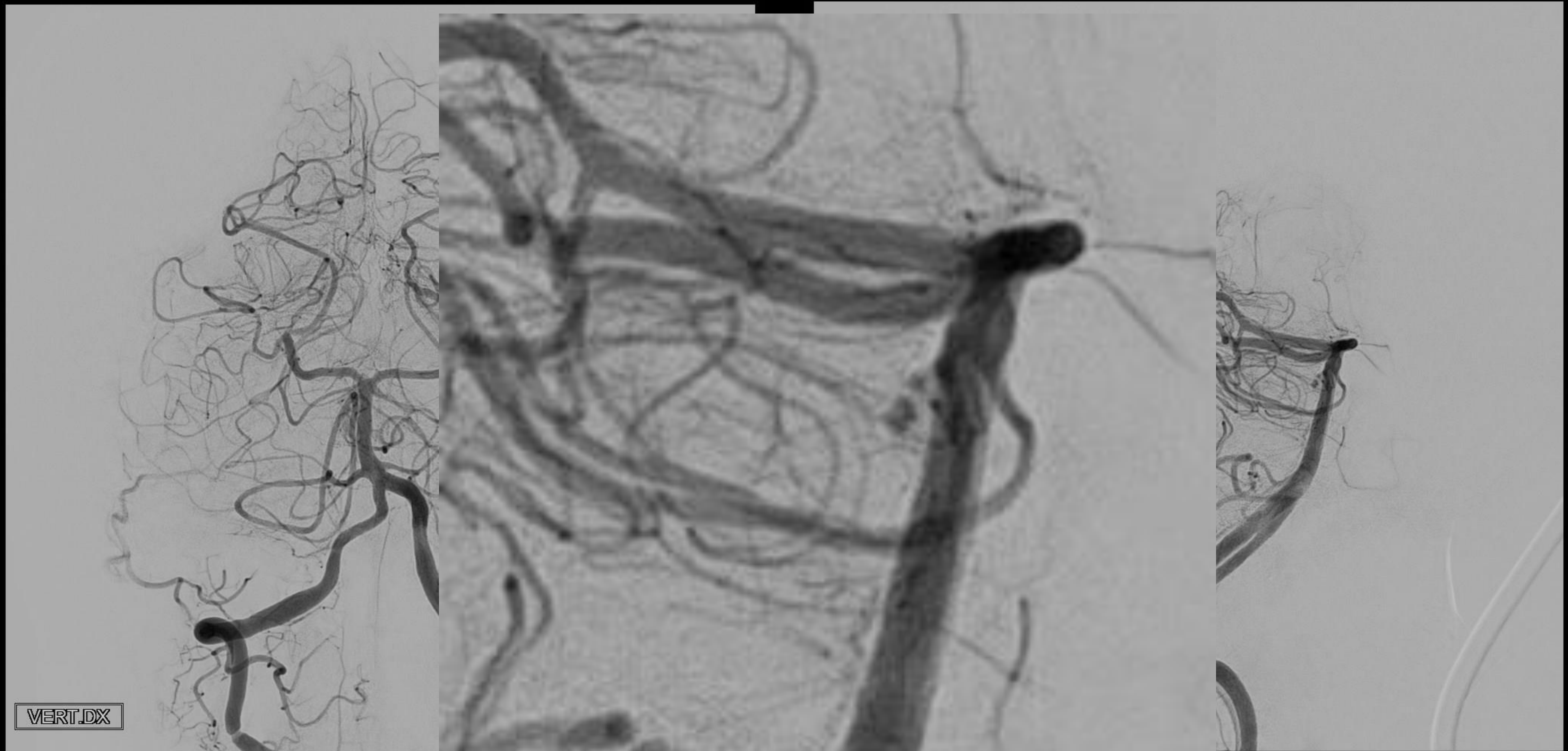
Neuroradiologia interventistica

Aneurismi



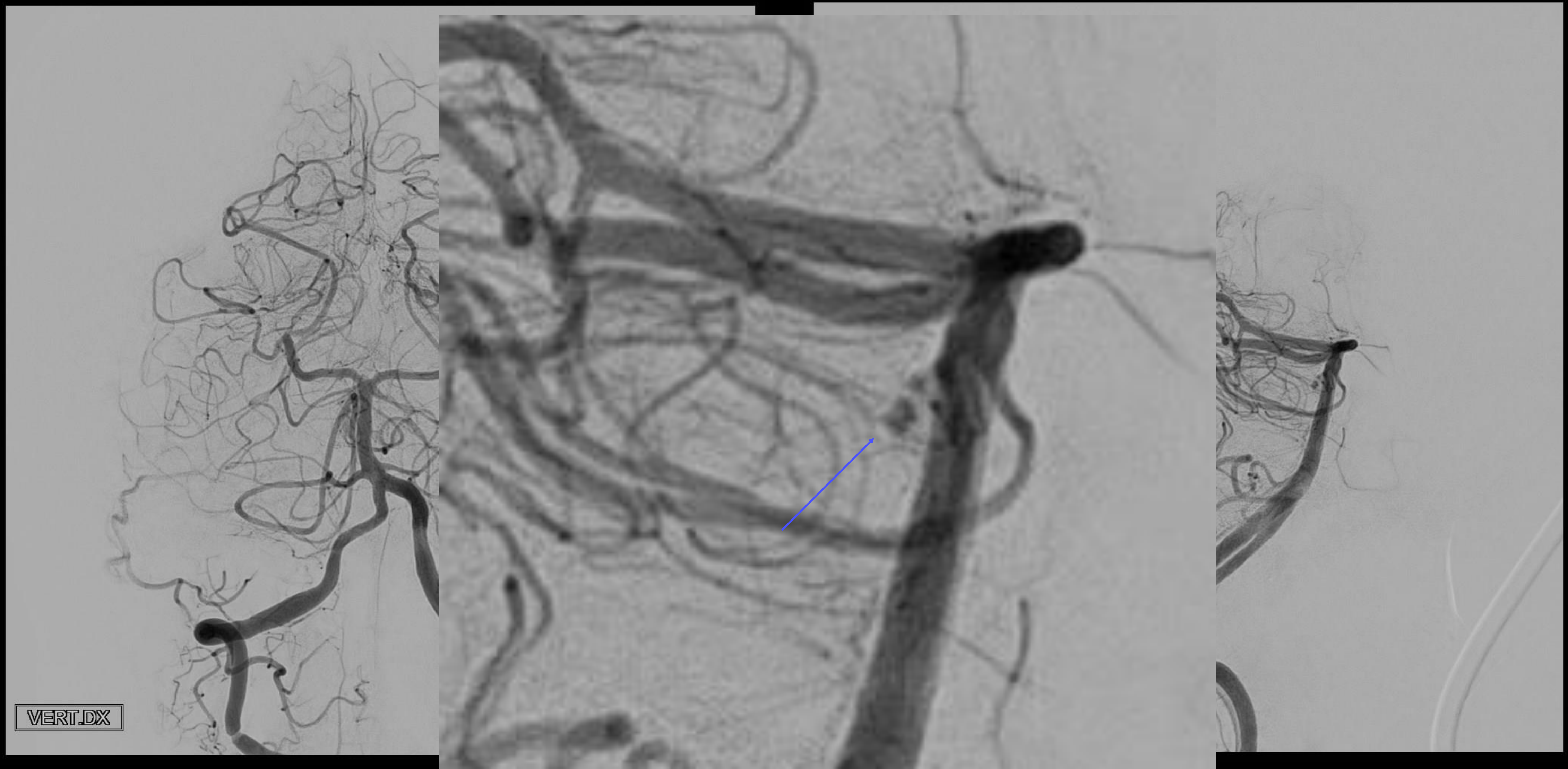
Neuroradiologia interventistica

Aneurismi



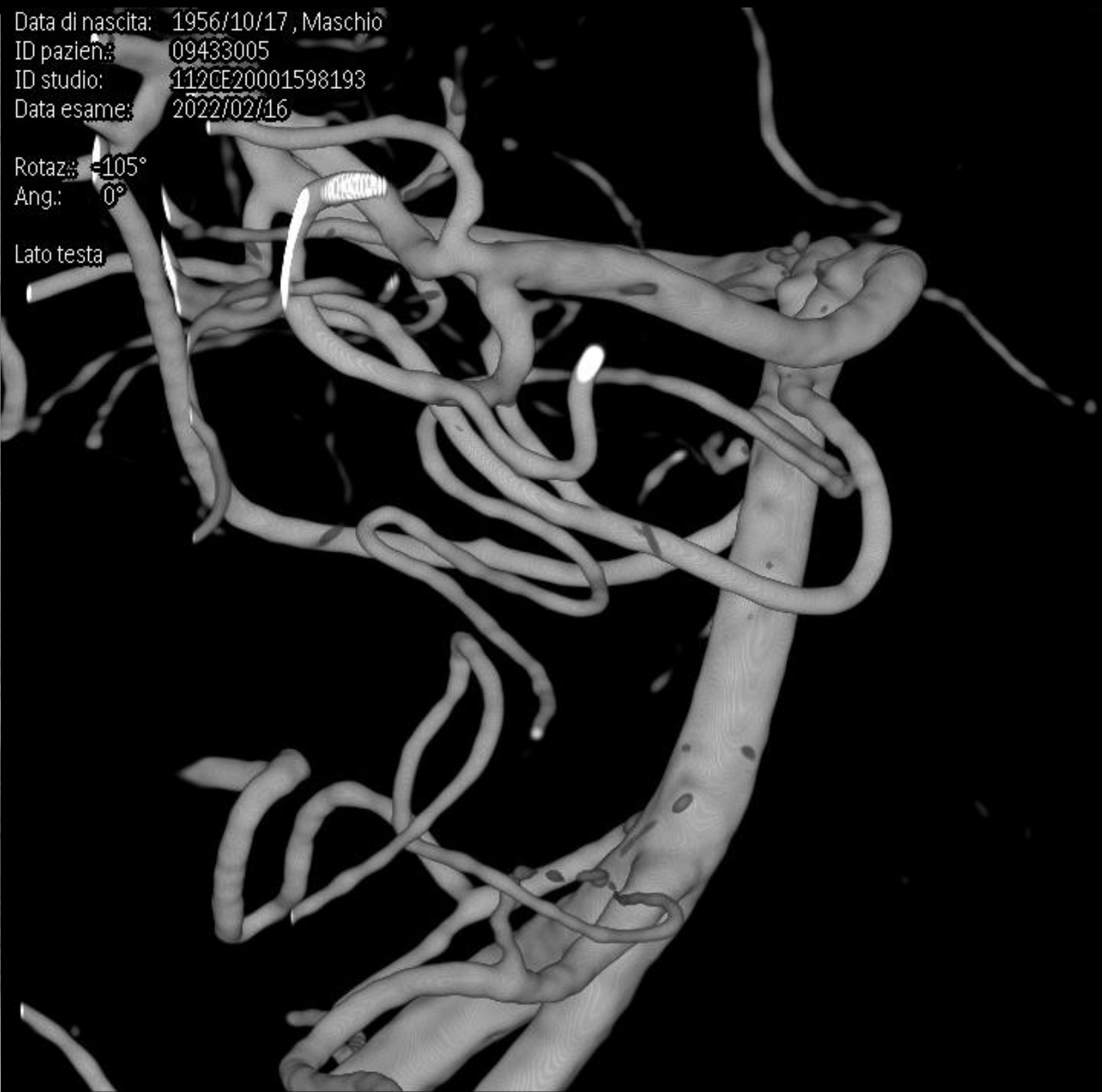
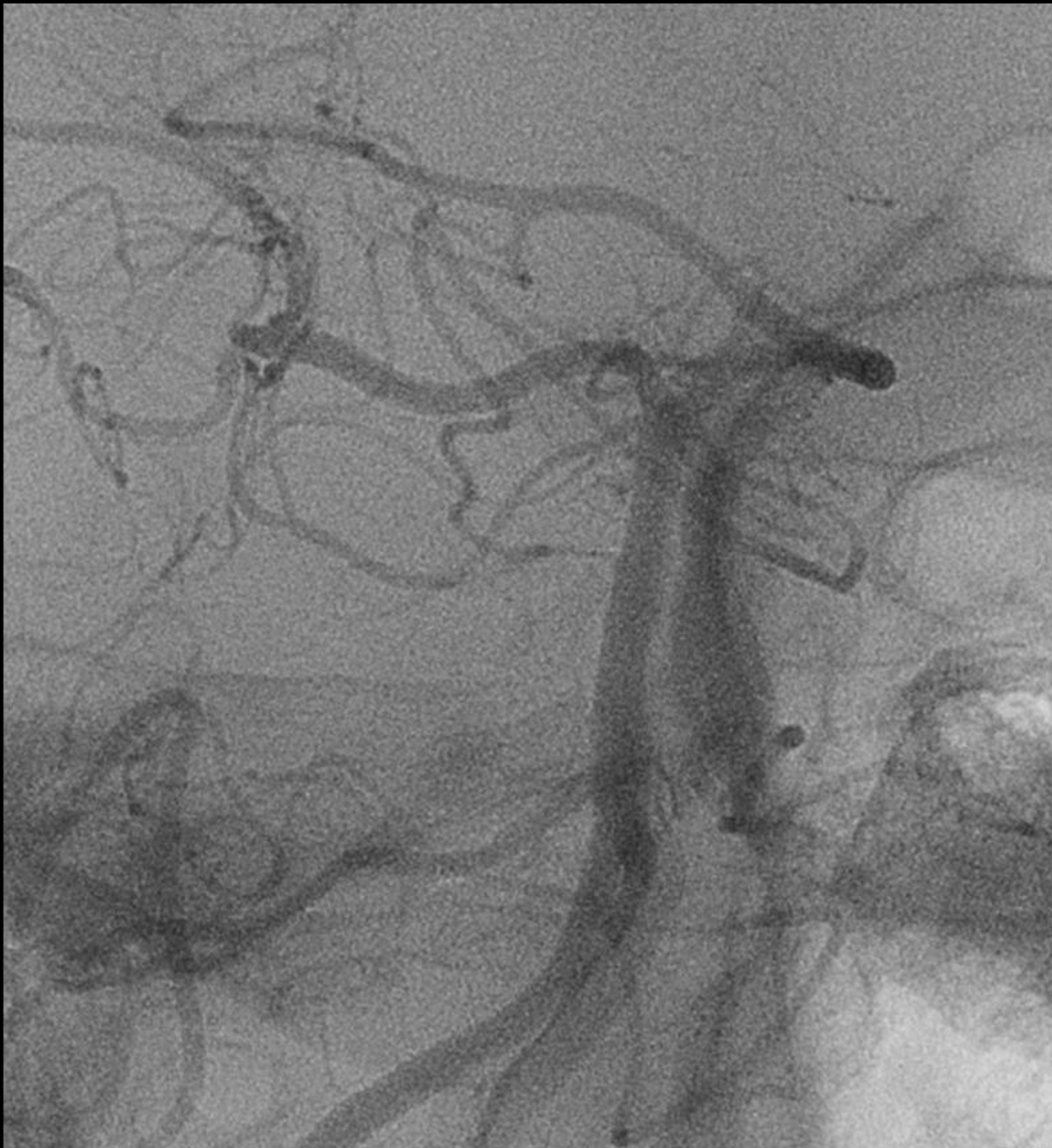
Neuroradiologia interventistica

Aneurismi



Neuroradiologia interventistica

Aneurismi

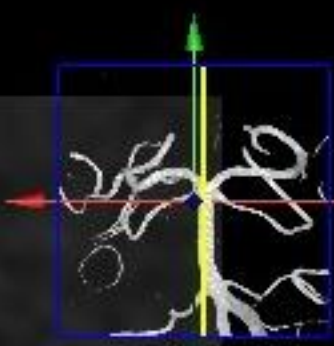


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ID pazien.: 09433005
ID studio: 112CE20001598193
Data esame: 2022/02/16

Rotaz.: -105°
Ang.: 0°

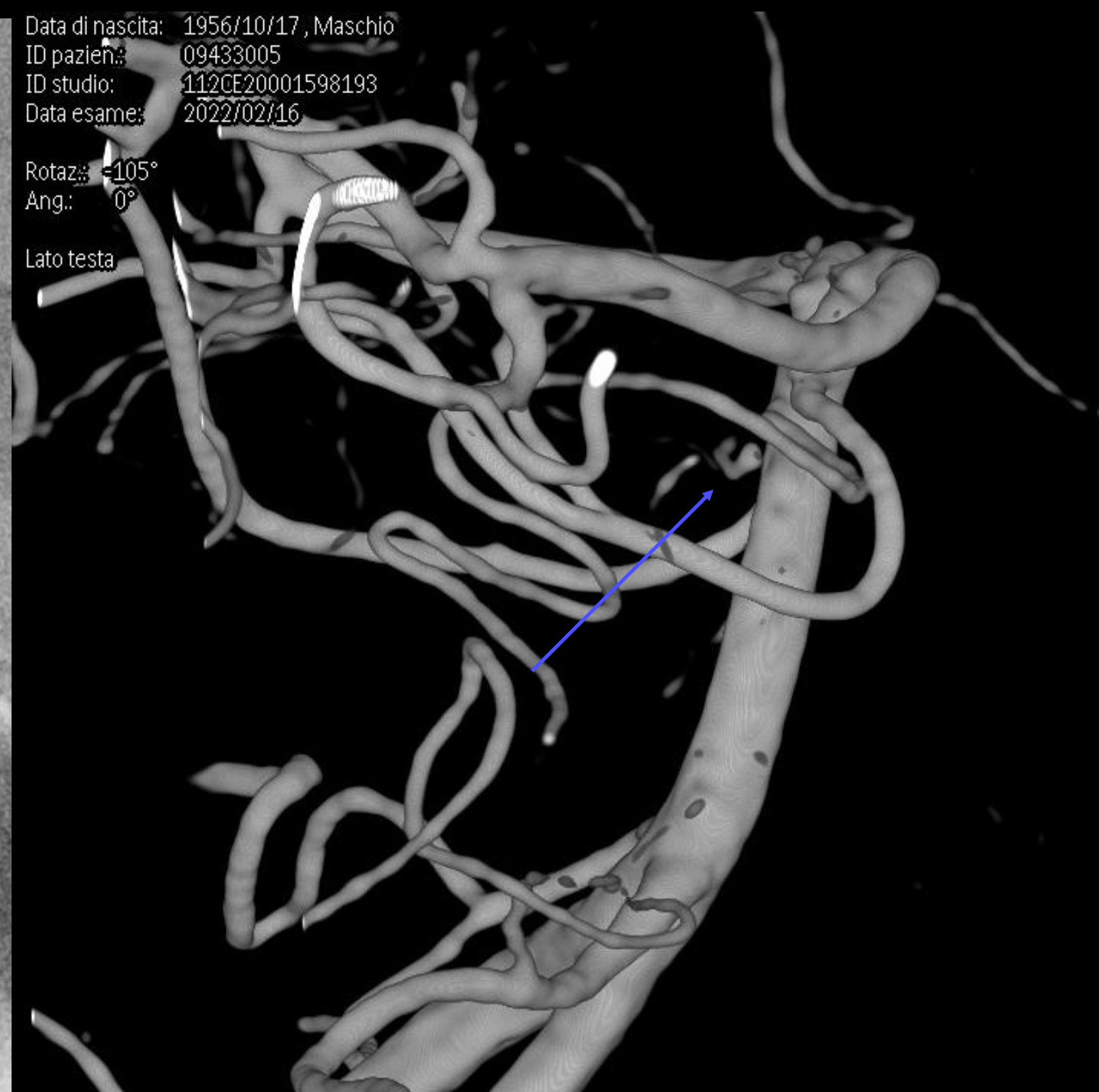
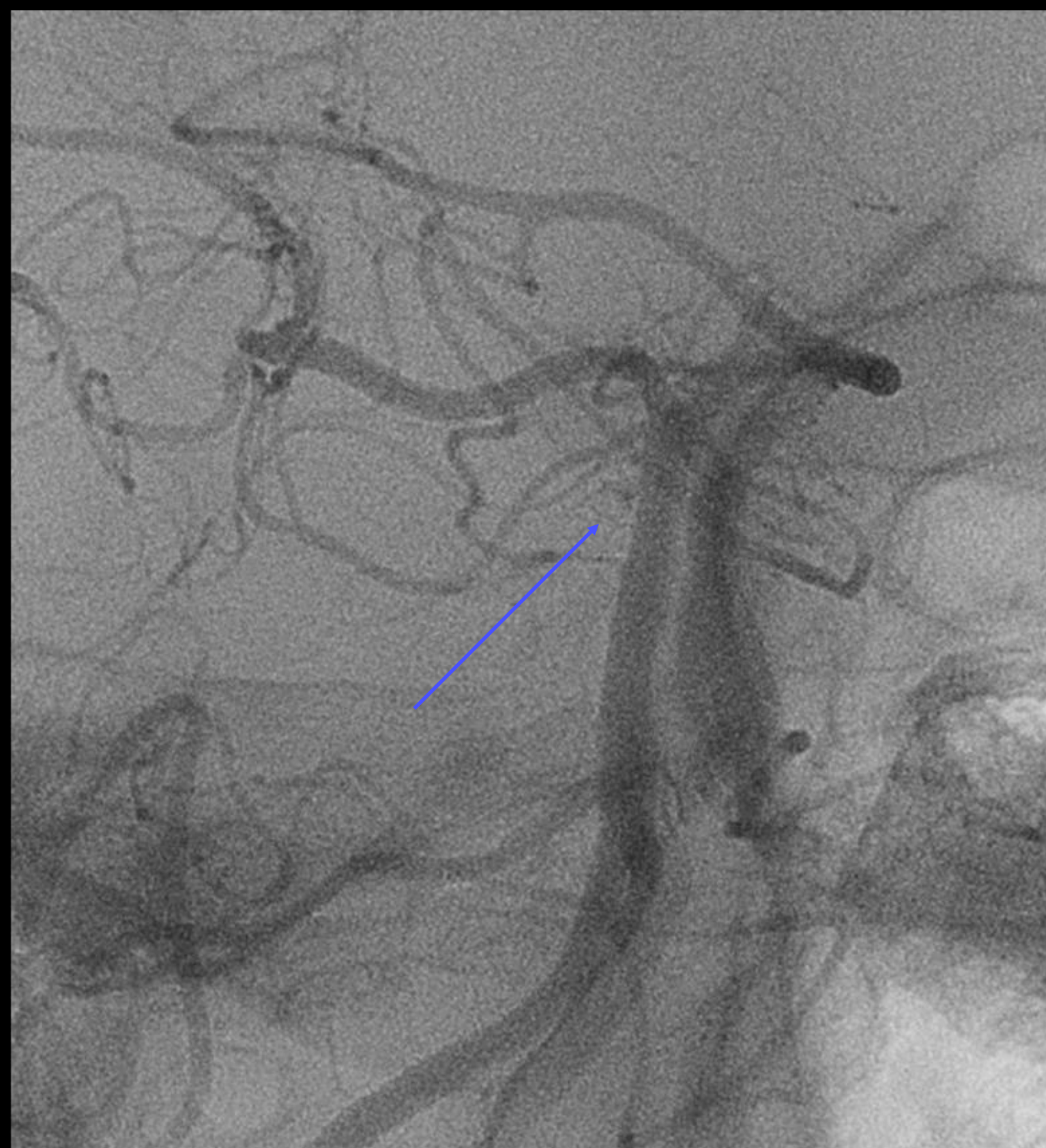
Lato testa

N. seriogr.: 5006
Tipo volume: 3DRA
Data seriogr.: 2022/02/16
Numero seriogr.: 15:20:21
Dimensione cubo: 53.29 mm



Neuroradiologia interventistica

Aneurismi

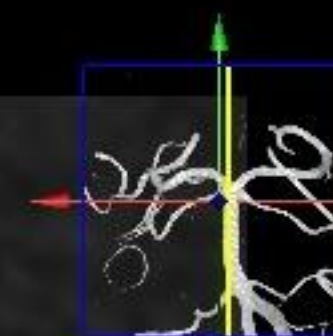


Data di nascita: 1956/10/17, Maschio
ID pazien.: 09433005
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Lato testa

N. seriogr.: 5006
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Data seriogr.: 2022/02/16
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Dimensione cubo: 53.29 mm



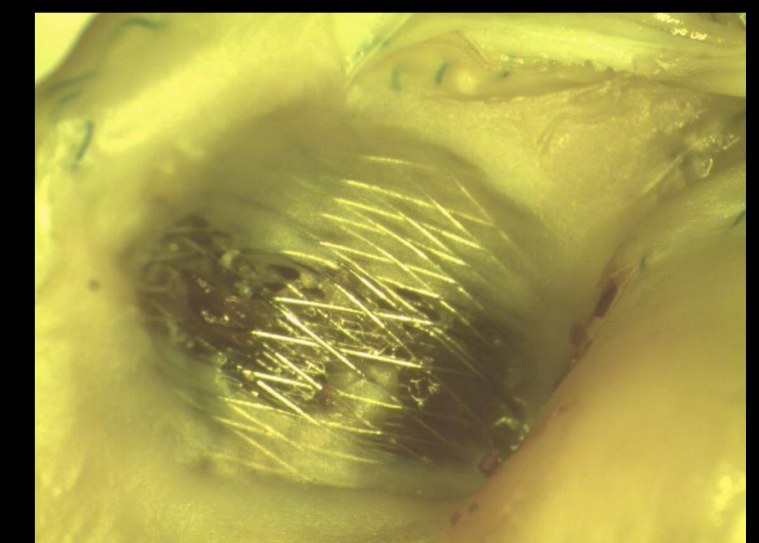
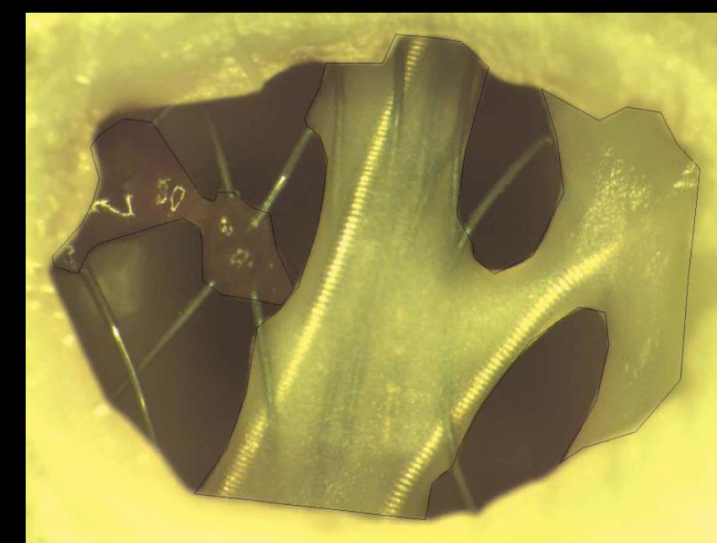
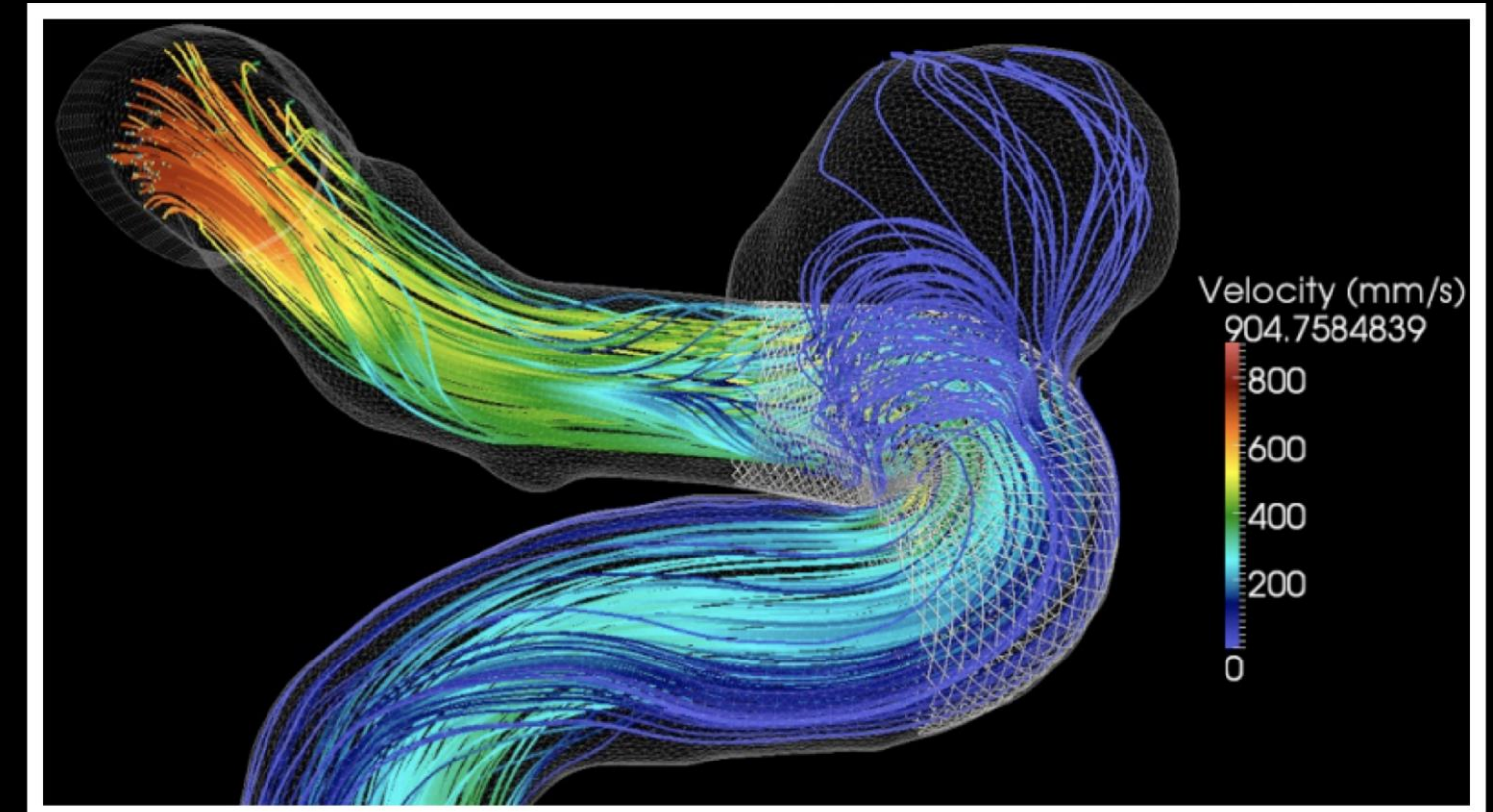
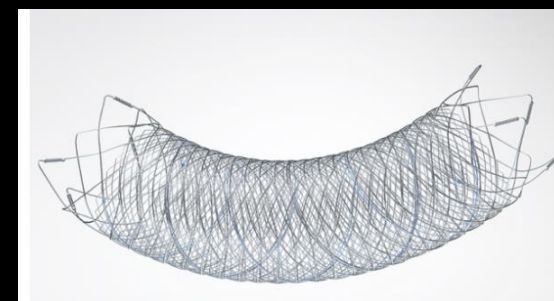
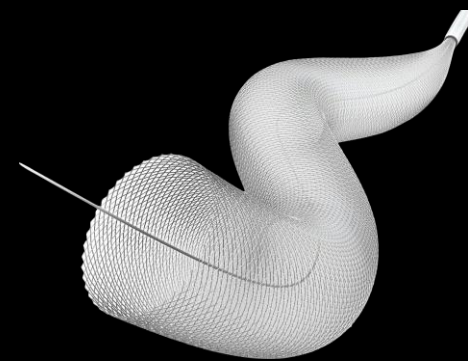
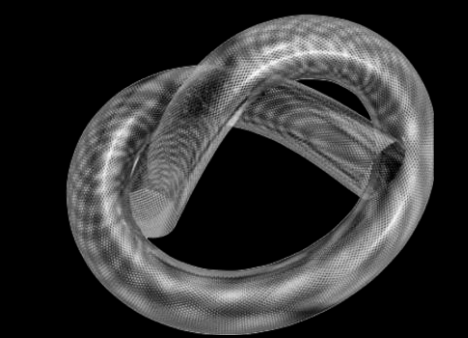
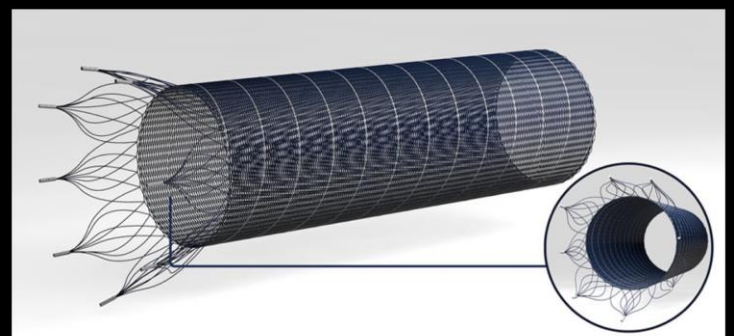
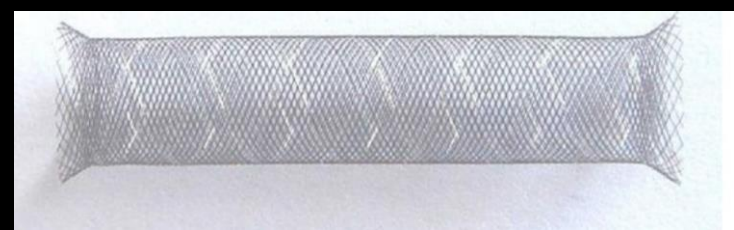
Neuroradiologia interventistica

Aneurismi

FLOW DIVERTER IN ANEURISMI ROTTI

IN SITUAZIONI NELLE QUALI NON E' POSSIBILE USARE LE ALTRE TECNICHE
ENDOVASCOLARI

- ❑ ANEURISMI DISSECANTI
- ❑ ANEURISMI FUSIFORMI
- ❑ BLISTER LIKE



Neuroradiologia interventistica

Flow Diversion in Ruptured Intracranial Aneurysms: A Meta-Analysis

¹⁵T.P. Madaelil, ¹⁵C.J. Moran, ¹⁵D.T. Cross III, and ¹⁵A.P. Kansagra

ABSTRACT

BACKGROUND: Flow diversion is now an established technique to treat unruptured intracranial aneurysms not readily amenable to endovascular coil embolization or open microsurgical occlusion. The role of flow-diverting devices in treating ruptured aneurysms is less clear.

PURPOSE: To estimate rates of angiographic occlusion and good clinical outcome in patients with ruptured intracranial aneurysms treated with flow-diverting devices.

DATA SOURCES: Systematic review of Ovid MEDLINE, PubMed, Cochrane databases, and EMBASE from inception to December 2015 for articles that included ruptured aneurysms treated with flow diversion.

STUDY SELECTION: One hundred seventy-two records were screened, of which 20 articles contained sufficient patient and outcome data for inclusion.

DATA ANALYSIS: Clinical and radiologic characteristics, procedural details, and outcomes were extracted from these reports. Aggregated occlusion rates and clinical outcomes were analyzed by using the Fisher exact test (statistical significance, $\alpha = .05$).

DATA SYNTHESIS: Complete occlusion of the aneurysm was achieved in 90% of patients, and favorable clinical outcome was attained in 81%. Aneurysm size greater than 7 mm was associated with less favorable clinical outcomes ($P = .027$). Aneurysm size greater than 2 cm was associated with a greater risk of rerupture after treatment ($P < .001$).

LIMITATIONS: Observational studies and case reports may be affected by reporting bias.

CONCLUSIONS: Although not recommended as a first-line treatment, the use of flow diverters to treat ruptured intracranial aneurysms may allow high rates of angiographic occlusion and good clinical outcome in carefully selected patients. Aneurysm size contributes to treatment risk because the rerupture rate following treatment is higher for aneurysms larger than 2 cm.

ABBREVIATIONS—*see* Table 1, page 100

AJNR Am J Neuroradiol 38:590–95 Mar 2017

126 ANEURISMI ROTTI TRATTATI CON FD

- ❑ 27% DISSECANTI
 - ❑ 10% FUSIFORMI
 - ❑ 3% GIANT
 - ❑ 38% BLISTER
 - ❑ 22% SACCULARI
- **RIROTTURA 5%** ($x + in AN > 2 CM$)
 - $An > 7 mm$ BUON OUTCOME
 - 90% COMPLETA OCCLUSIONE A 6 MESI

Acutely Ruptured Intracranial Aneurysms Treated with Flow-Diverter Stents: A Systematic Review and Meta-Analysis

F. Cagnazzo, D.T. di Carlo, M. Cappucci, P.-H. Lefevre, V. Costalat, and P. Perrini

ABSTRACT

BACKGROUND: The implantation of flow-diverter stents for the treatment of ruptured intracranial aneurysms required further investigation.

PURPOSE: Our aim was to analyze the outcomes after flow diversion of ruptured intracranial aneurysms.

DATA SOURCES: A systematic search of 3 databases was performed for studies published from 2006 to 2018.

STUDY SELECTION: According to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses guidelines, we included studies (from 2010 to 2018) reporting acutely ruptured intracranial aneurysms treated with flow diversion.

DATA ANALYSIS: Random-effects meta-analysis was used to pool the following: aneurysm occlusion rate, complications, rebleeding, and factors influencing the studied outcomes.

DATA SYNTHESIS: We included 20 studies evaluating 223 patients with acutely ruptured intracranial aneurysms treated with flow-diverter stents. Immediate angiographic occlusion was obtained in 32% (29/86; 95% CI, 15.4%–48%; $I^2 = 79.6\%$) of aneurysms, whereas long-term complete/near-complete aneurysm occlusion was 88.9% (162/189; 95% CI, 84%–93.5%; $I^2 = 20.9\%$) (mean radiologic follow-up of 9.6 months). The treatment-related complication rate was 17.8% (42/233; 95% CI, 11%–24%; $I^2 = 52.6\%$). Complications were higher in the posterior circulation (16/72 = 27%; 95% CI, 14%–40%; $I^2 = 66\%$ versus 18/149 = 17%; 95% CI, 7%–16%; $I^2 = 0\%$) ($P = .004$) and after treatment with multiple stents (14/52 = 26%; 95% CI, 14%–45%; $I^2 = 59\%$) compared with a single stent (20/141 = 10%; 95% CI, 5%–15%; $I^2 = 0\%$) ($P = .004$). Aneurysm rebleeding after treatment was 6% (5/223; 95% CI, 1.8%–7%; $I^2 = 0\%$) and was higher in the first 72 hours.

LIMITATIONS: Small and retrospective series.

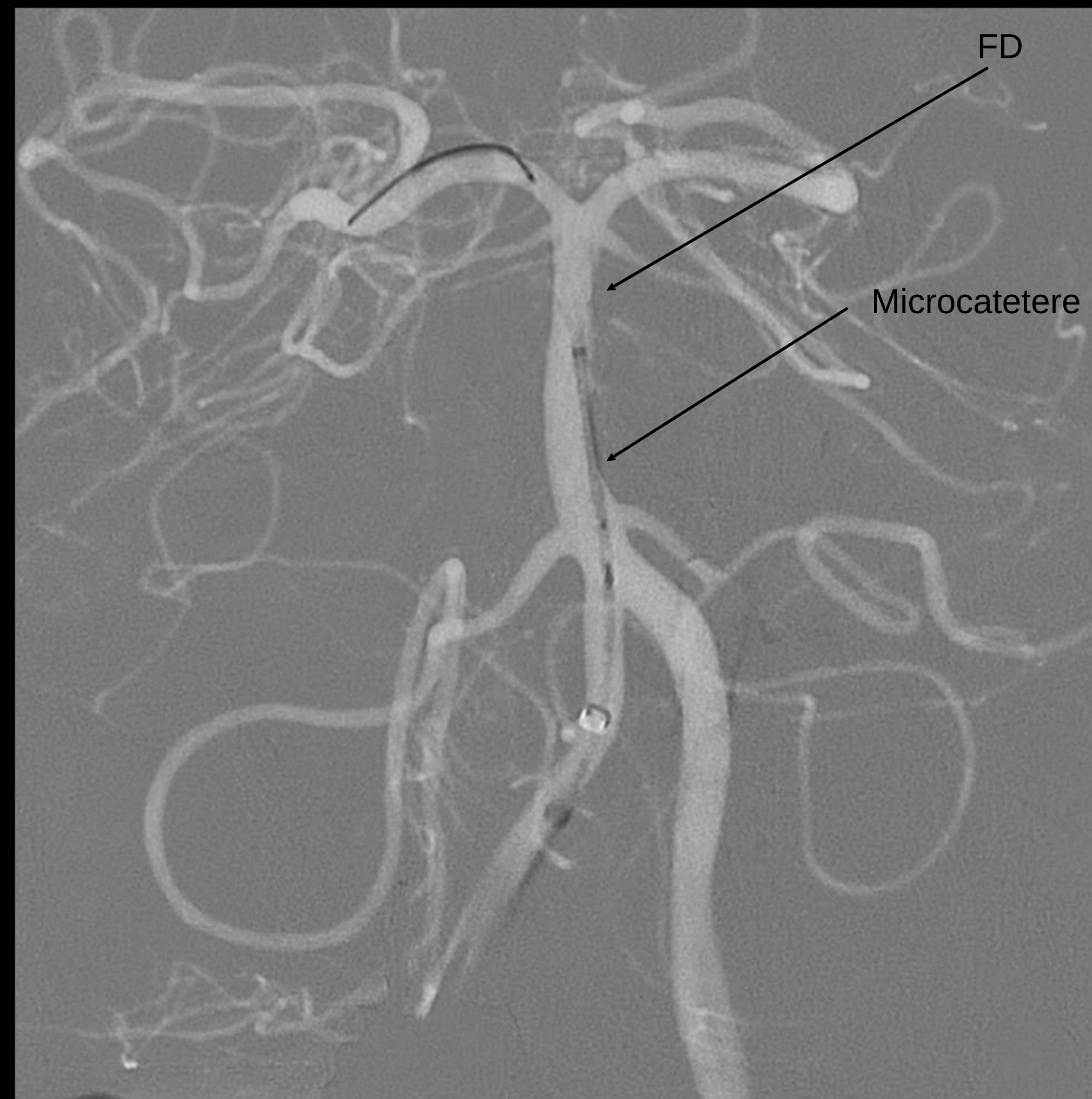
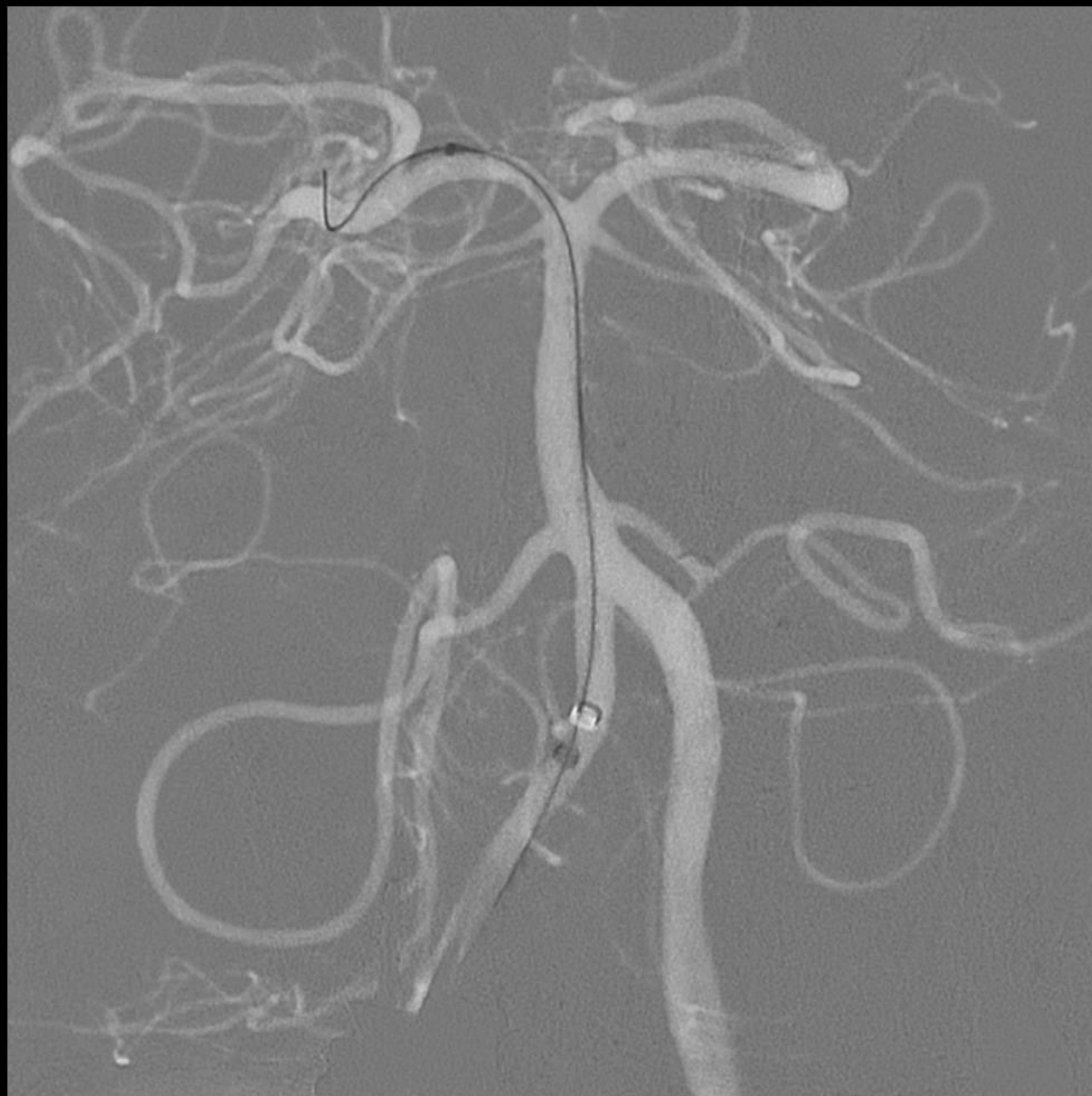
CONCLUSIONS: Flow-diversion treatment of ruptured intracranial aneurysms yields a high rate of long-term angiographic occlusion with a relatively low rate of aneurysm rebleeding. However, treatment is associated with a complication rate of 18%. When coiling or microsurgical clipping are not feasible strategies, anterior circulation ruptured aneurysms can be effectively treated with a flow-diversion technique, minimizing the number of stents deployed. Given the 27% rate of complications, flow diversion for ruptured posterior circulation aneurysms should be considered only in selected cases not amenable to other treatments.

- 20 STUDI, **223 PZ, ANEURISMI ROTTI** TRATTATI CON FD
- OCCLUSIONE COMPLETA O QUASI 88.9%
- TASSO DI **COMPLICANZE** TRATTAMENTO RELATO **17.8%**
COMPLICANZE > NEL CIRCOLO POSTERIORE (27%) E DOPO
TRATTAMENTO CON MULTIPLI FD (26%) VS SINGOLO FD (10%)
- TASSO DI **RISANGUINAMENTO** DOPO IL TRATTAMENTO E' DEL **4%** E
> NELLE PRIME 72 ORE

AJNR Am J Neuroradiol 39:1669–75 Sep 2018

Neuroradiologia interventistica

Aneurismi



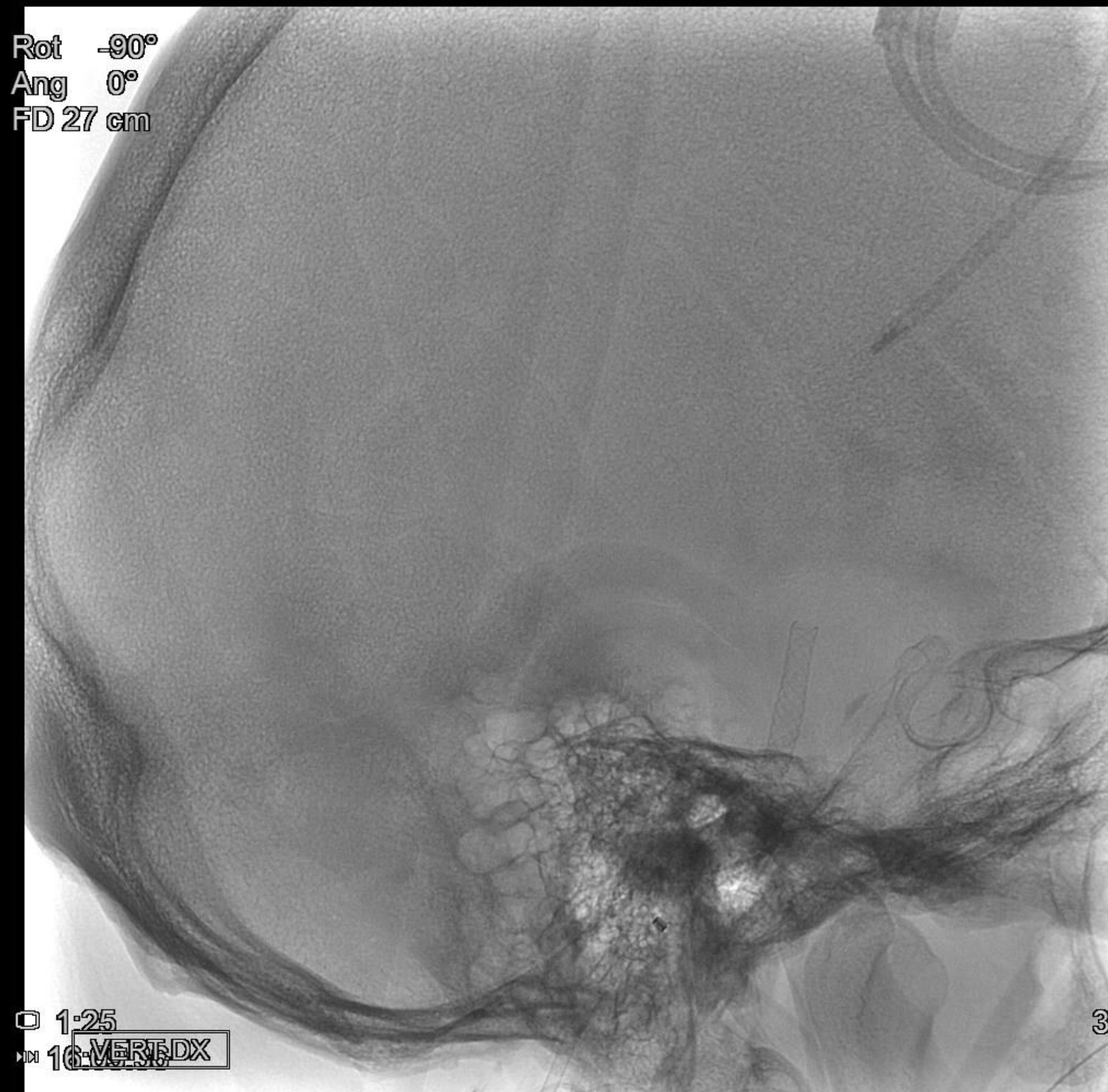
Neuroradiologia interventistica

Aneurismi



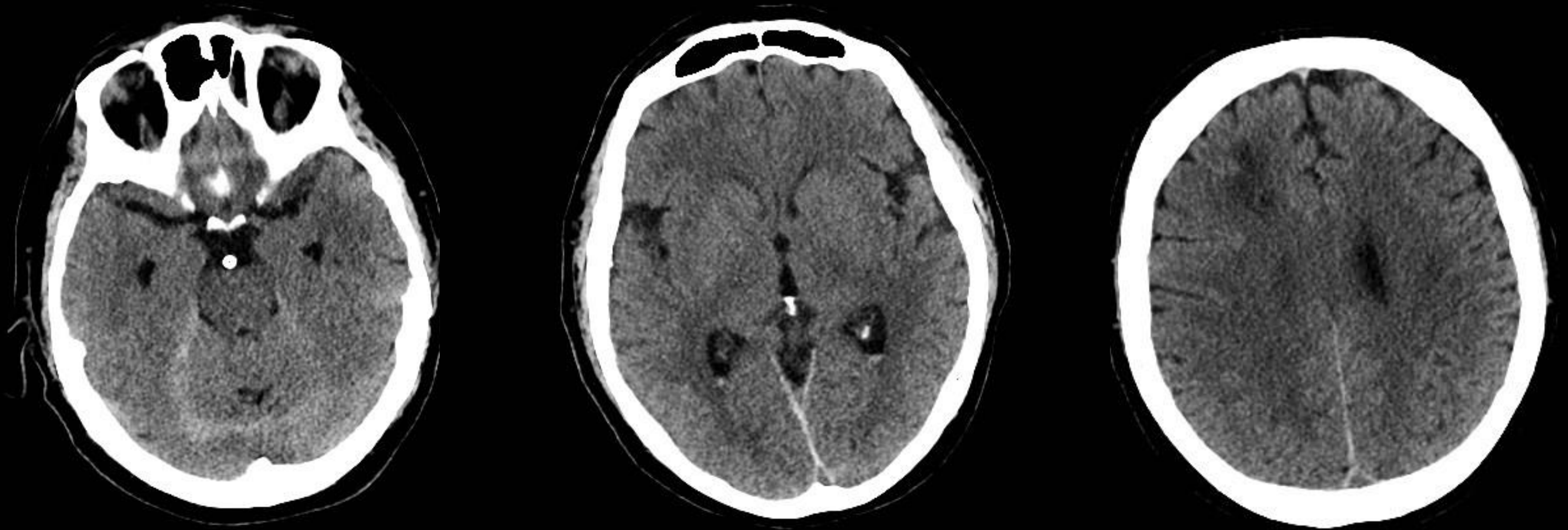
Neuroradiologia interventistica

Aneurismi



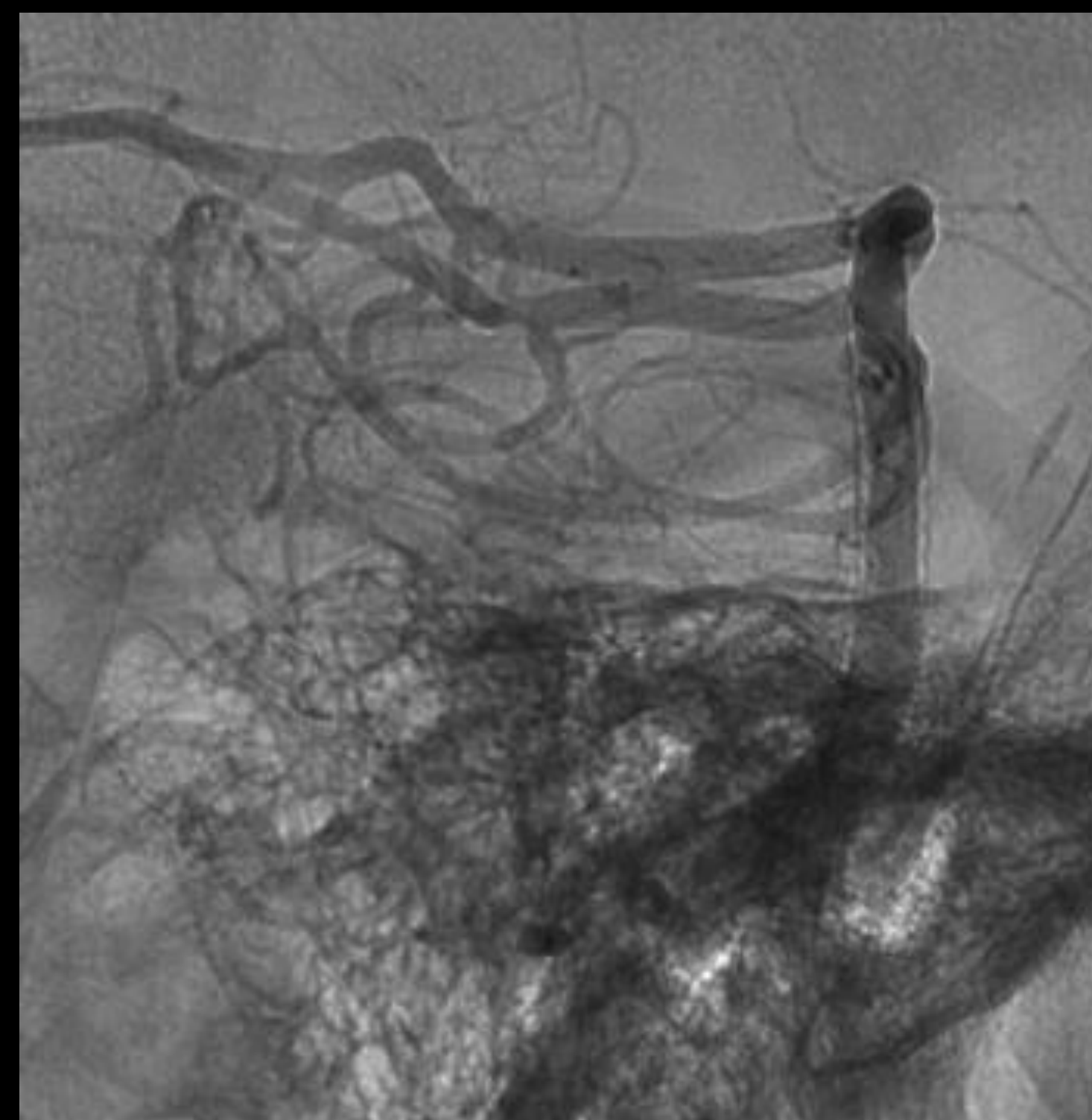
Neuroradiologia interventistica

Aneurismi



Neuroradiologia interventistica

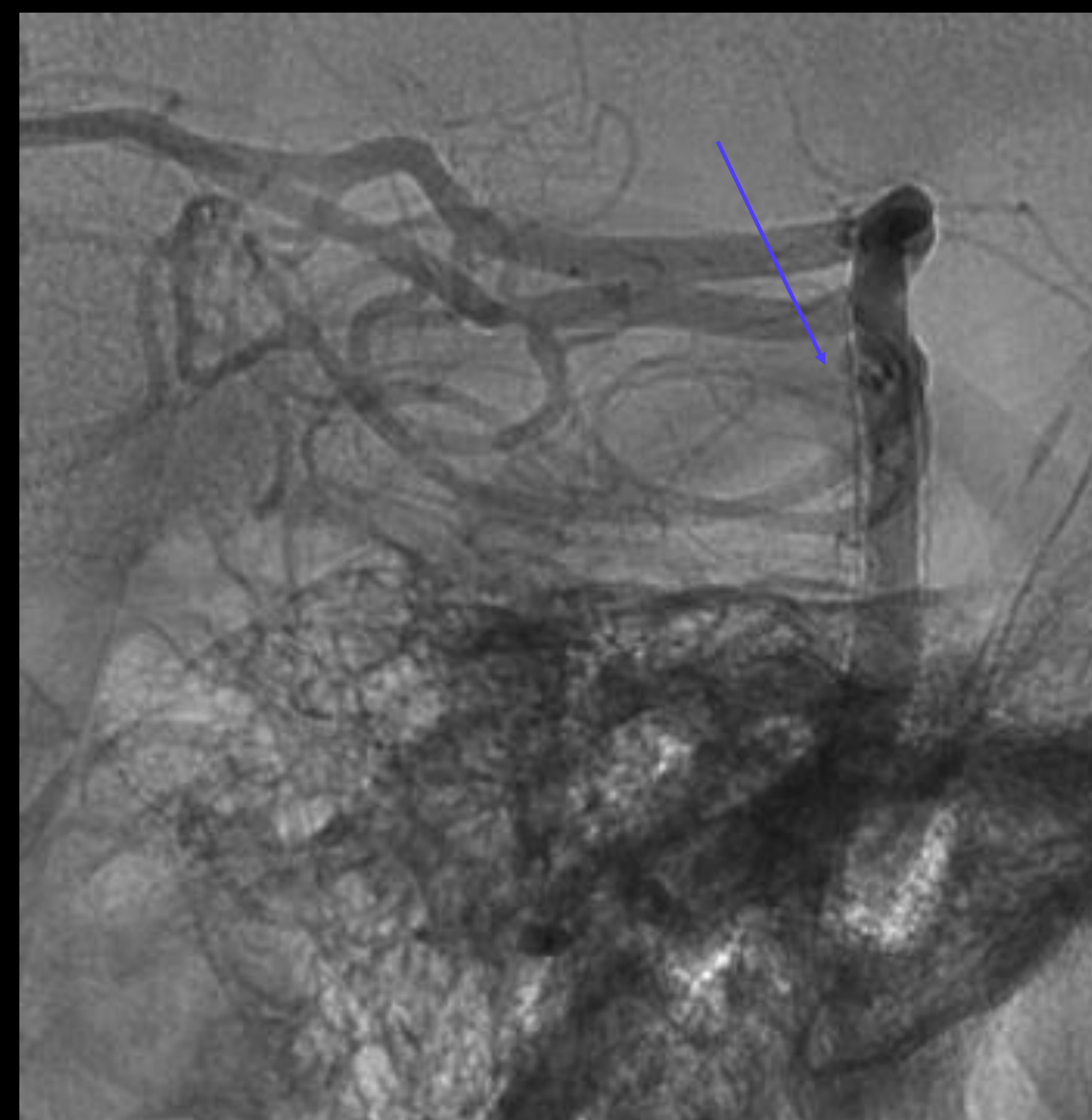
Aneurismi



→ AGF a 3 mesi

Neuroradiologia interventistica

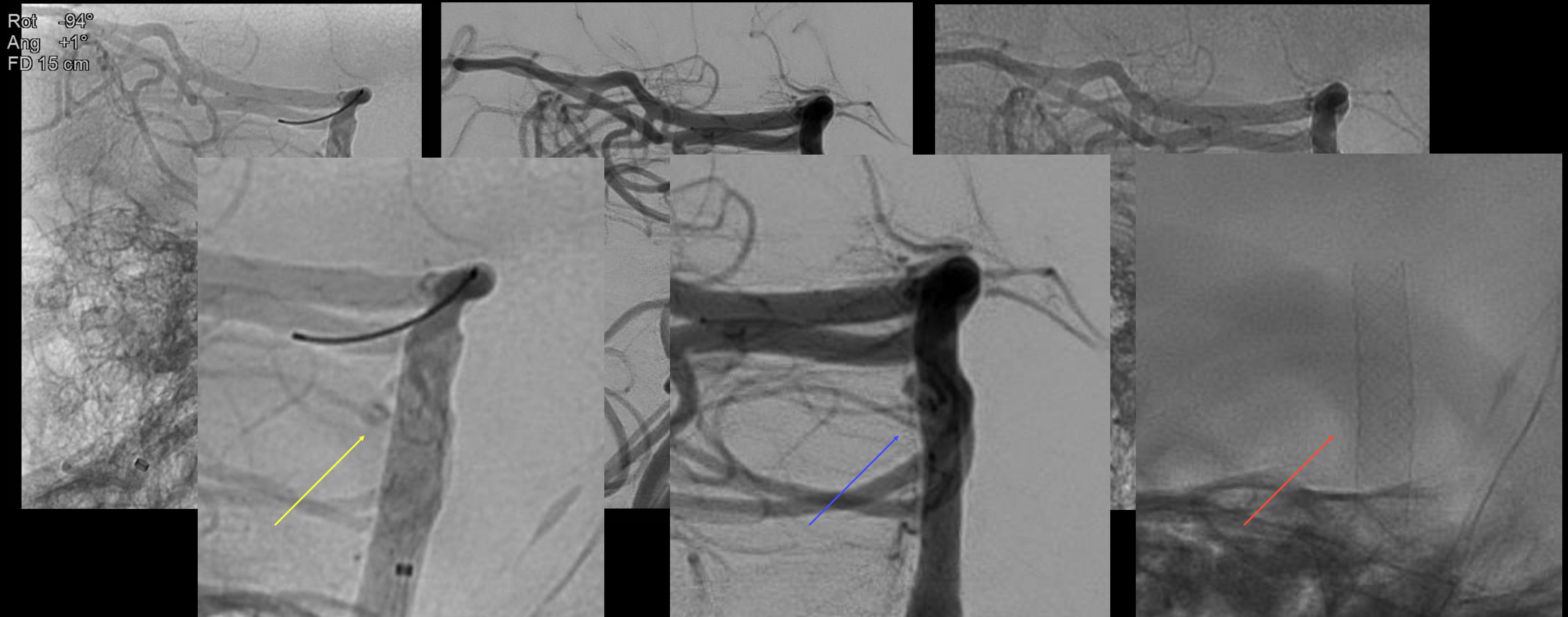
Aneurismi



→ AGF a 3 mesi

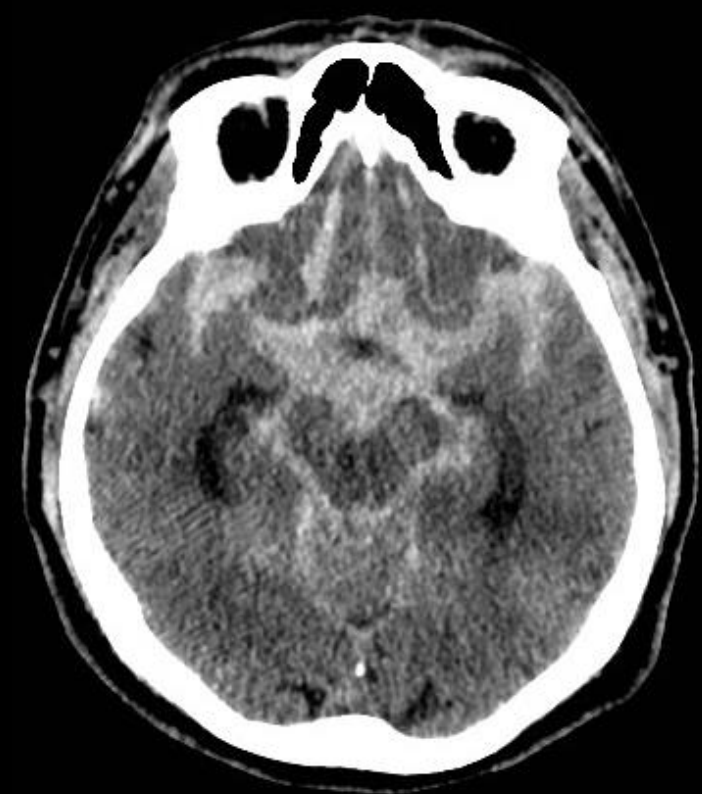
Neuroradiologia interventistica

Aneurismi



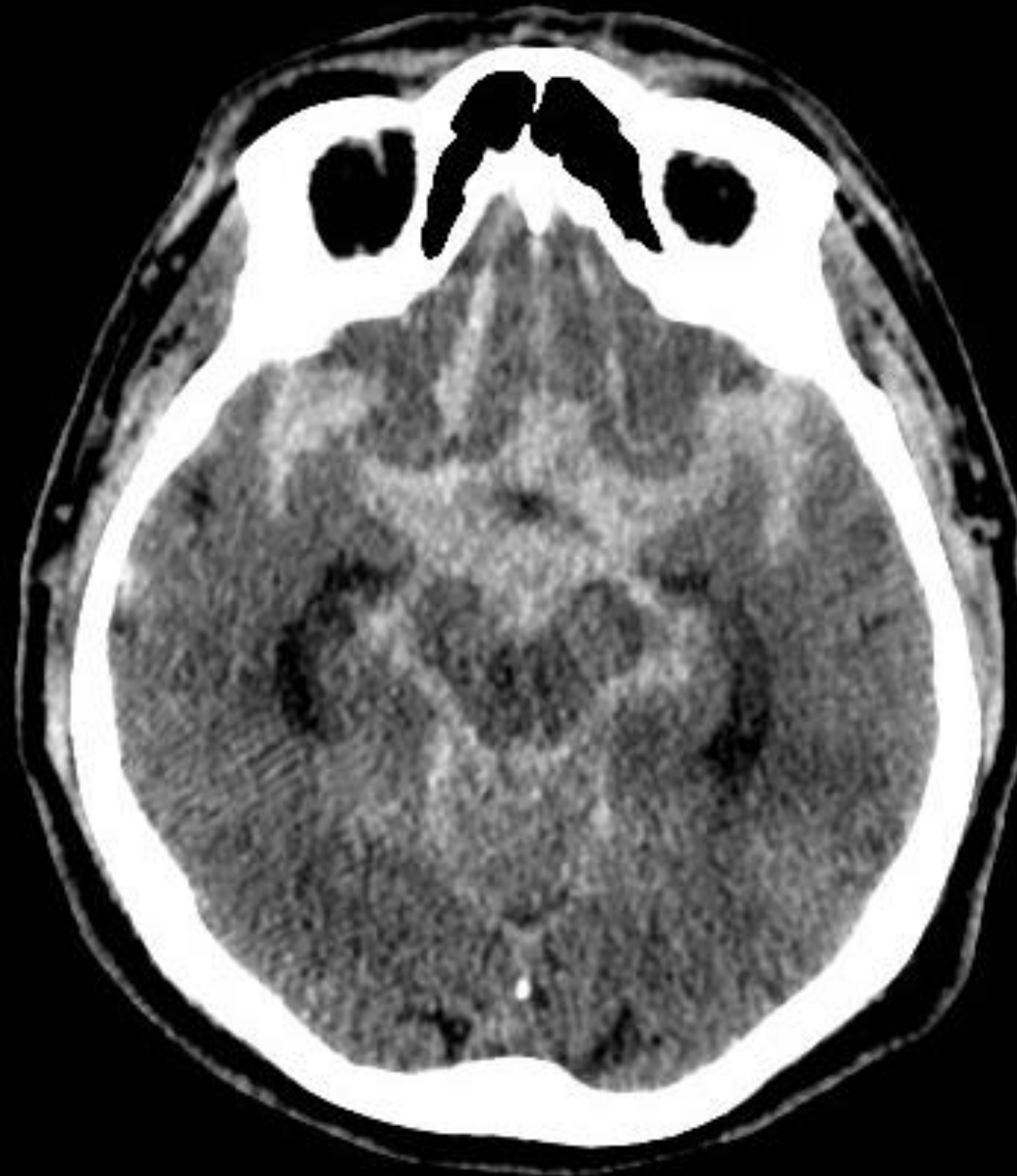
Neuroradiologia interventistica

Emorragie intracraniche



Neuroradiologia interventistica

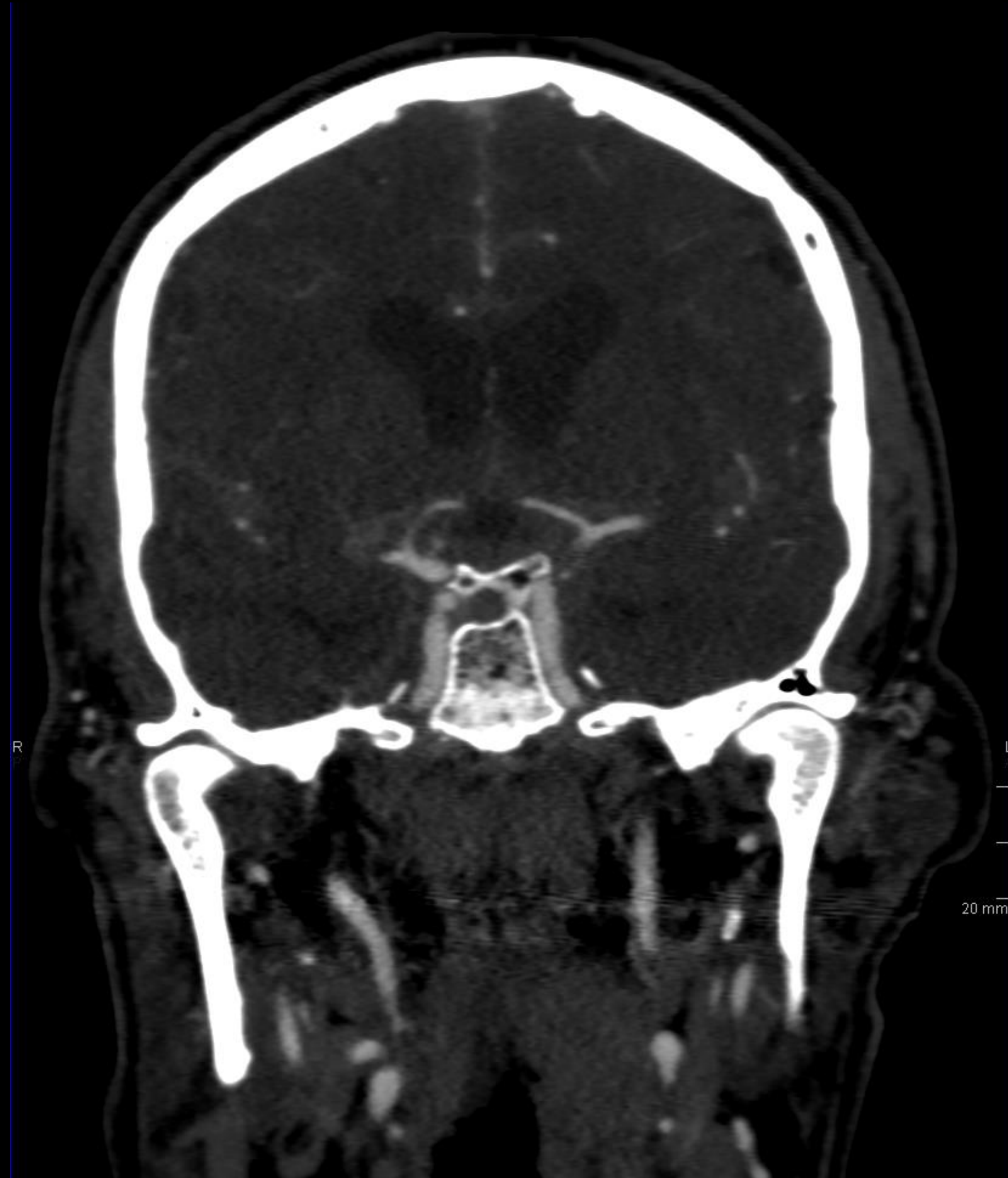
Aneurismi



M 62 anni
Caduta con
trauma cranico
commotivo, crisi
tonico-clonica
GCS 13-> 8-> 3

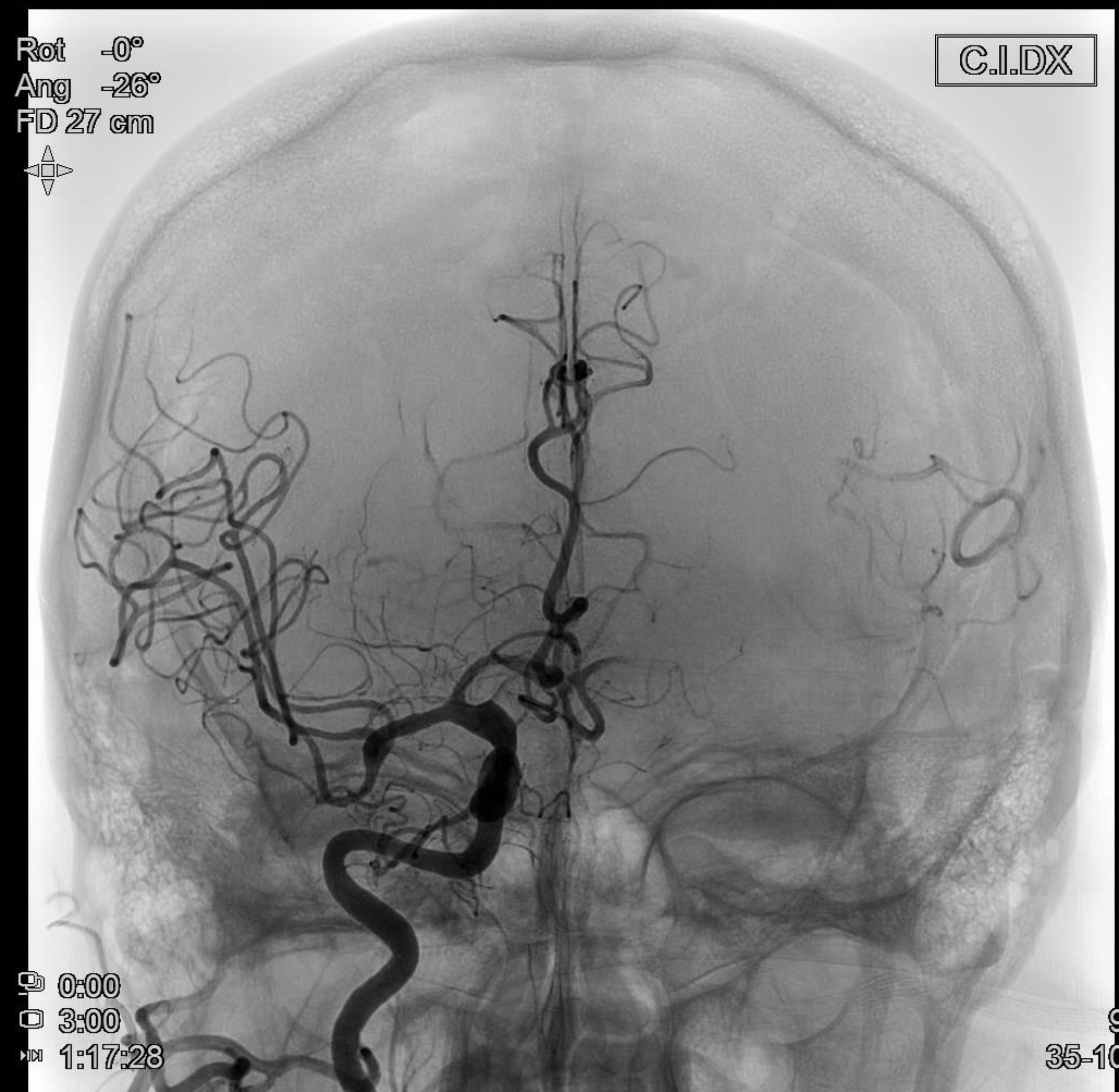
Neuroradiologia interventistica

Aneurismi



Neuroradiologia interventistica

Aneurismi



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ID studio: 112CE20001597528
Data esame: 2022/02/16

Rotaz.: 0°
Ang.: 0°

Lato testa

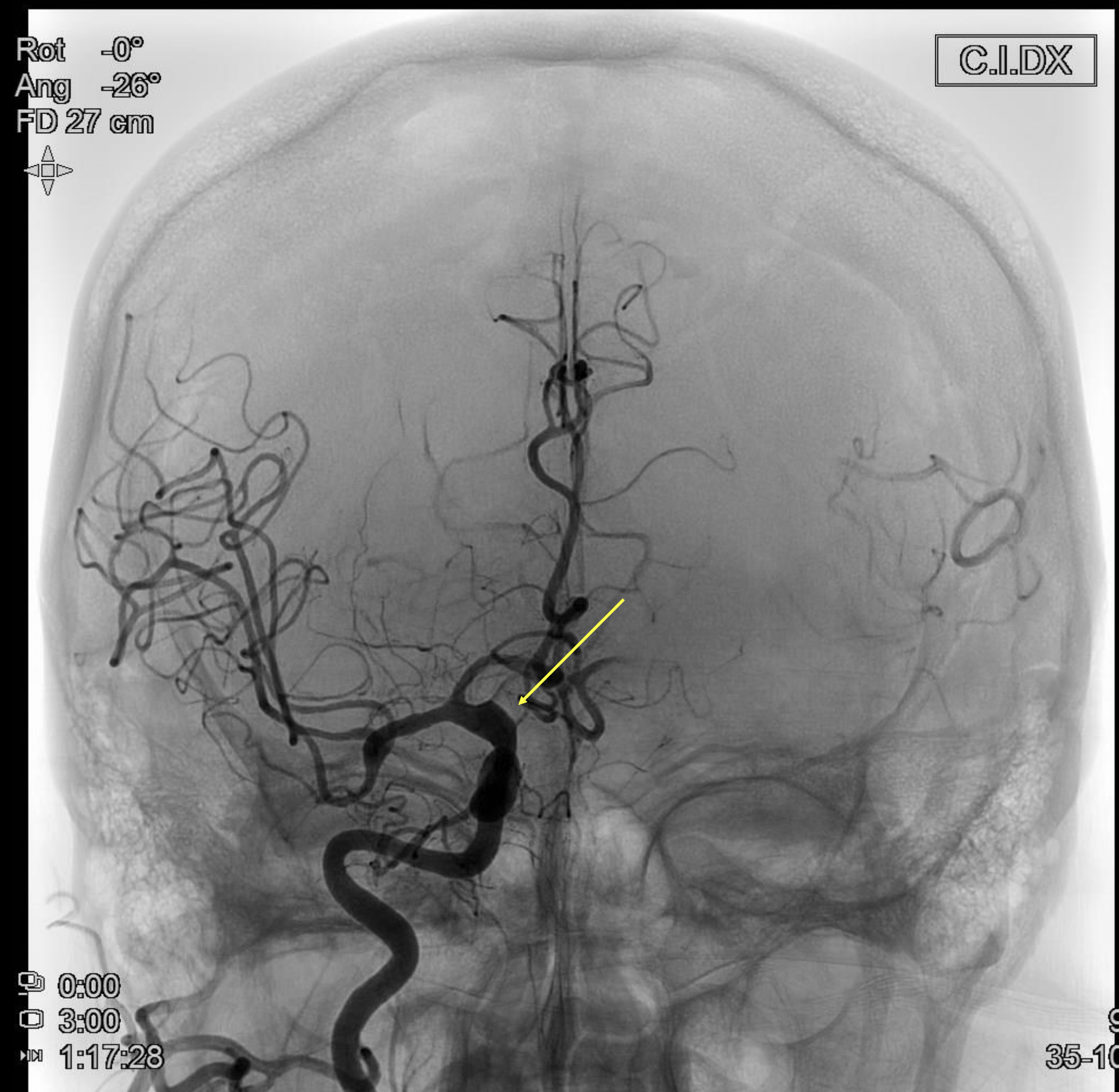


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Tipo volume: 3DRA
Data seriogr.: 2022/02/16
Numero seriogr.: 01:23:37
Dimensione cubo: 53.29 mm



Neuroradiologia interventistica

Aneurismi



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Neuroradiologia interventistica

Aneurismi

BLOOD BLISTER ANEURYSM

(0.3-1% DI TUTTI GLI ANEURISMI E 0.5%-2% DI TUTTE LE ESA ANEURISMATICHE)

- > 85% ANEURISMI PICCOLI
- MORFOLOGIA CONICA O A LARGO COLLETTO
- LOCALIZZAZIONE > ICA (NON BRANCHING SITE)
- ORIGINE INCERTA-- > DISSECAZIONE
- ALTO TASSO DI RISANGUINAMENTO
- TENDENZA ALLA CRESCITA
- POSSIBILI TRATTAMENTI:
CHIRURGICO, ENDOVASCOLARE
(CHIUSURA VASO, STENT E COIL, FD,
FD E COIL...)

Neuroradiologia interventistica

Aneurismi

BLOOD BLISTER ANEURYSM

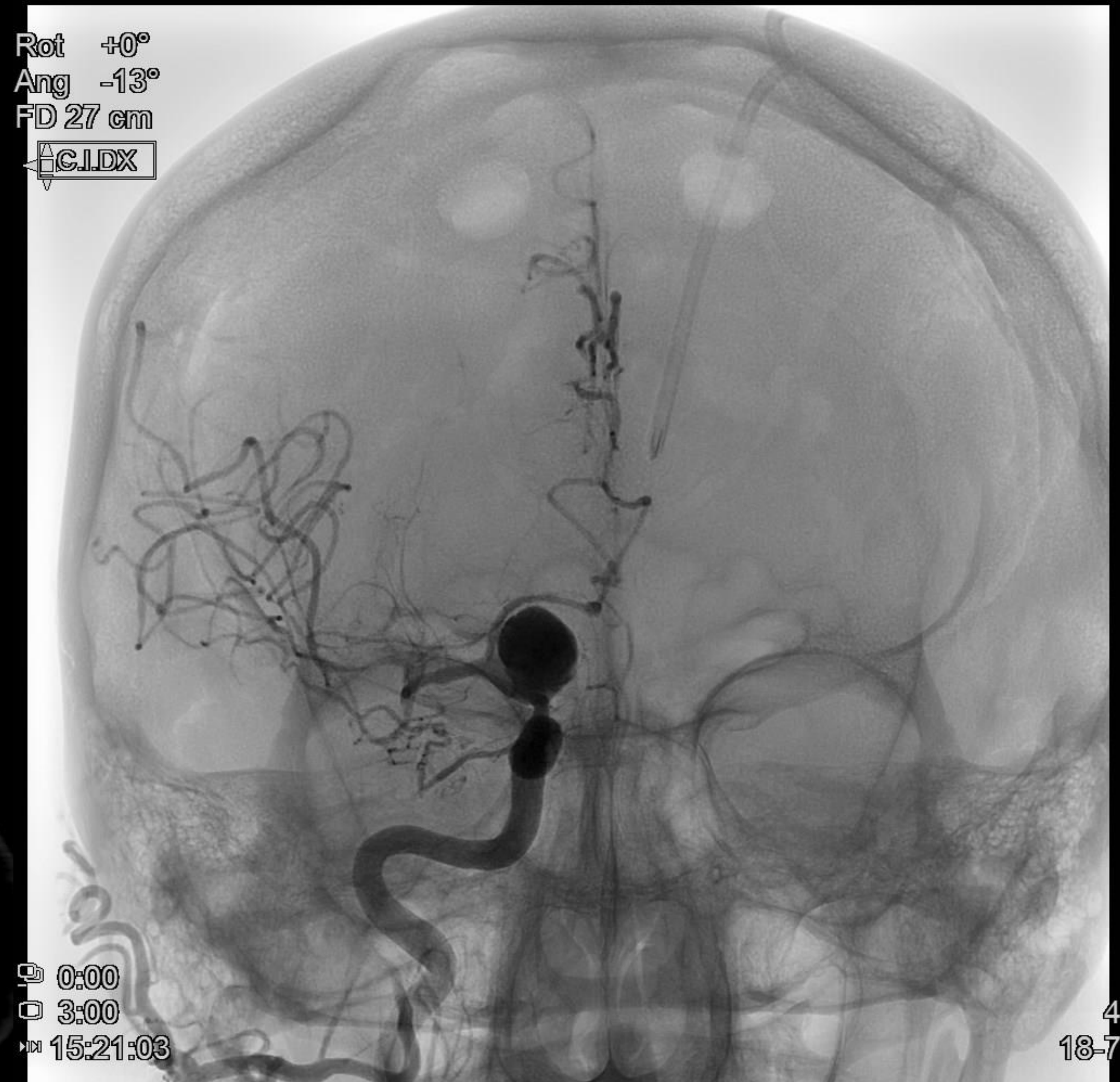
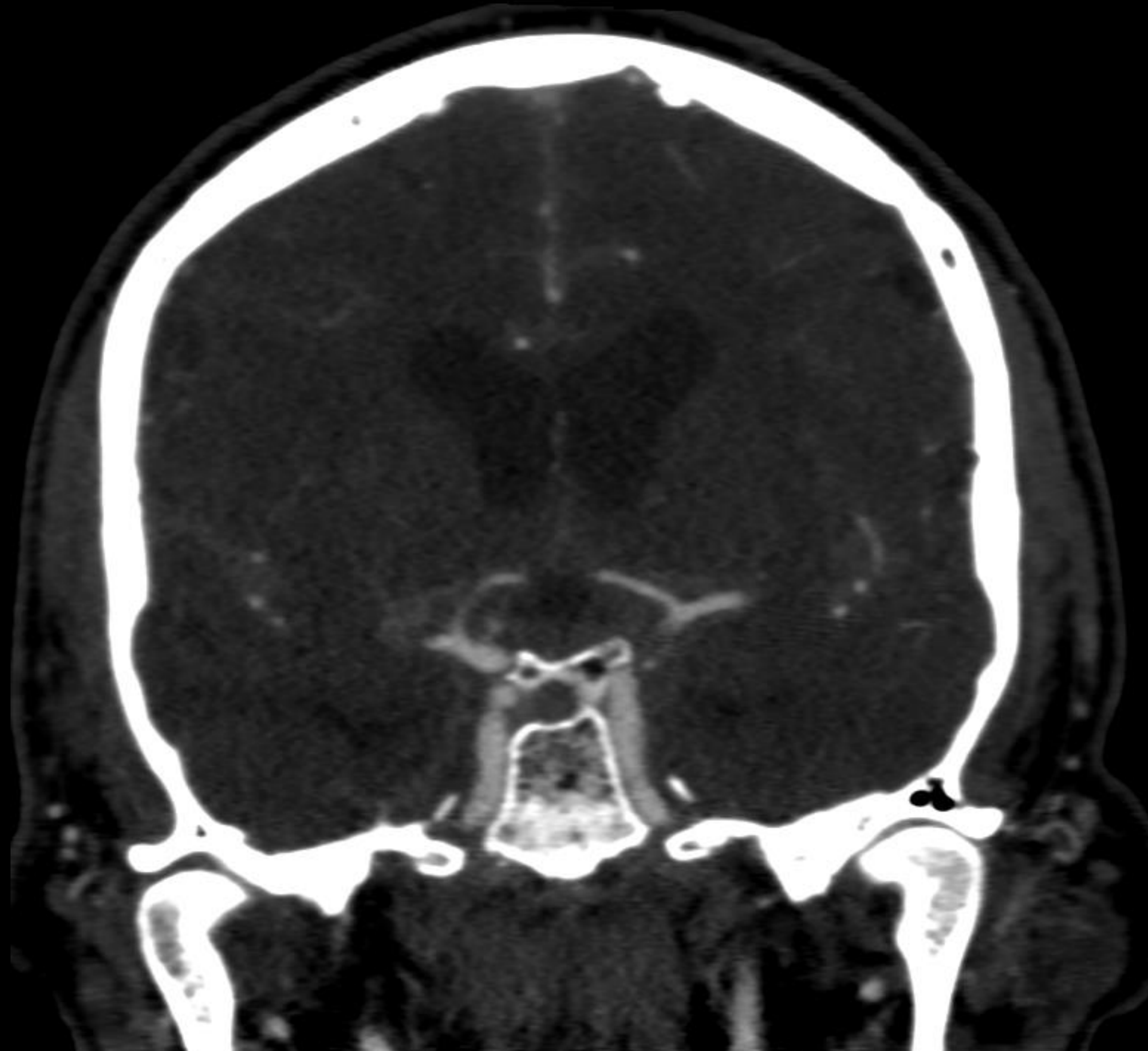
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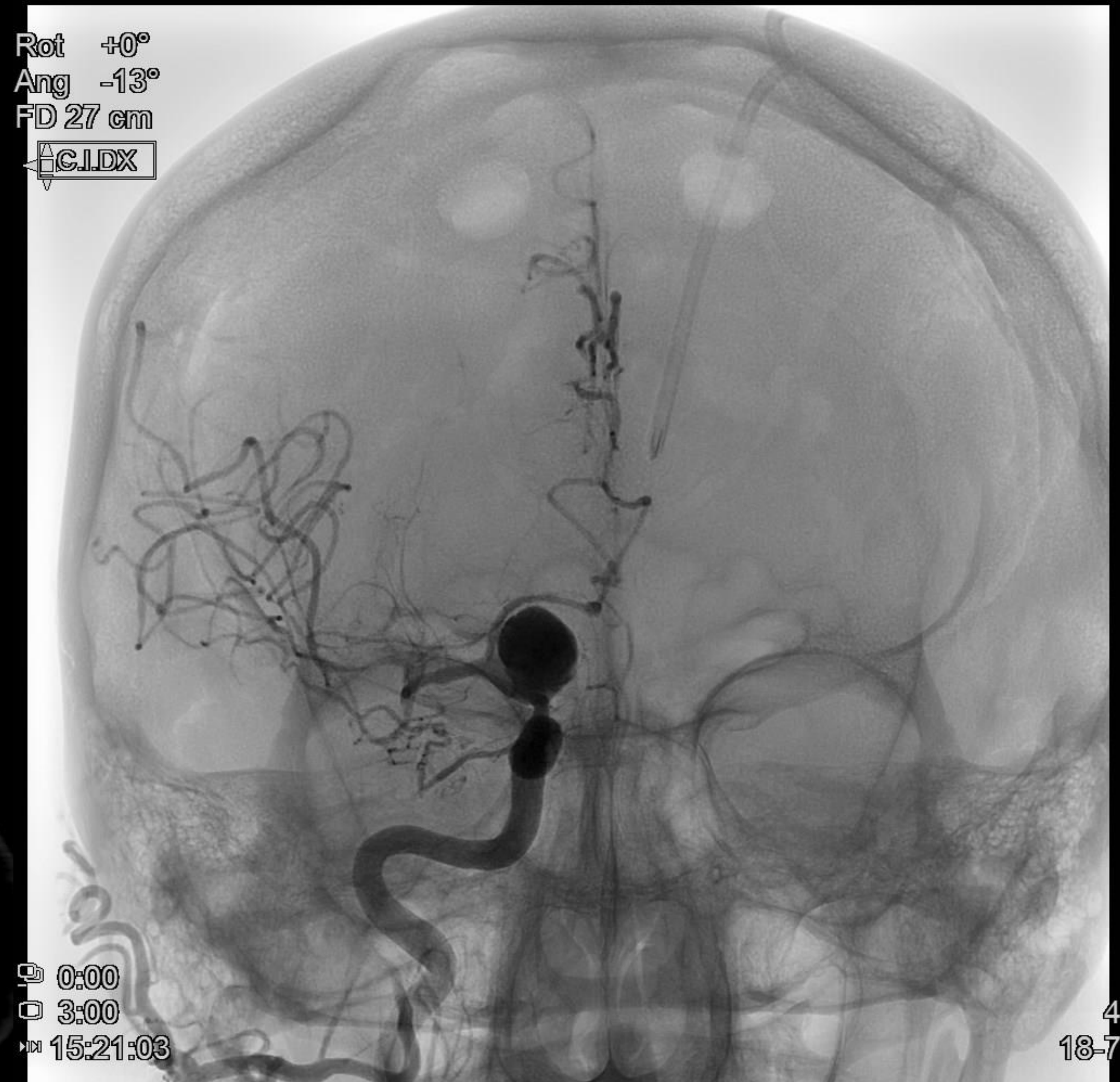
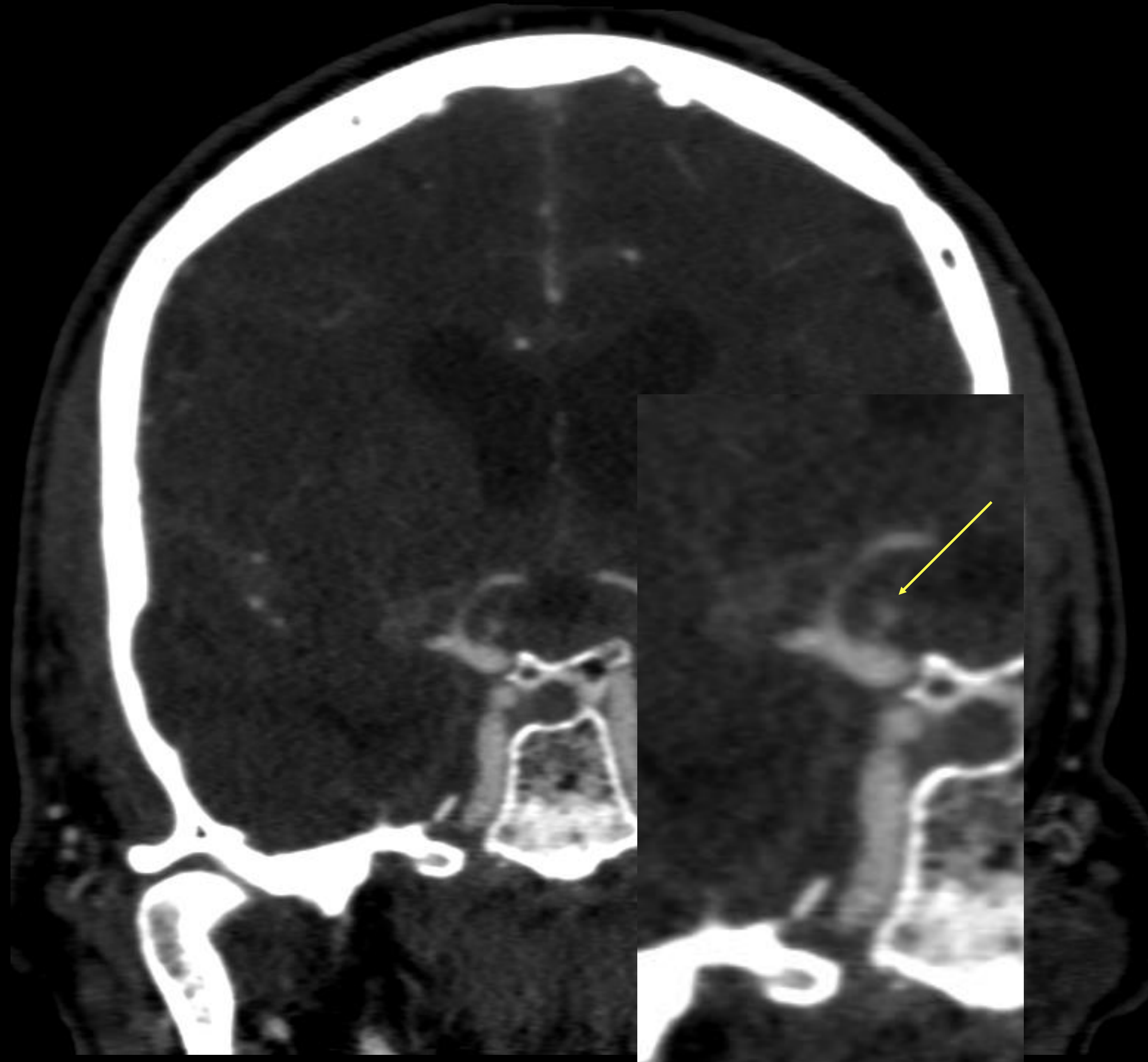
Neuroradiologia interventistica

Aneurismi



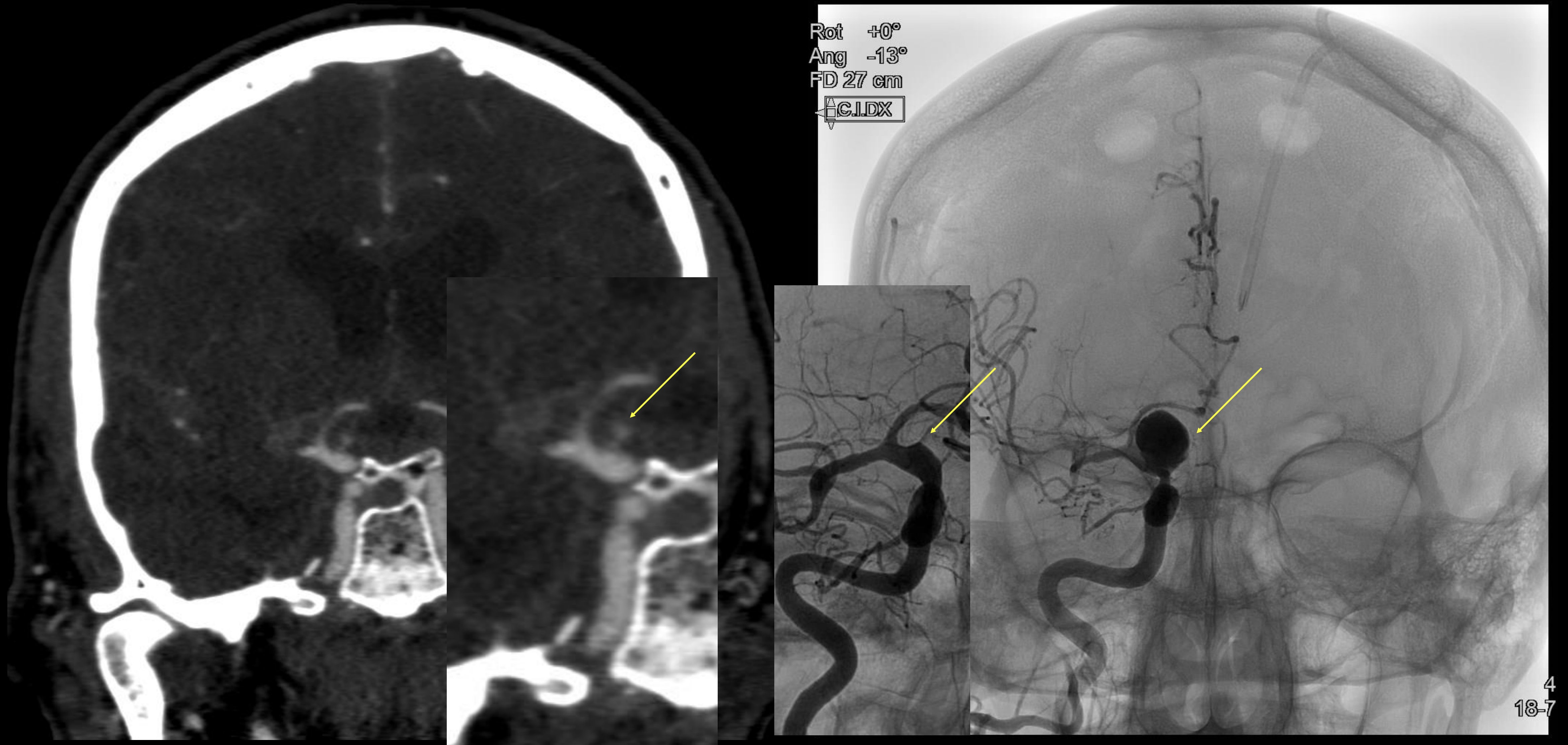
Neuroradiologia interventistica

Aneurismi



Neuroradiologia interventistica

Aneurismi



Neuroradiologia interventistica

Aneurismi

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BLISTER FLOW DIVERTER

Complete aneurysm occlusion of 85%

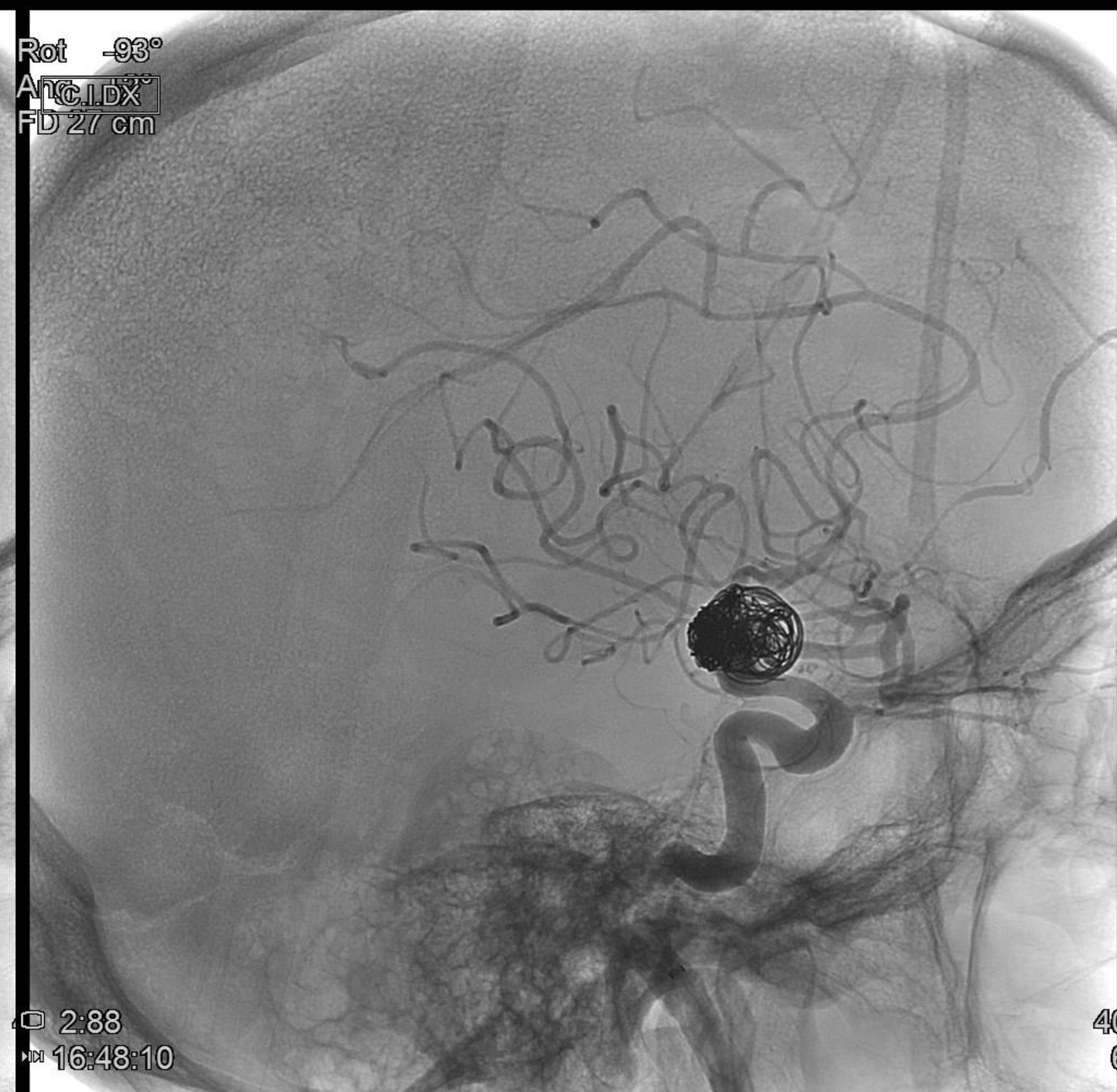
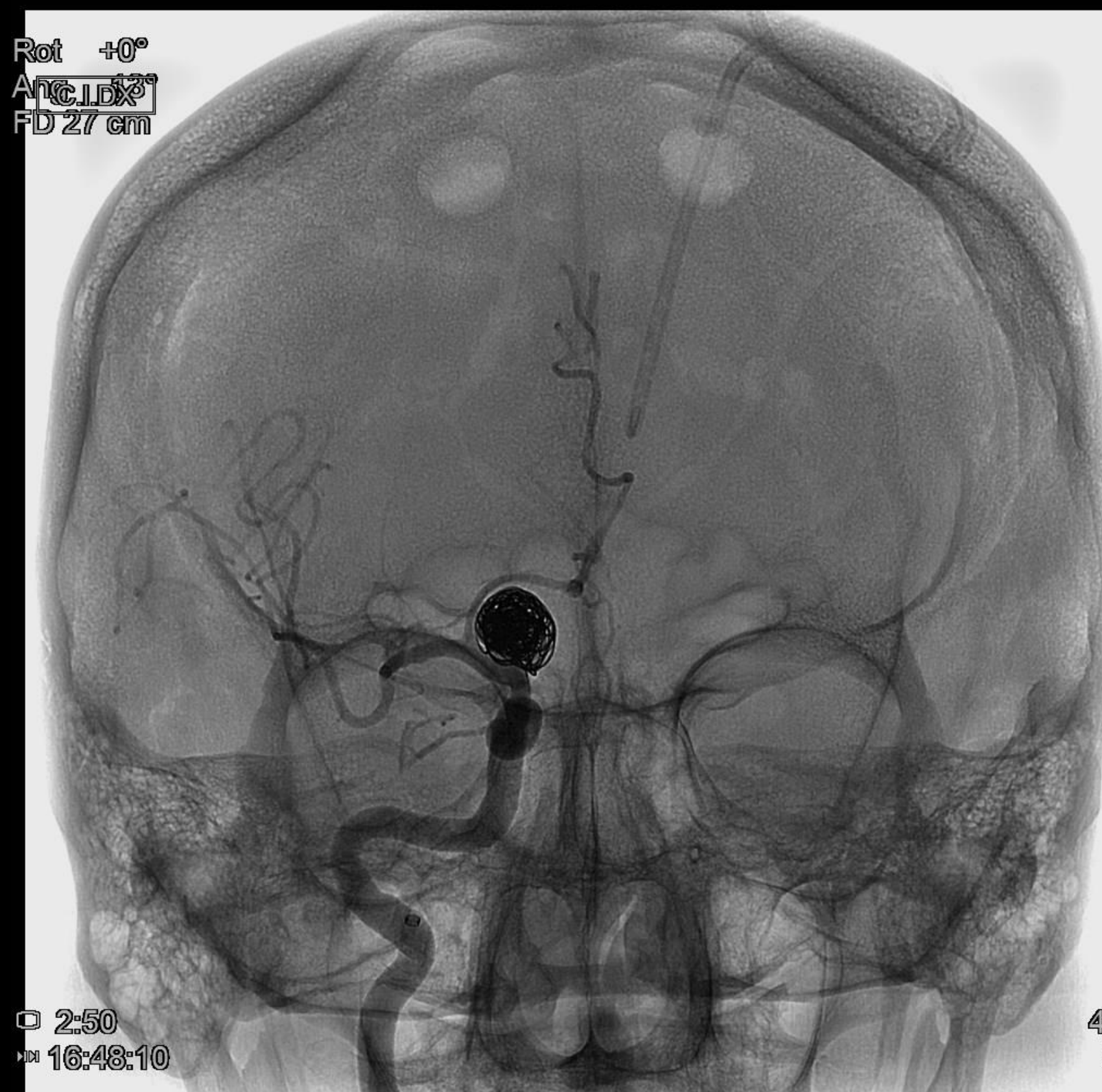
Retreatment of 8%

mRs=0-2 of 83%

Peschillo et al. A Systematic Review and Meta-Analysis of Treatment and Outcome of Blister-Like Aneurysms. AJNR 2015

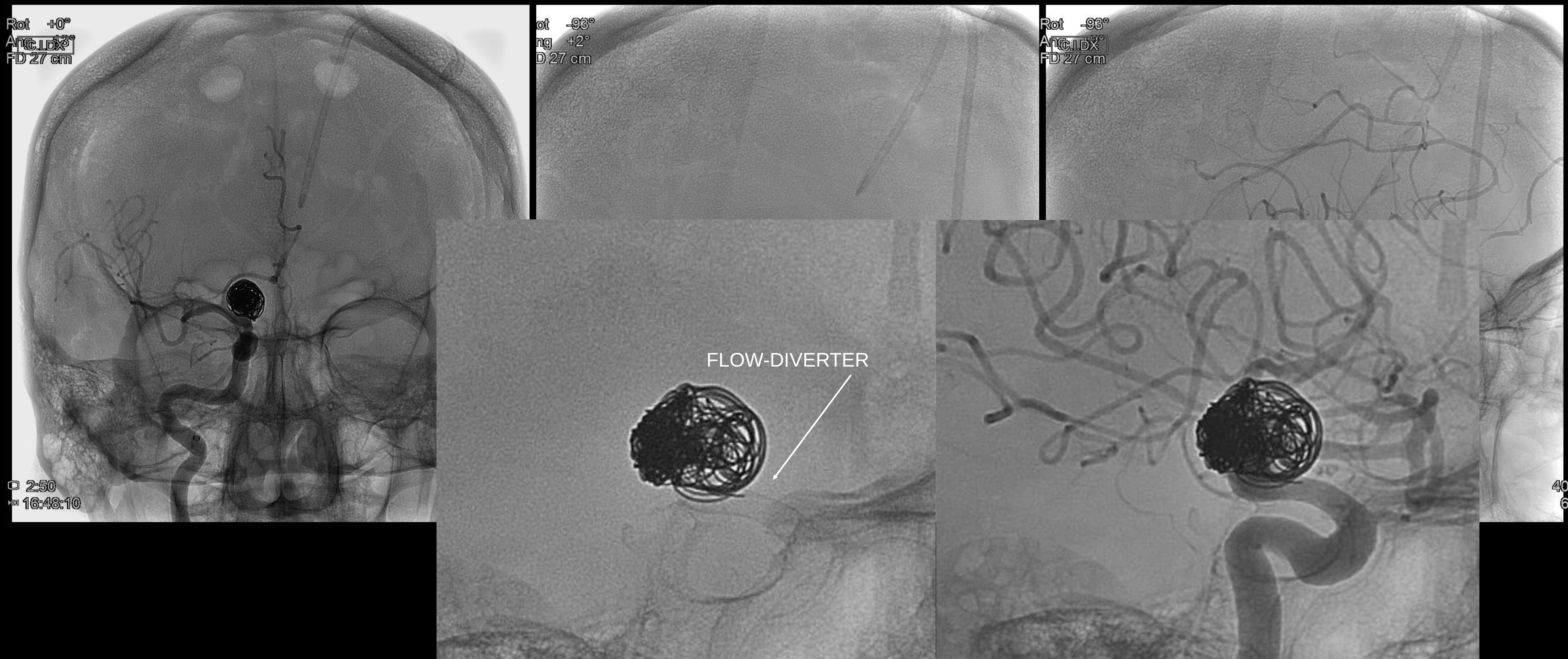
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Aneurismi



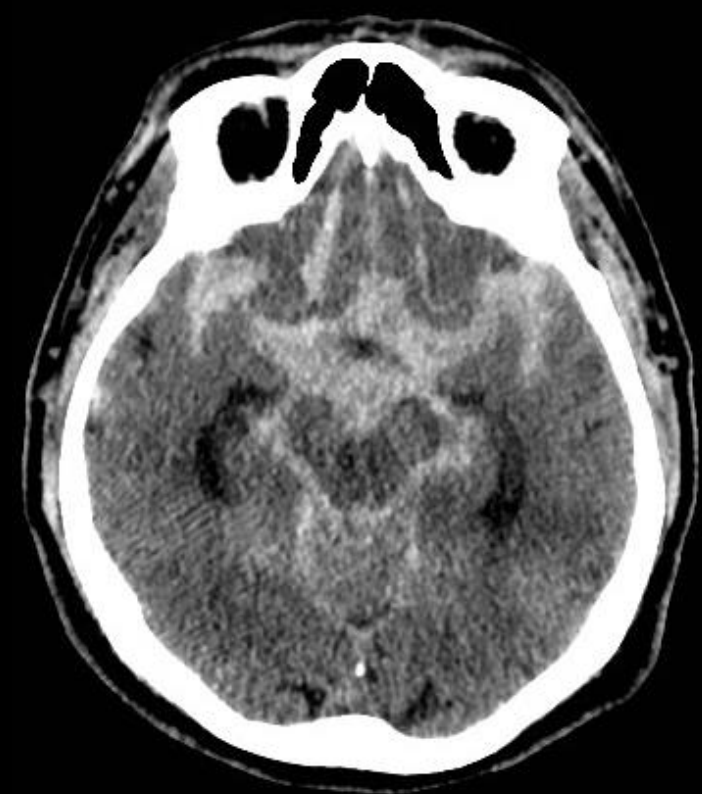
Neuroradiologia interventistica

Aneurismi



Neuroradiologia interventistica

Emorragie intracraniche



Neuroradiologia interventistica

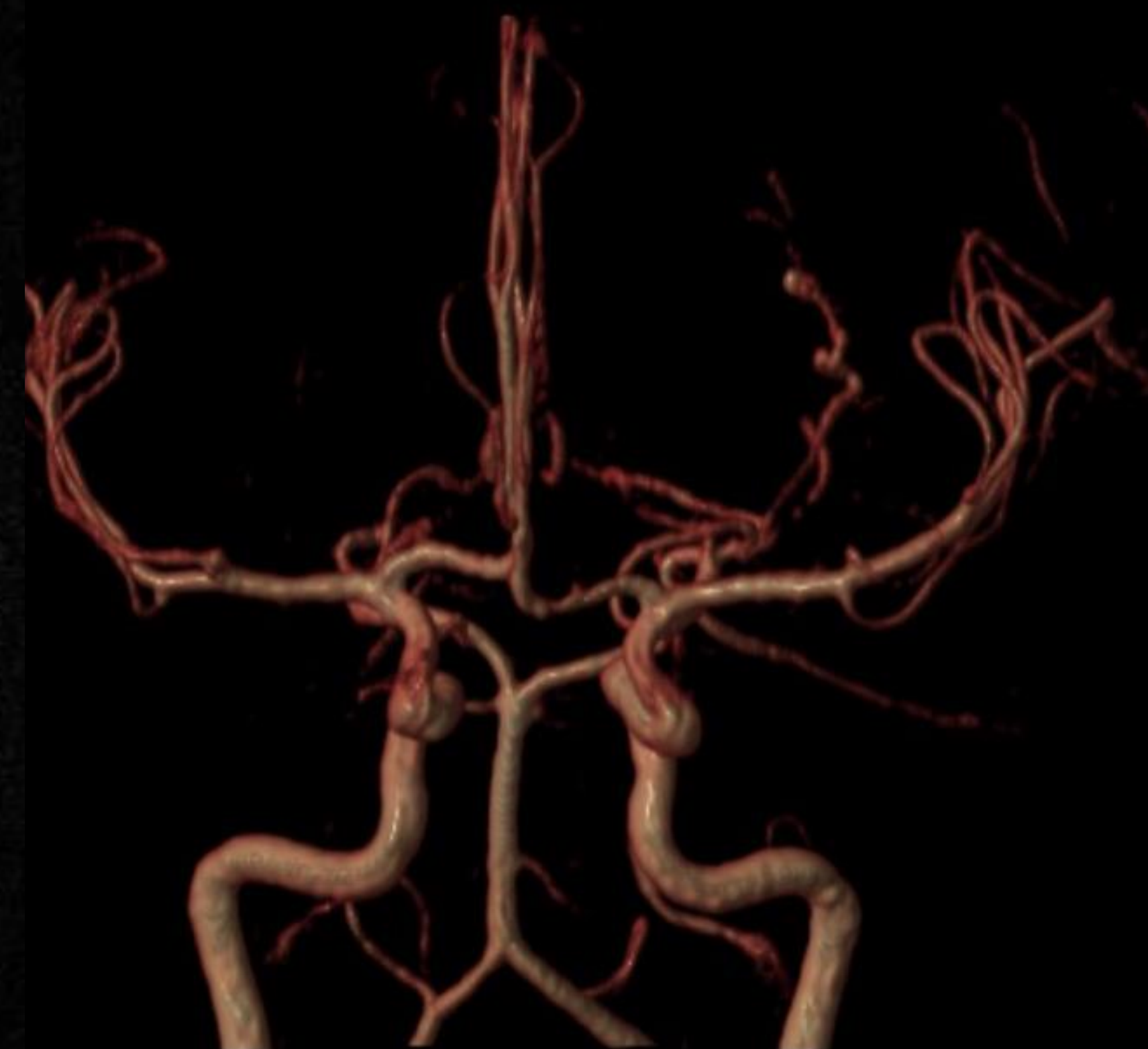
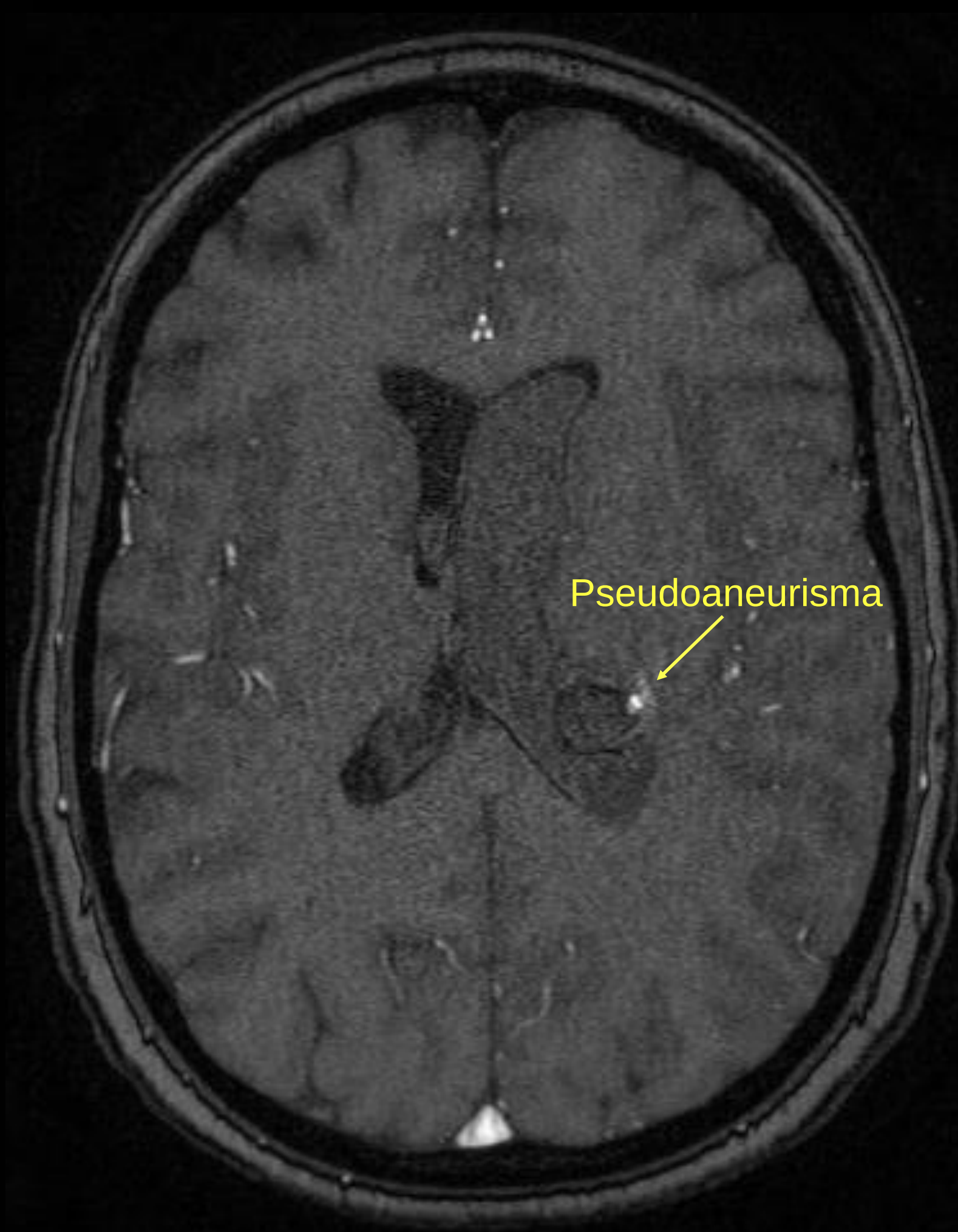
Malformazione artero-venosa piale



F 32 anni
Gravida alla
25ma sett.
Cefalea e
vomito, crisi
epilettica
GCS 15

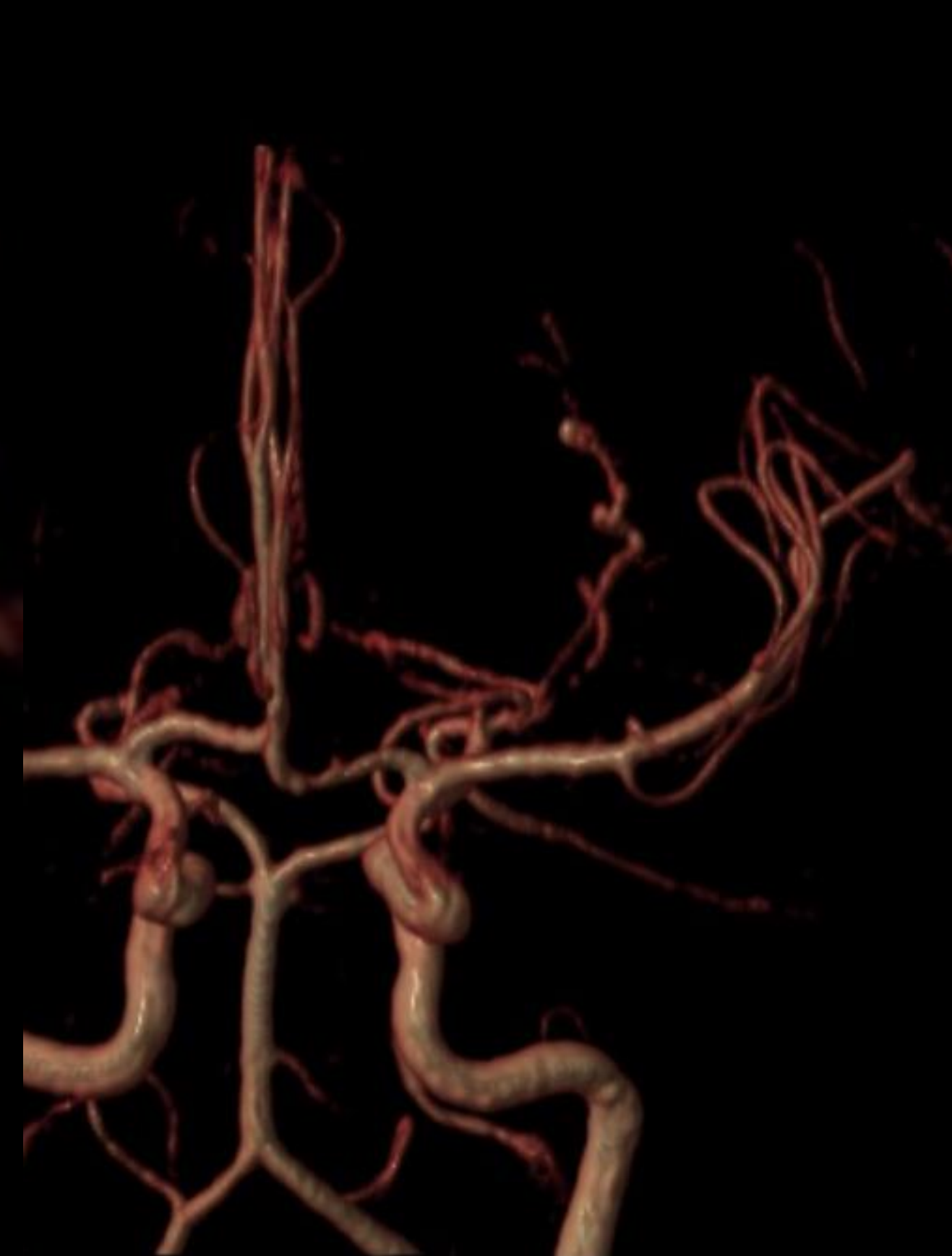
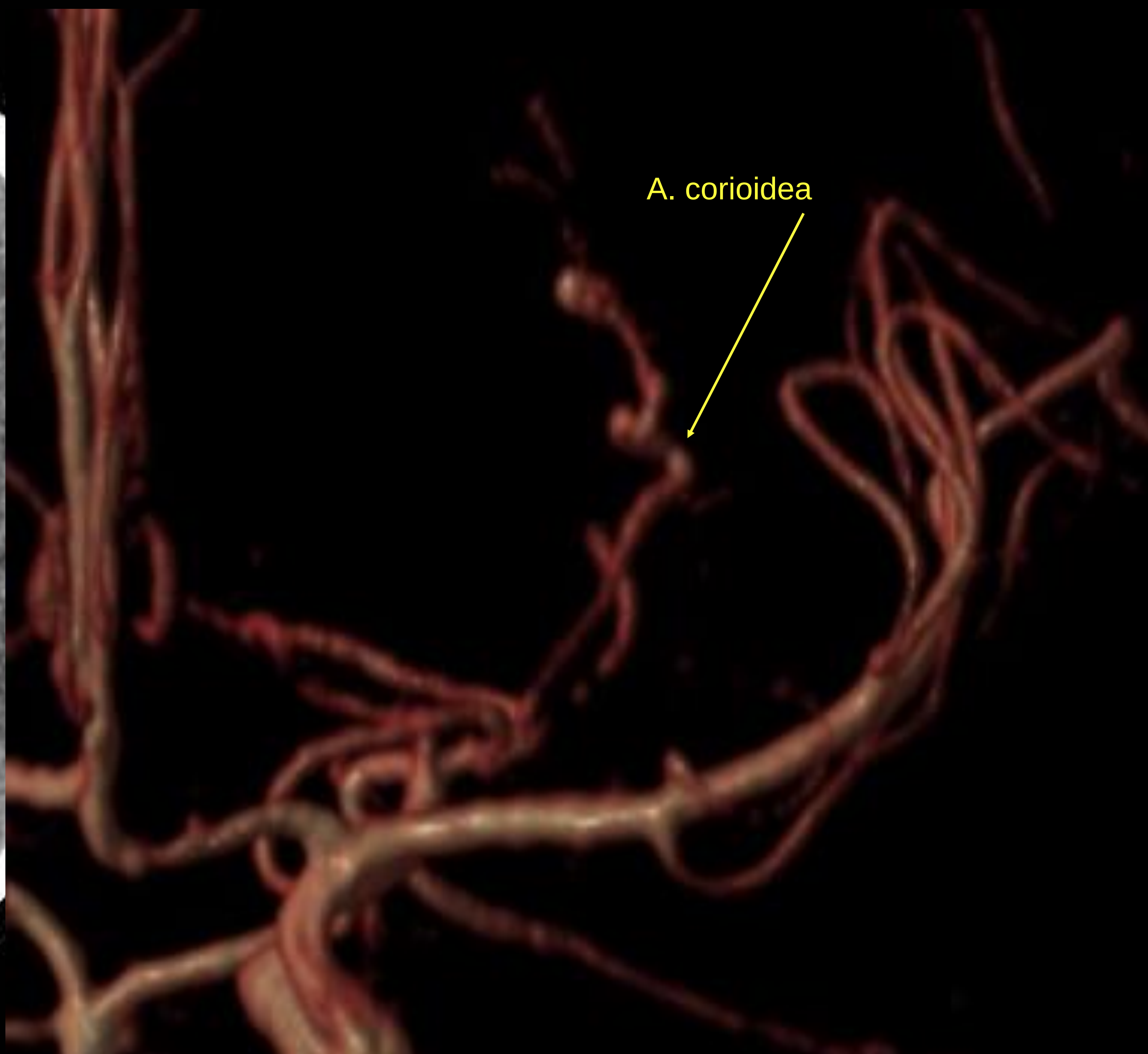
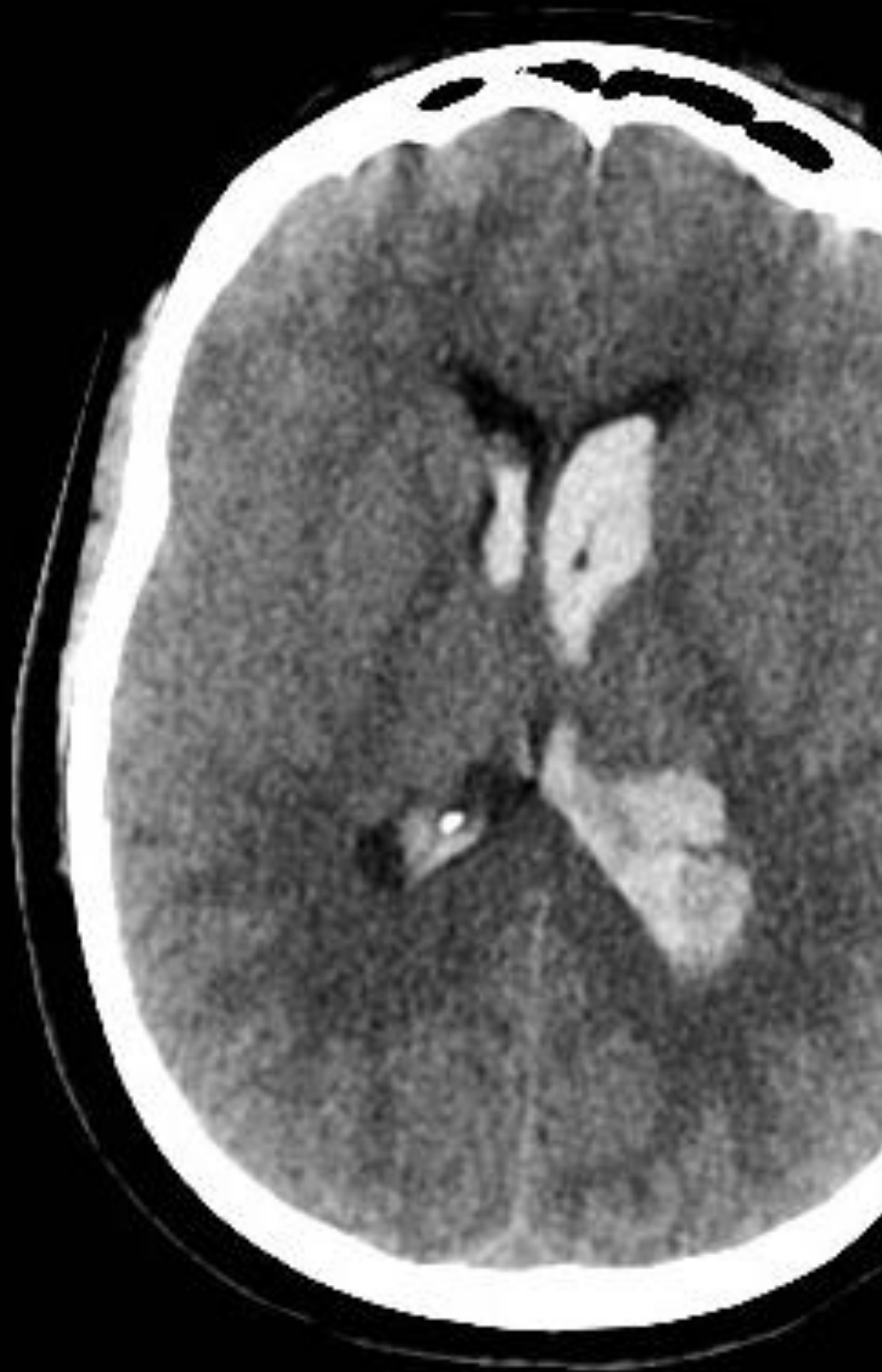
Neuroradiologia interventistica

Malformazione artero-venosa piale



Neuroradiologia interventistica

Malformazione artero-venosa piale

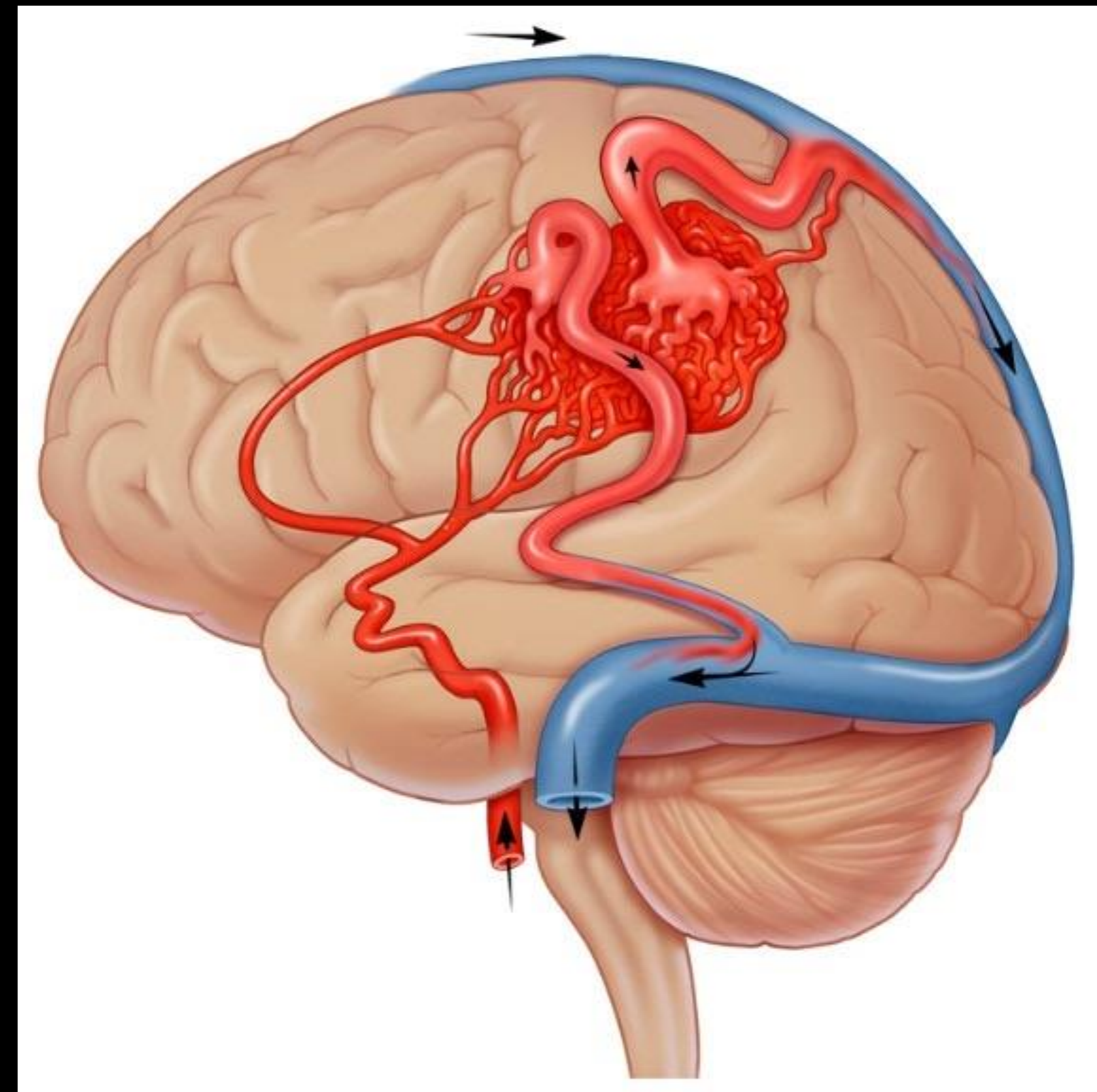


Neuroradiologia interventistica

Malformazione artero-venosa piale

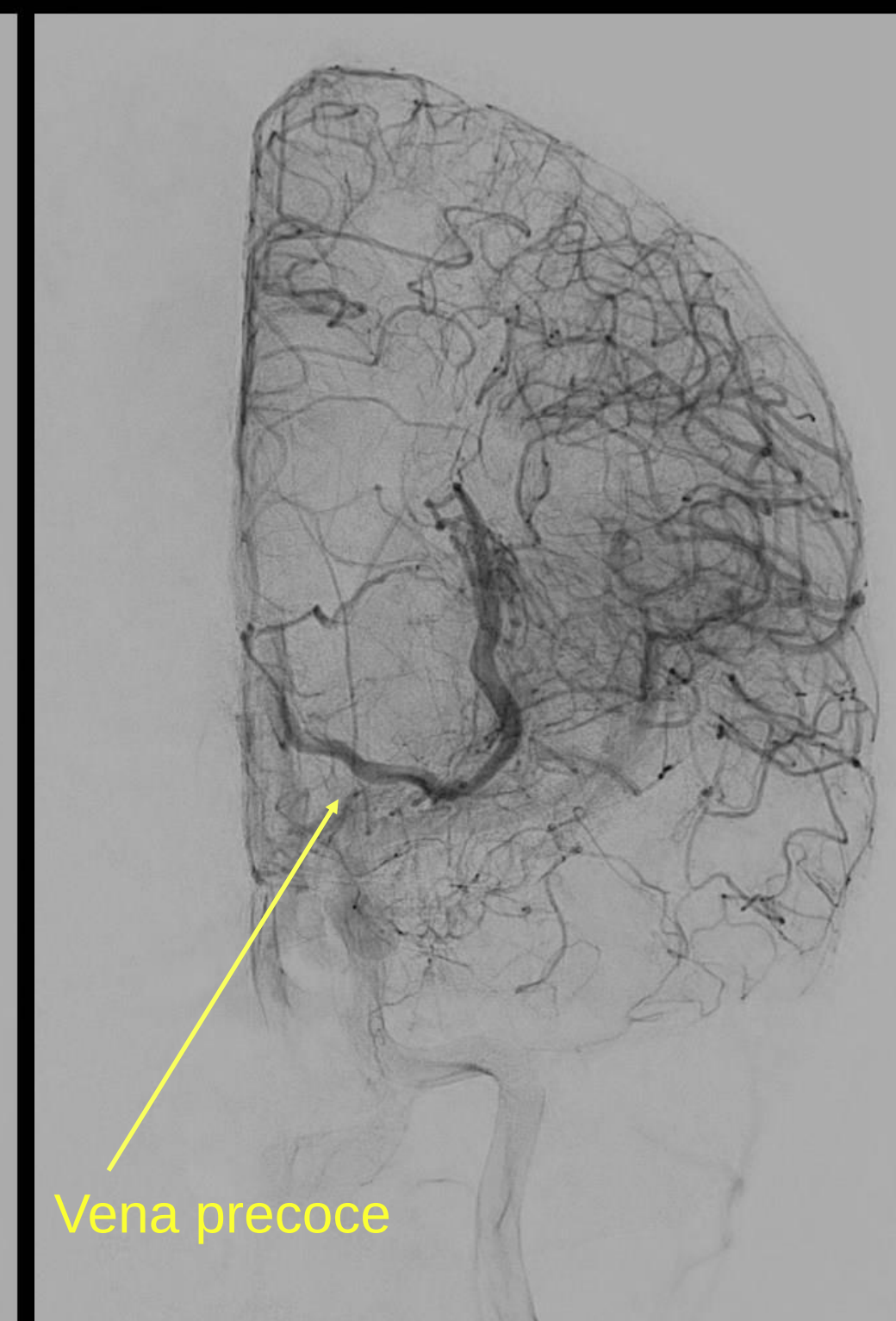
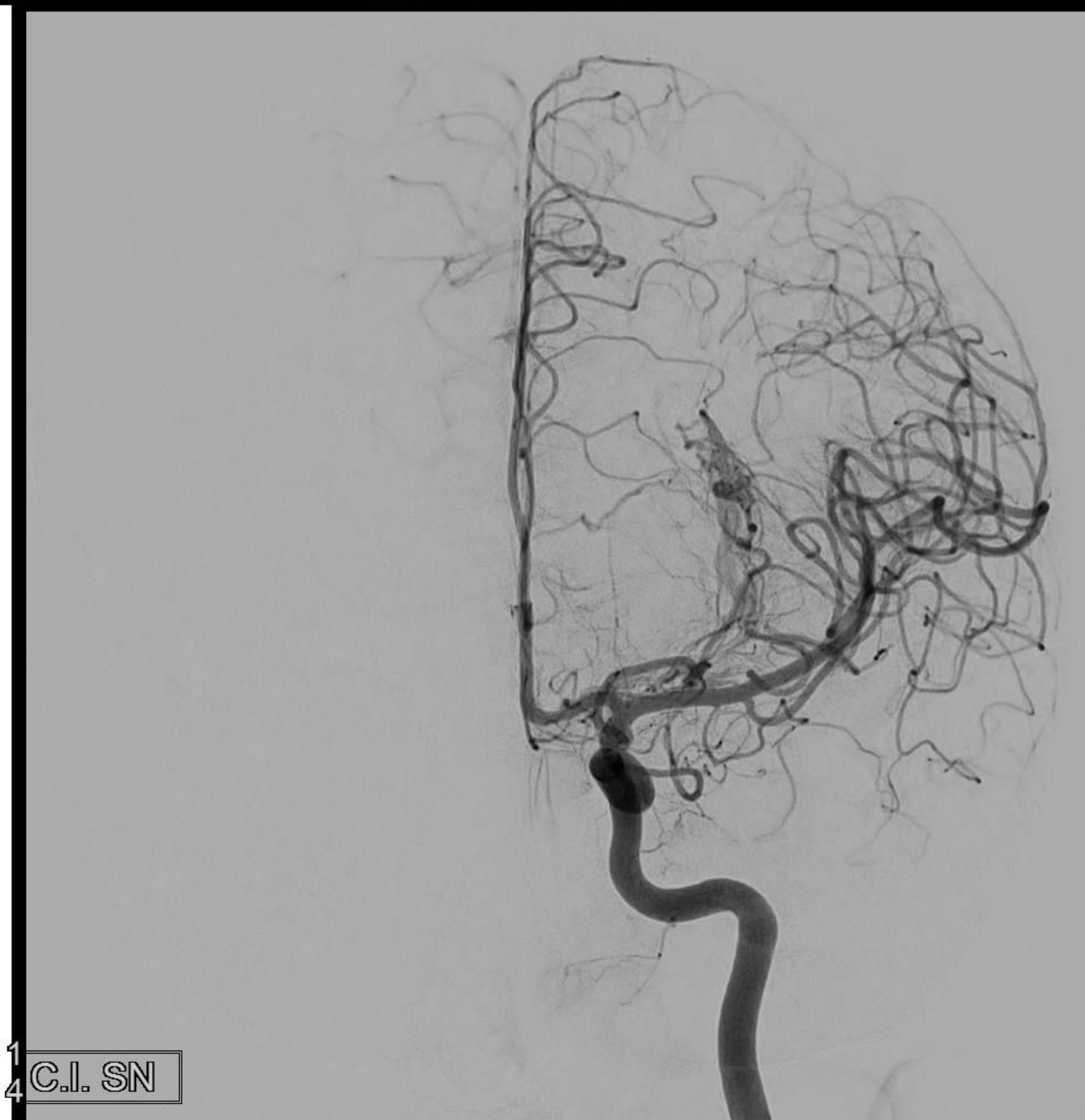
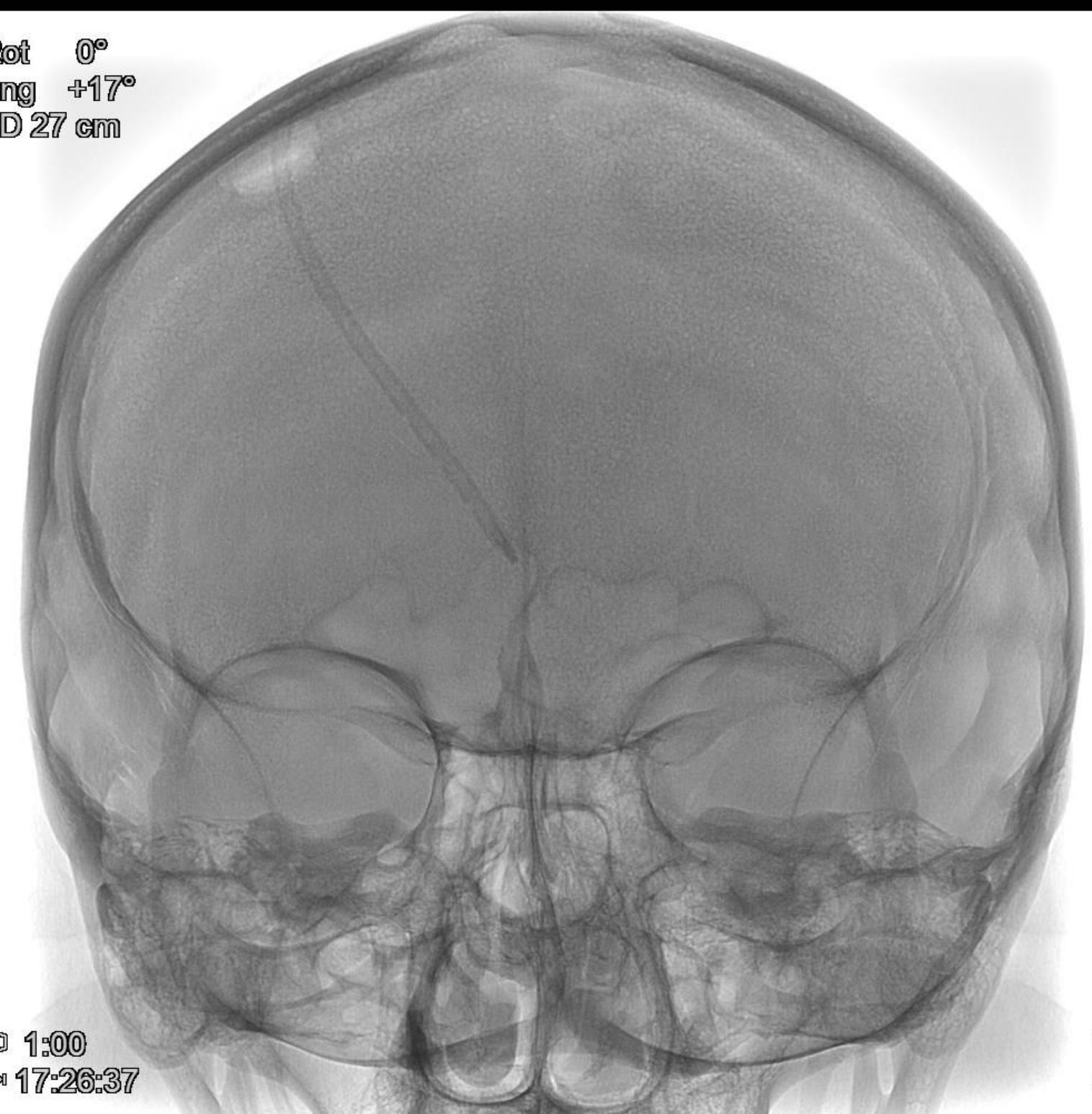
MALFORMAZIONE ARTERO-VENOSA PIALE (Incidenza di 2/100000/anno con presentazione emorragica nel 10% dei casi)

- Anomala comunicazione tra arterie e vene cerebrali, senza interposizione del normale letto capillare
- **NIDUS** di vasi malformati al posto del normale letto capillare, possibili **PSEUDOANEURISMI INTRANIDALI**
- **ARTERIE AFFERENTI (FEEDER)** alla malformazione prevalentemente PIALI (possibili concomitanti afferenze durali) ectasiche e/o con **PSEUDOANEURISMI DA FLUSSO**
- **VENE DI DRENAGGIO** della malformazione EFFERENTI nel sistema VENOSO PROFONDO e/o SUPERFICIALE, possibili **ECTASIE/VARICI VENOSE**
- VALUTARE: localizzazione del nidus (aree eloquenti?), dimensioni del nidus, rapidità dello shunt artero-veno, drenaggio venoso superficiale e/o profondo
- OBIETTIVO NEL **SETTING ACUTO** ricercare causa del sanguinamento (Pseudoaneurisma da flusso o intranidale, rottura di una varice venosa) e occludere la causa del sanguinamento



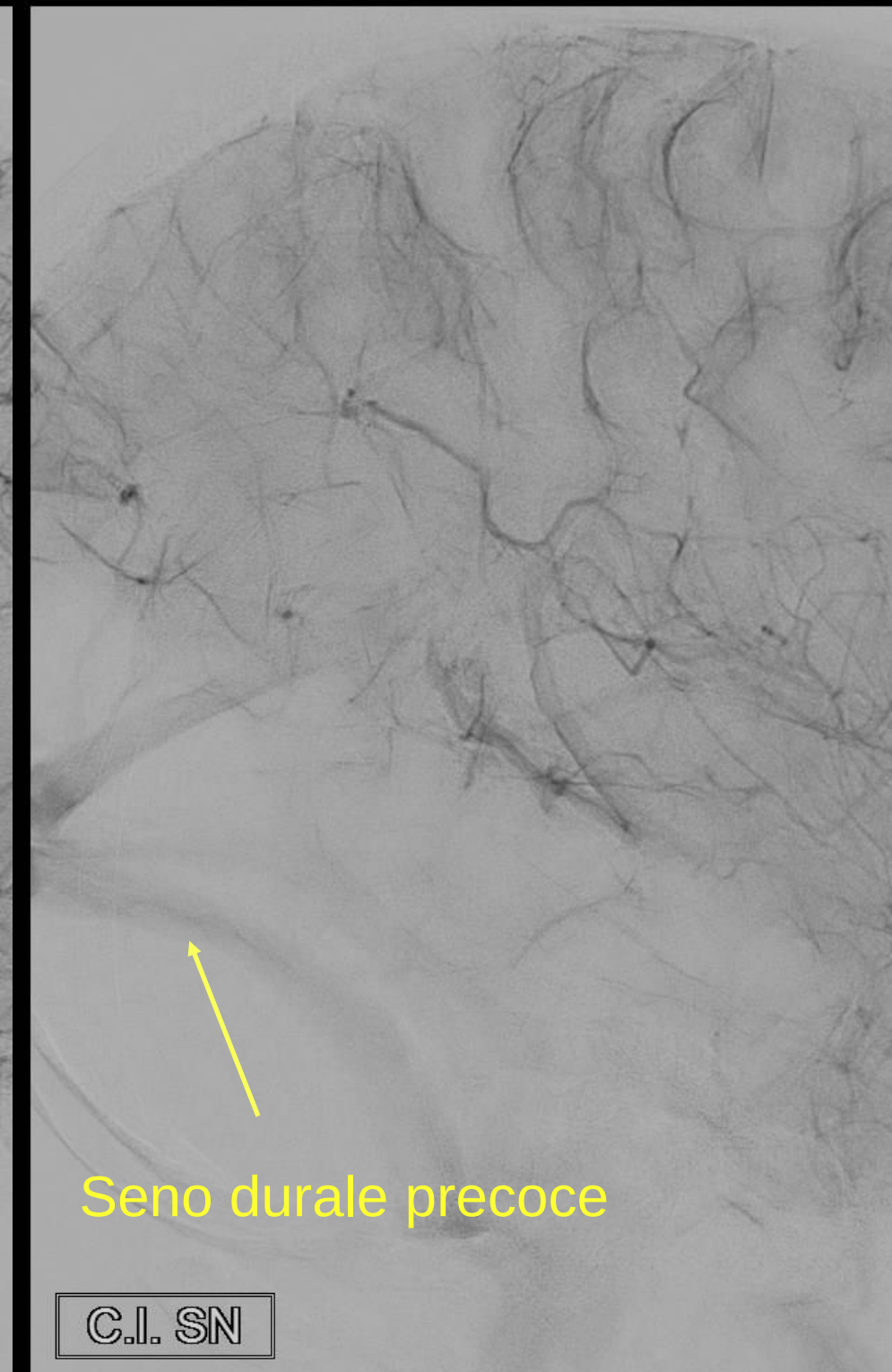
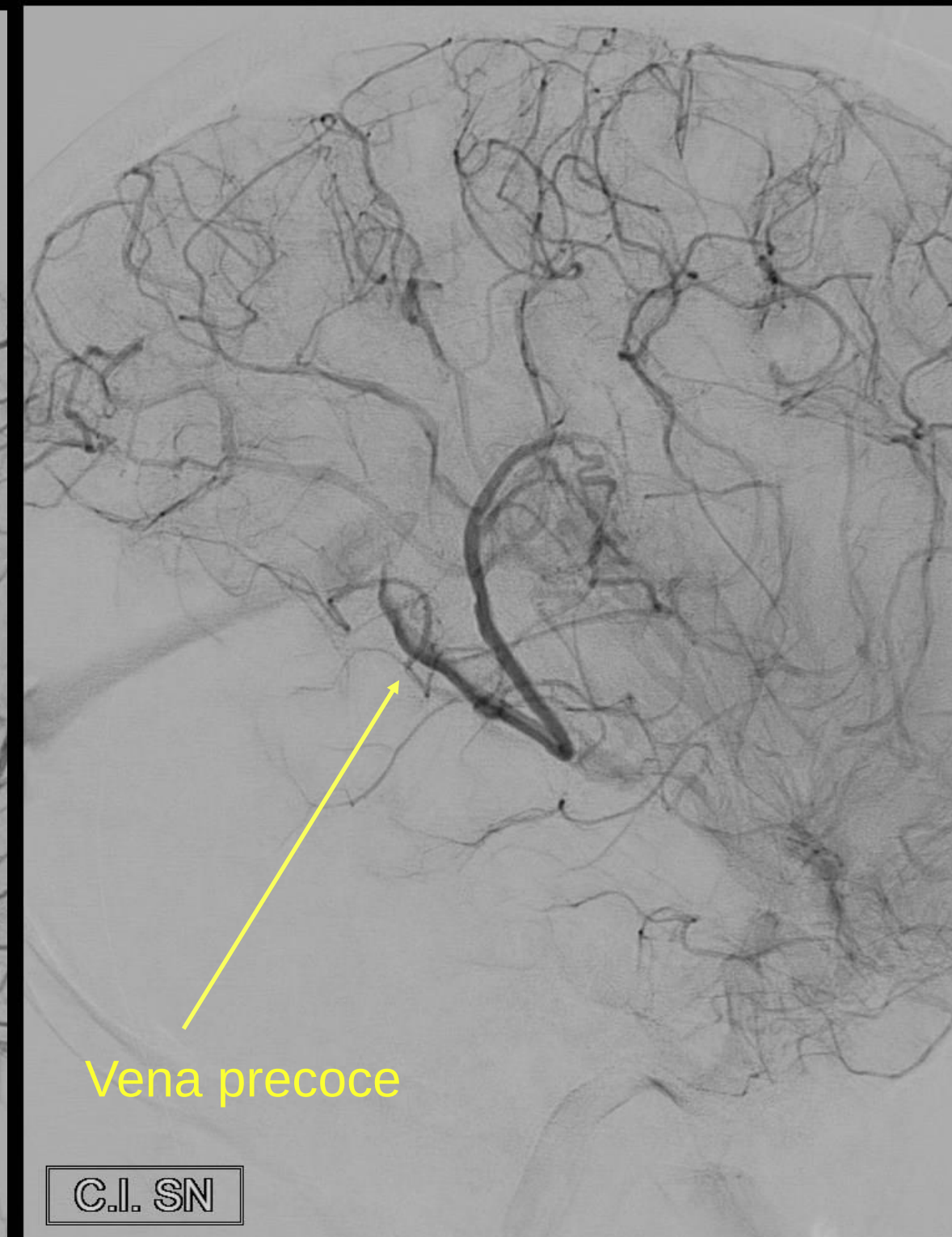
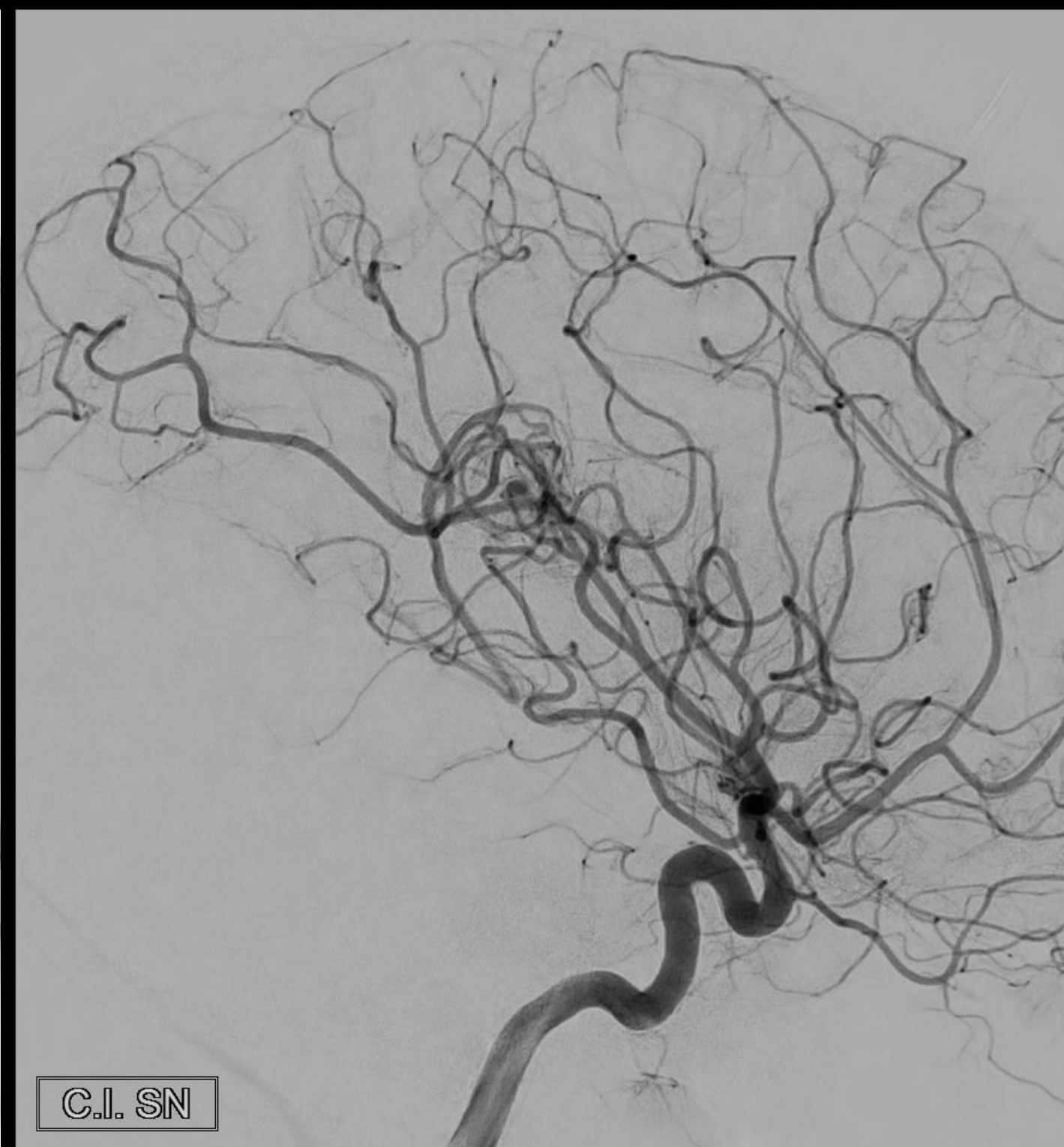
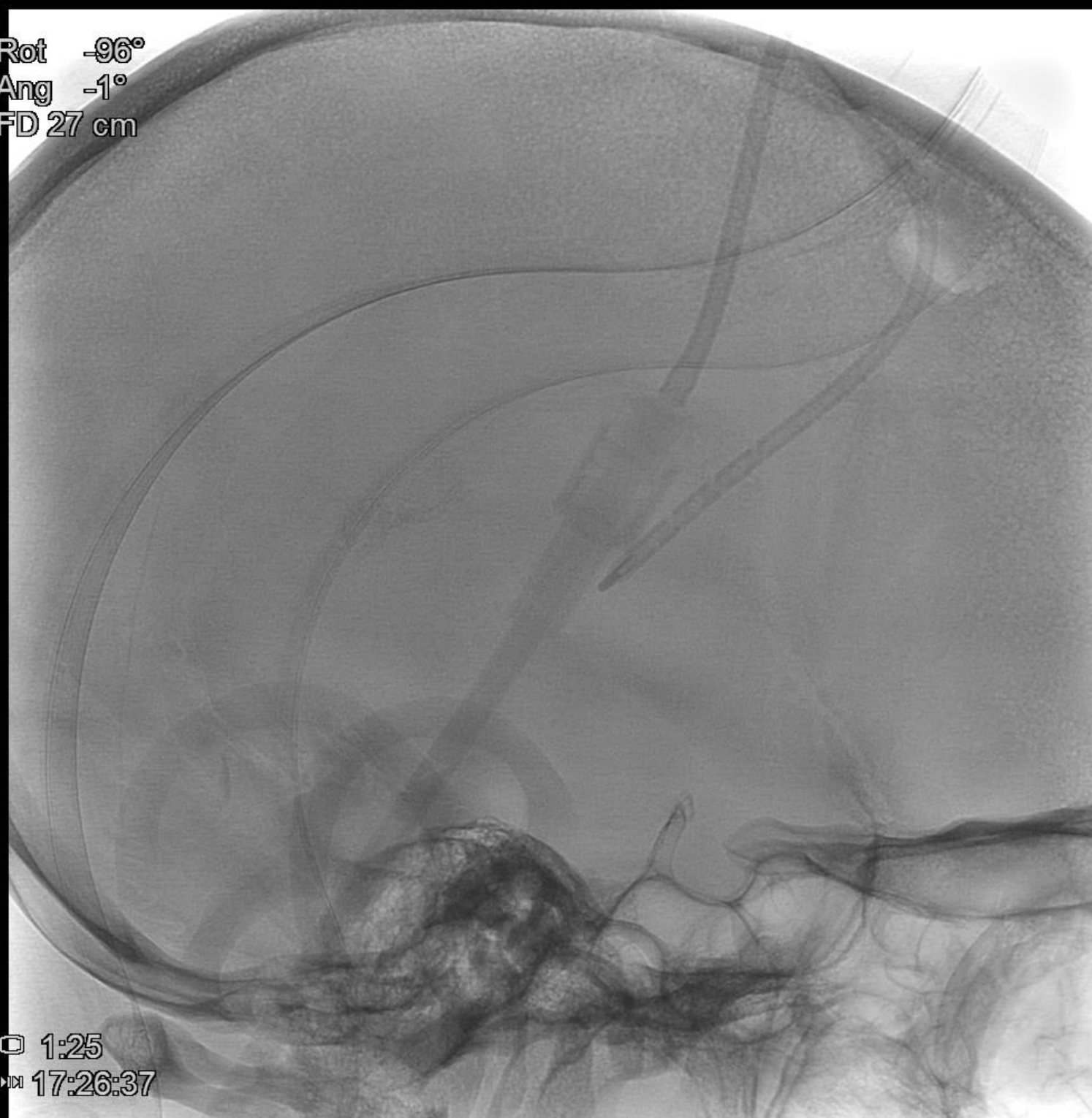
Neuroradiologia interventistica

Malformazione artero-venosa piale



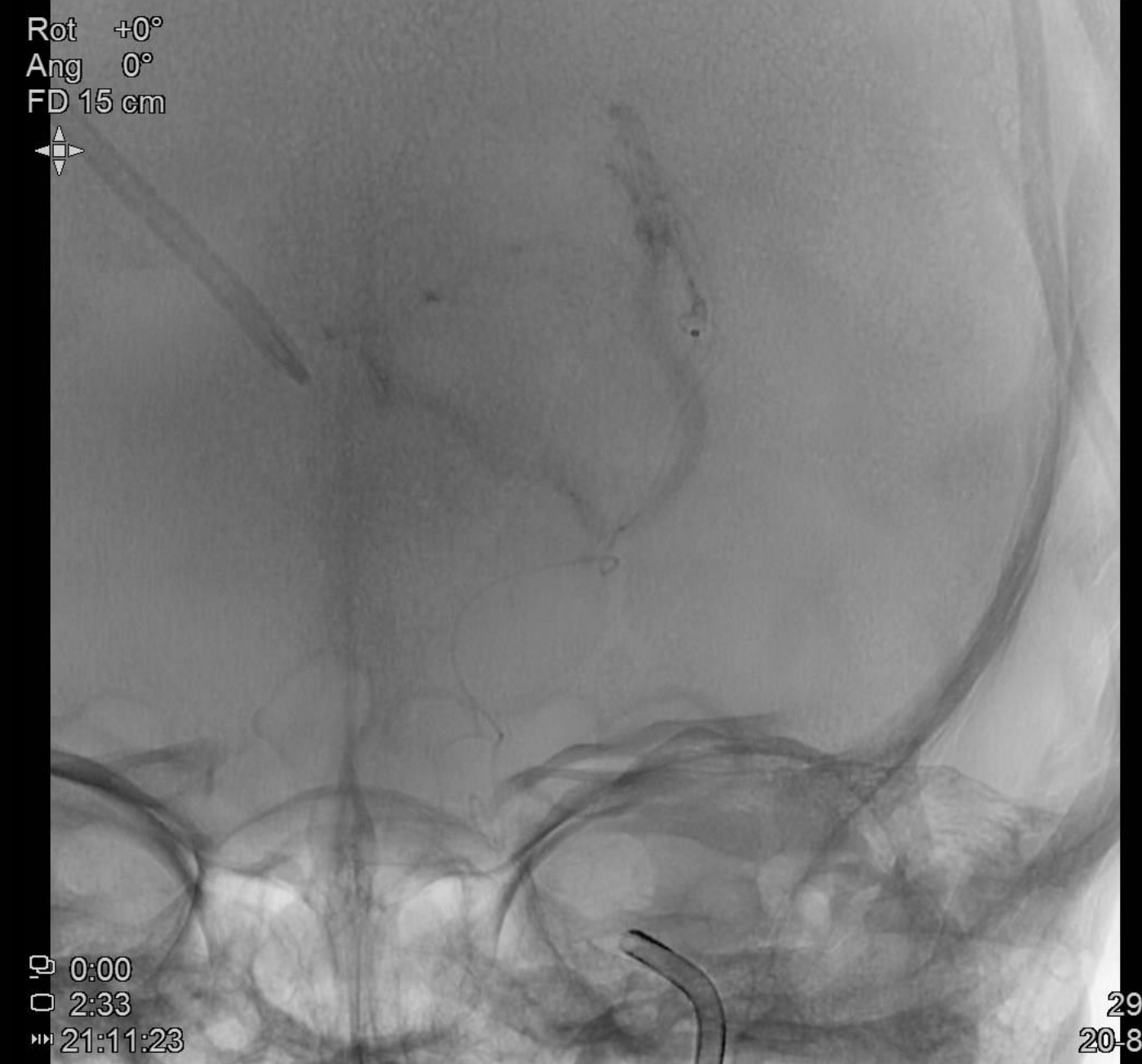
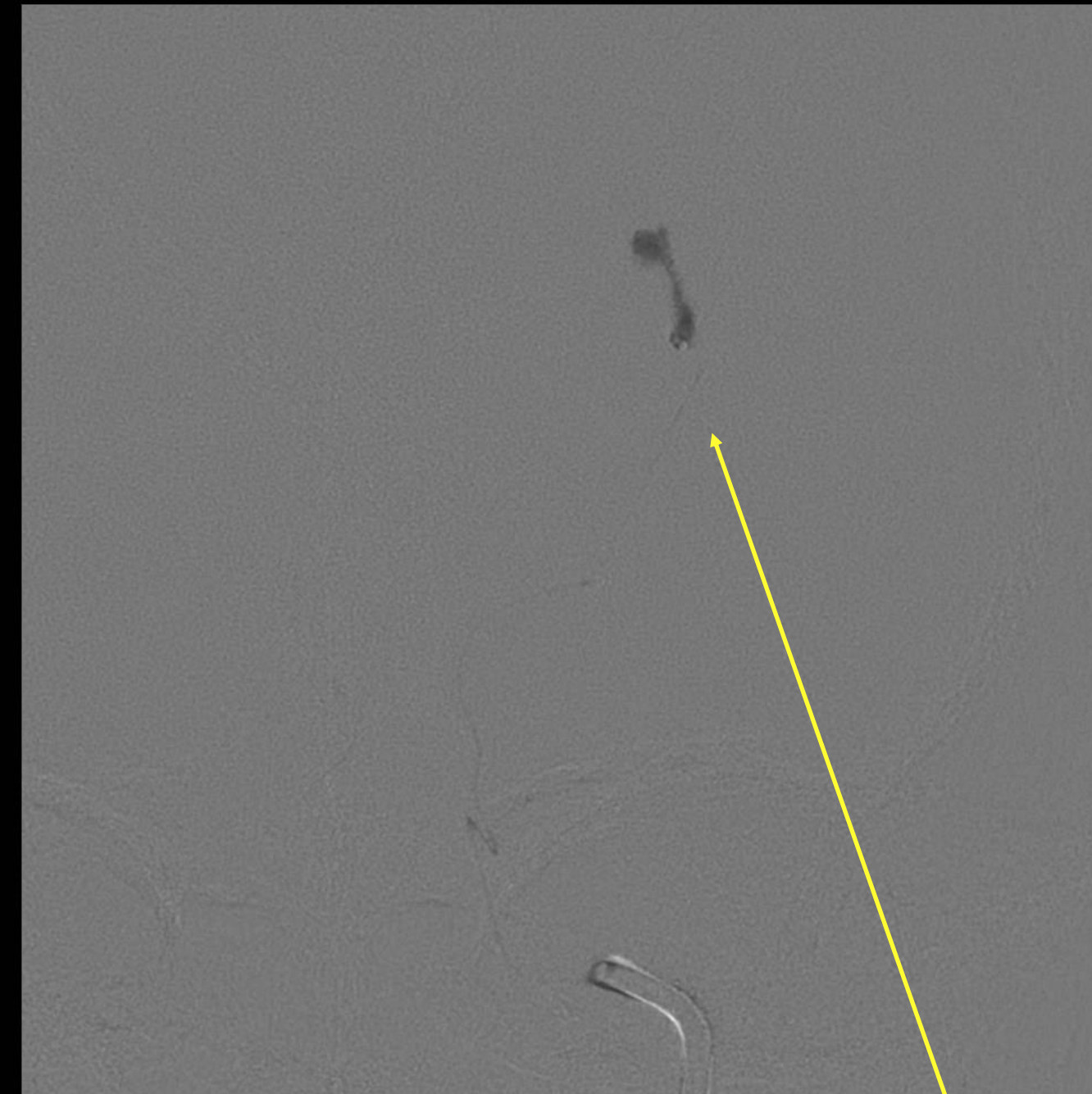
Neuroradiologia interventistica

Malformazione artero-venosa piaie



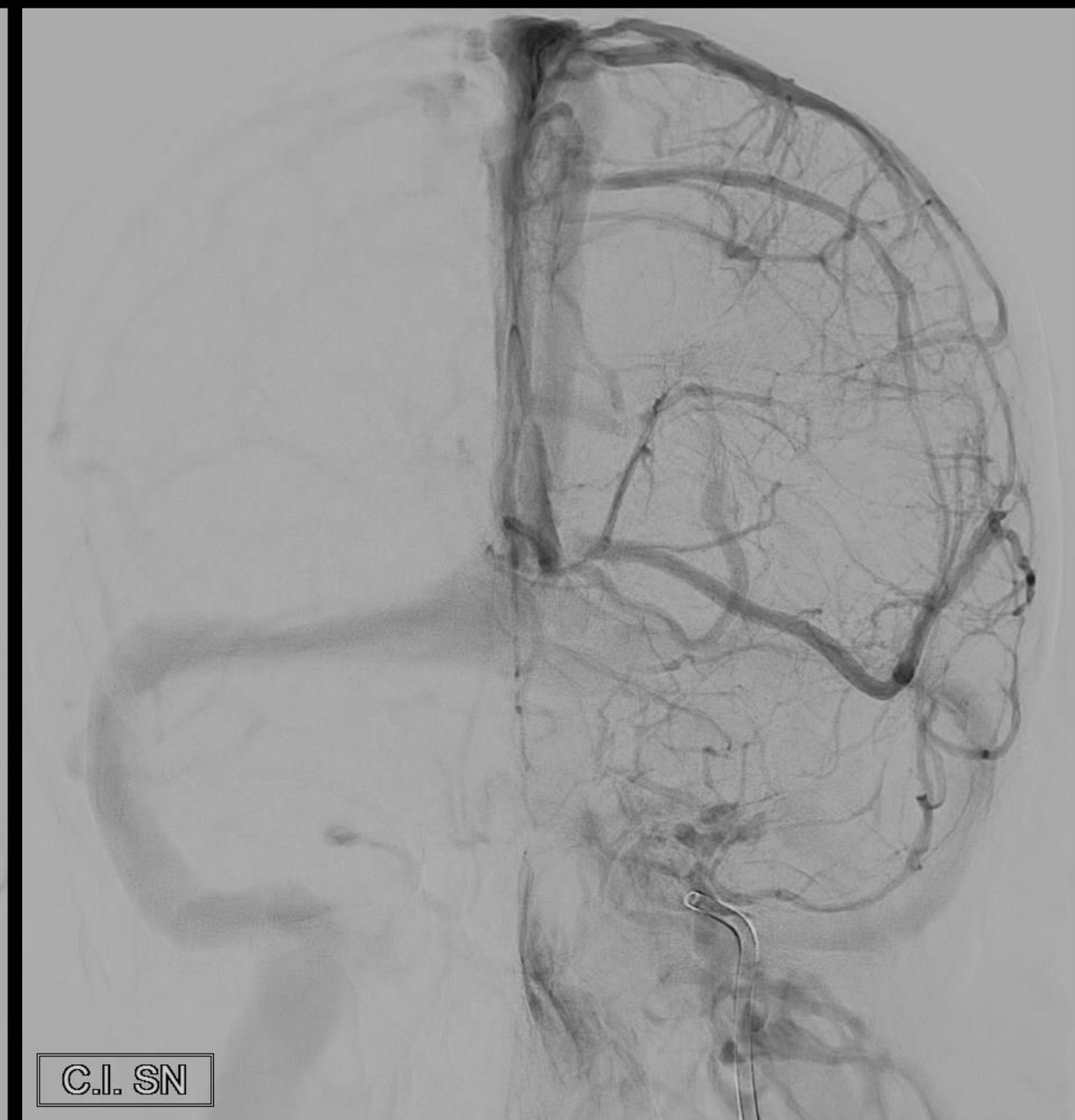
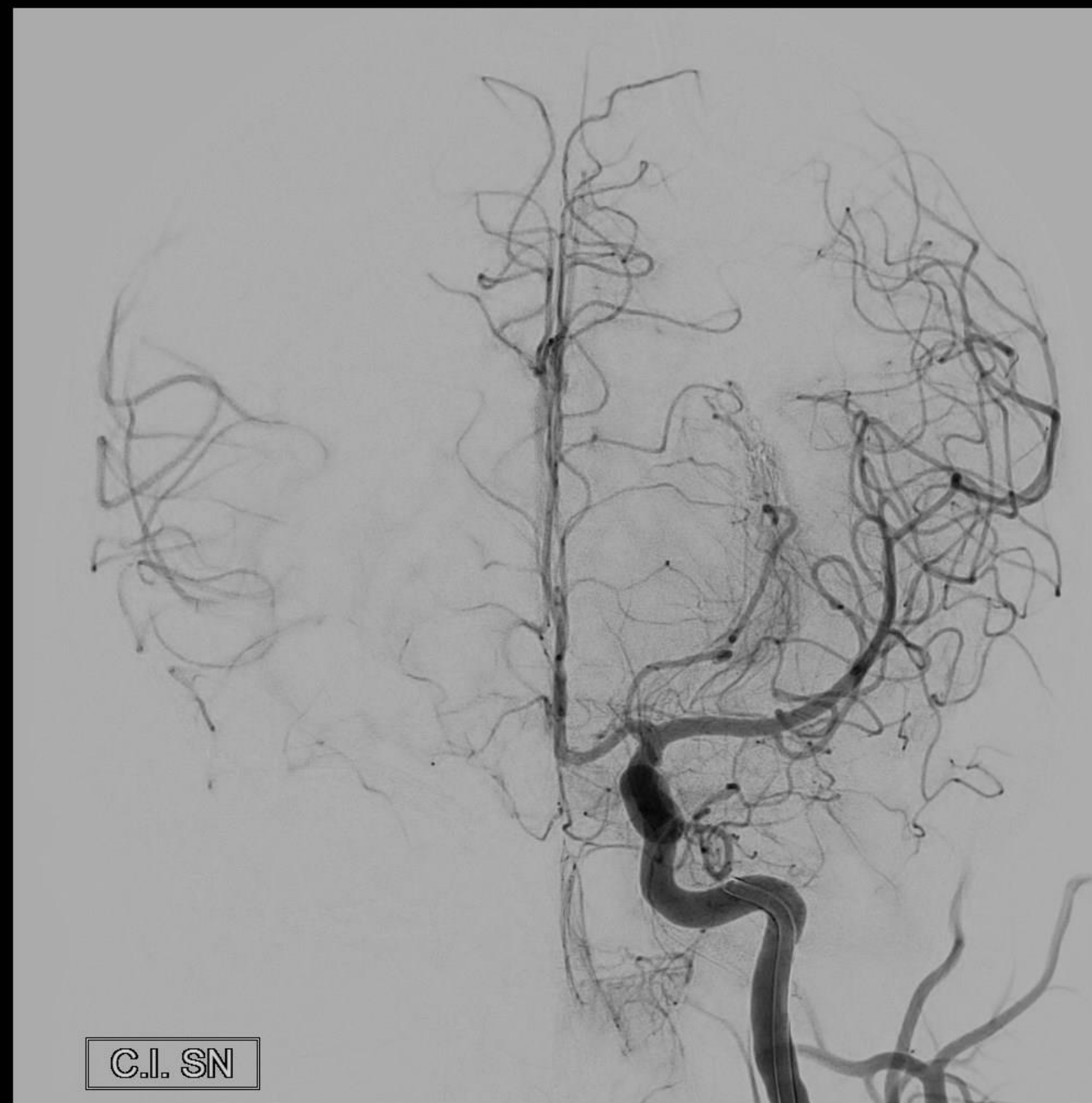
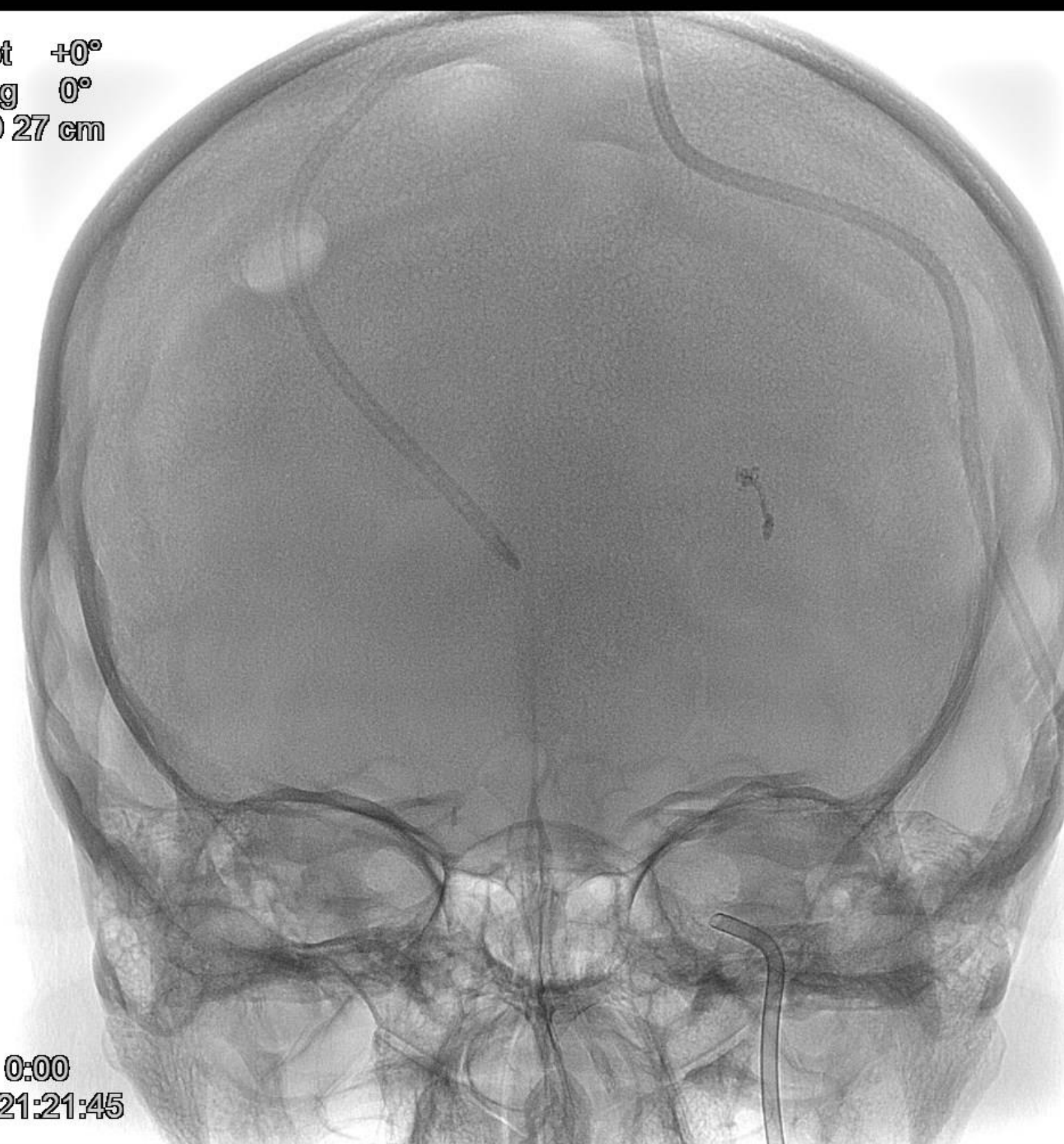
Neuroradiologia interventistica

Malformazione artero-venosa piale



Neuroradiologia interventistica

Malformazione artero-venosa piale



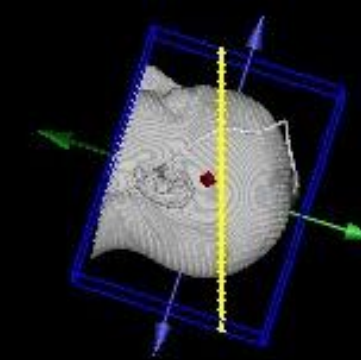
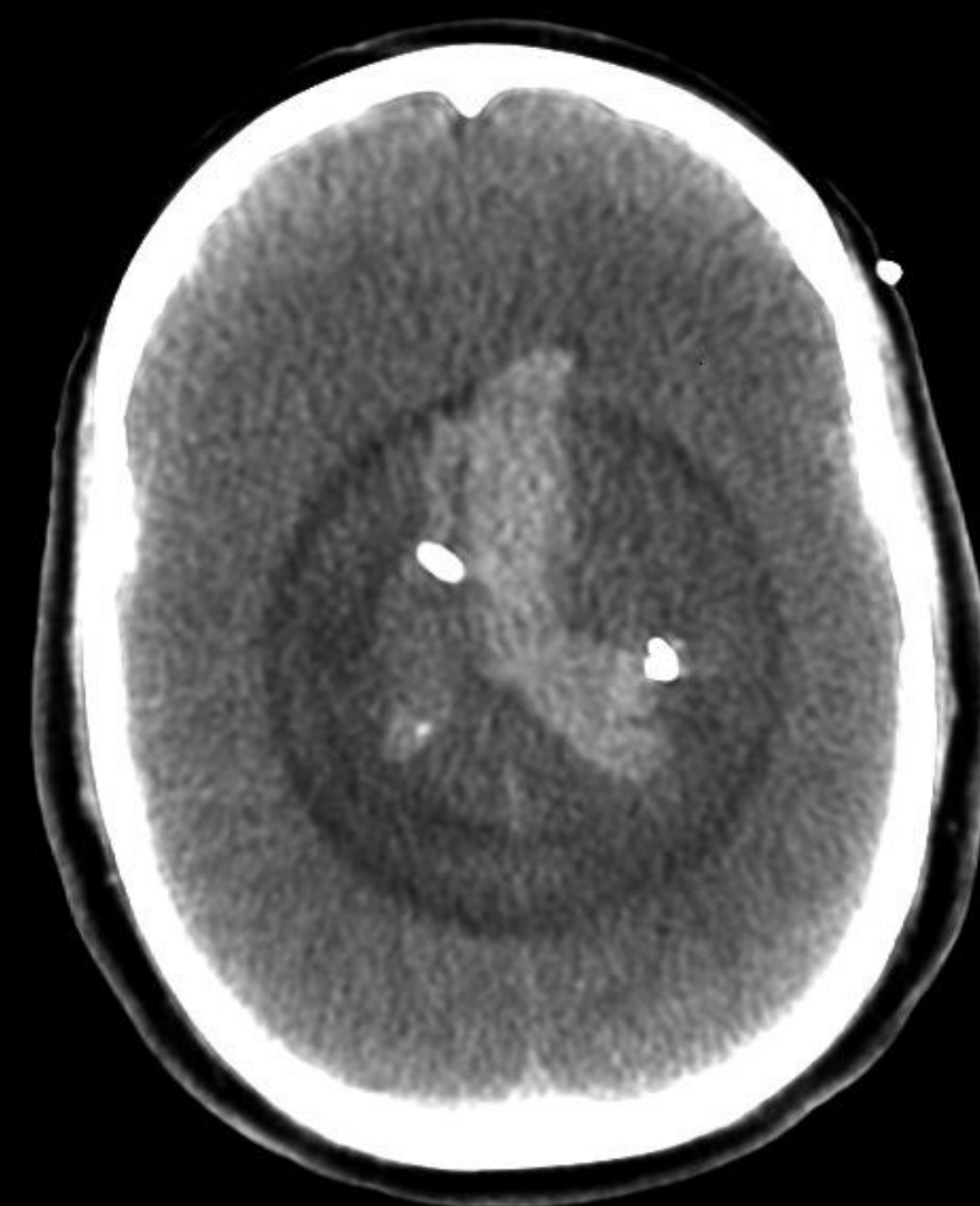
Neuroradiologia interventistica

Malformazione artero-venosa piale



2018/07/02

19°
1°



5036
XperCT
2018/07/02
19:26:01



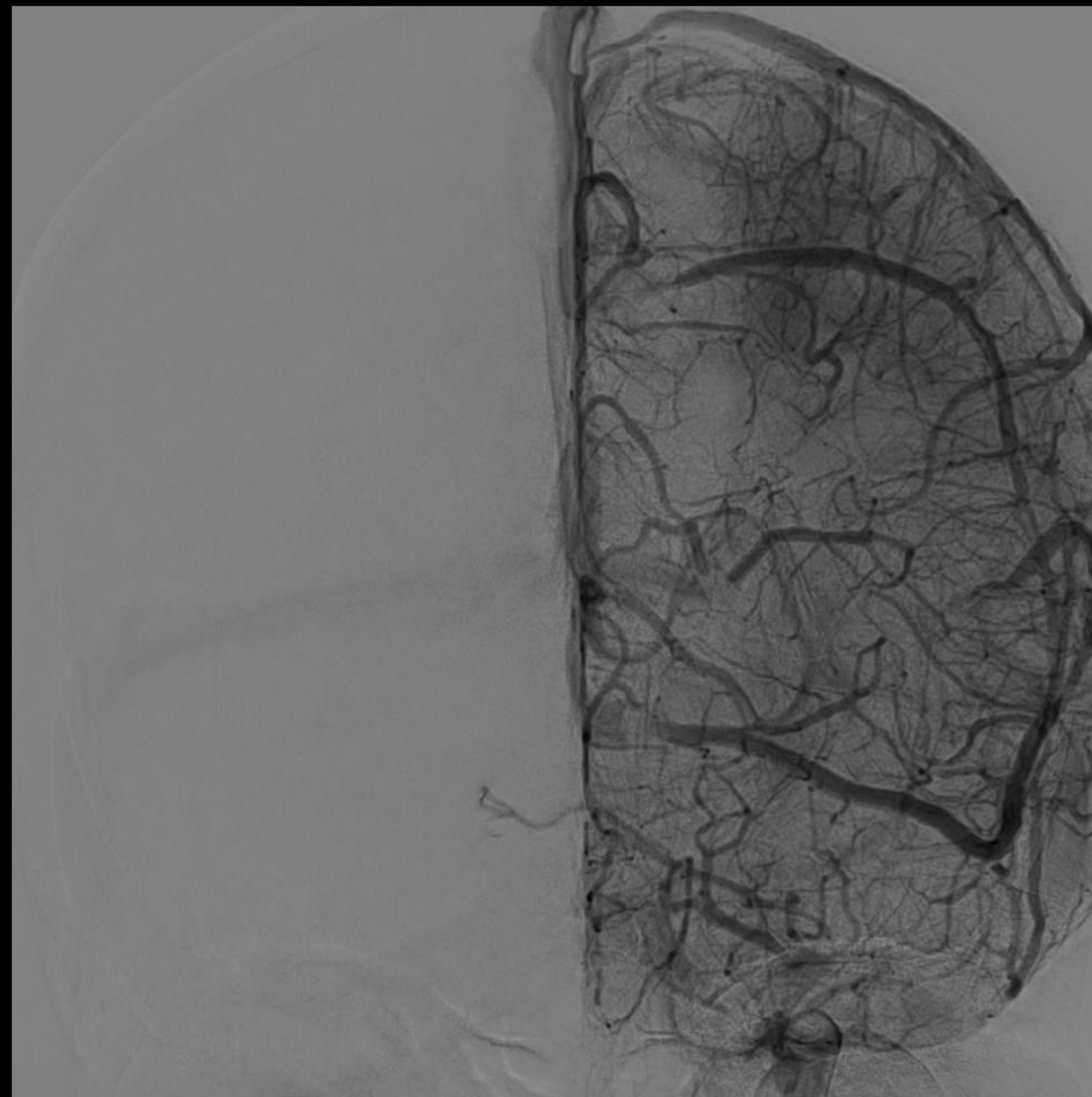
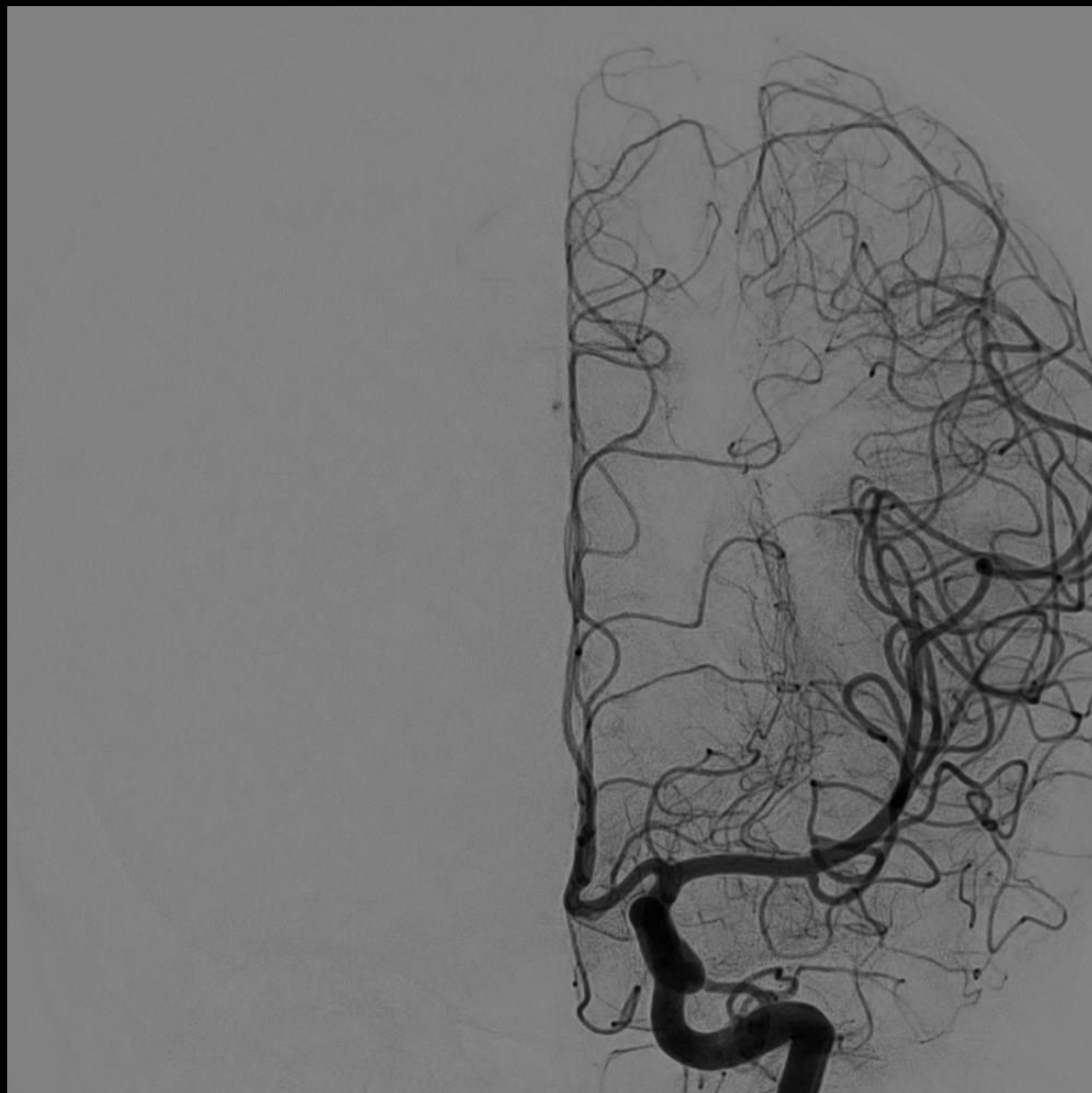
Neuroradiologia interventistica

Malformazione artero-venosa piale



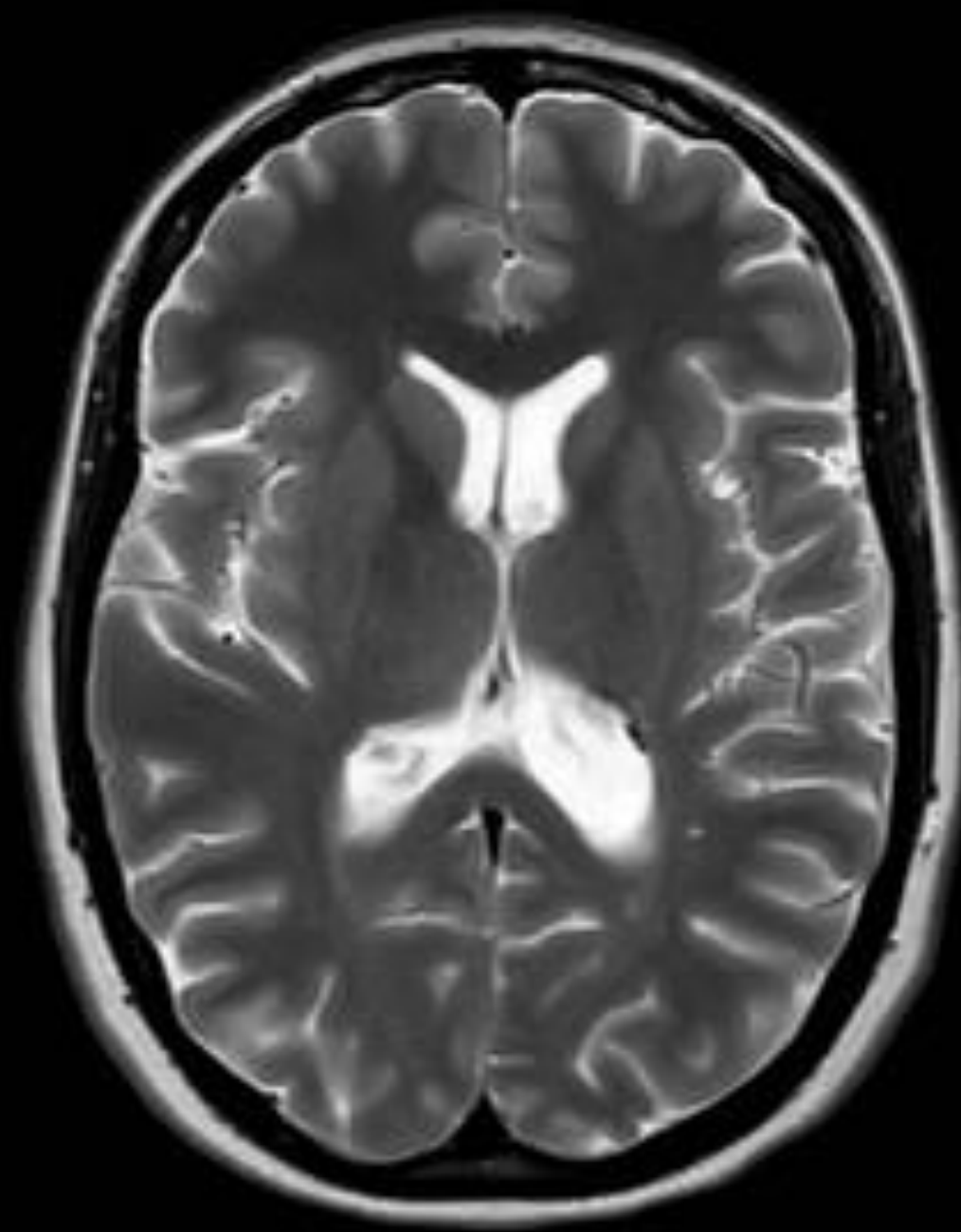
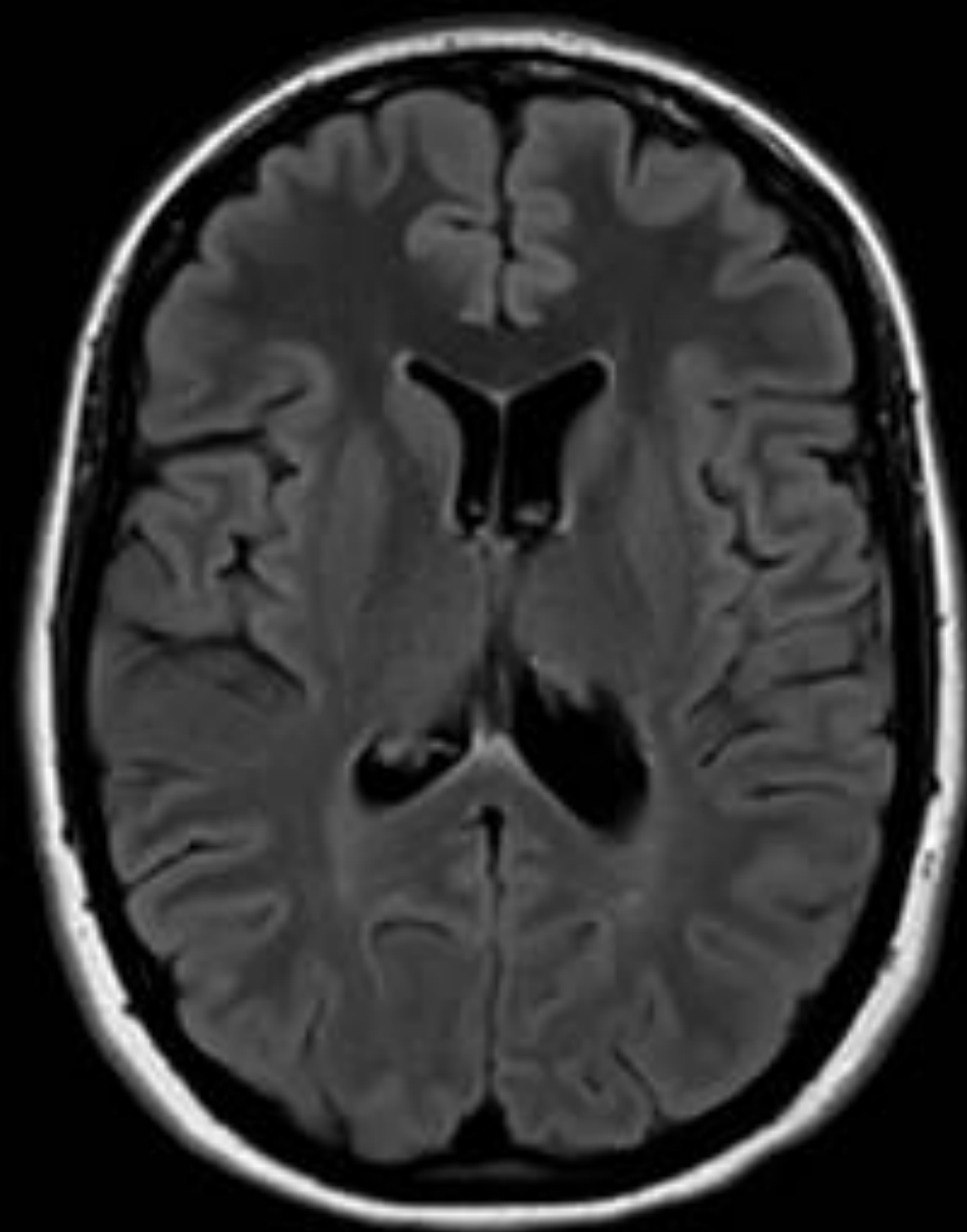
Neuroradiologia interventistica

Malformazione artero-venosa piale



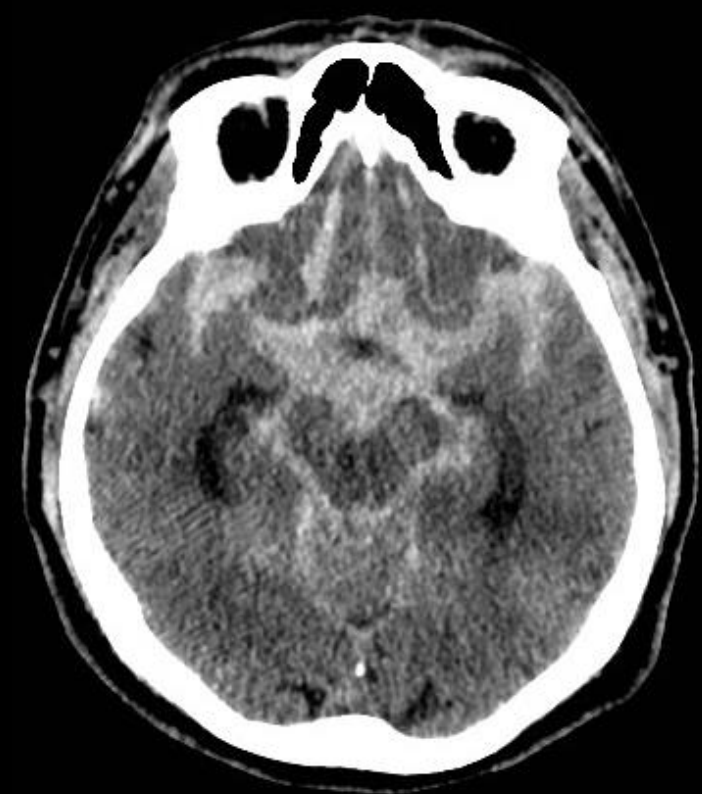
Neuroradiologia interventistica

Malformazione artero-venosa piale



Neuroradiologia interventistica

Emorragie intracraniche



Neuroradiologia interventistica

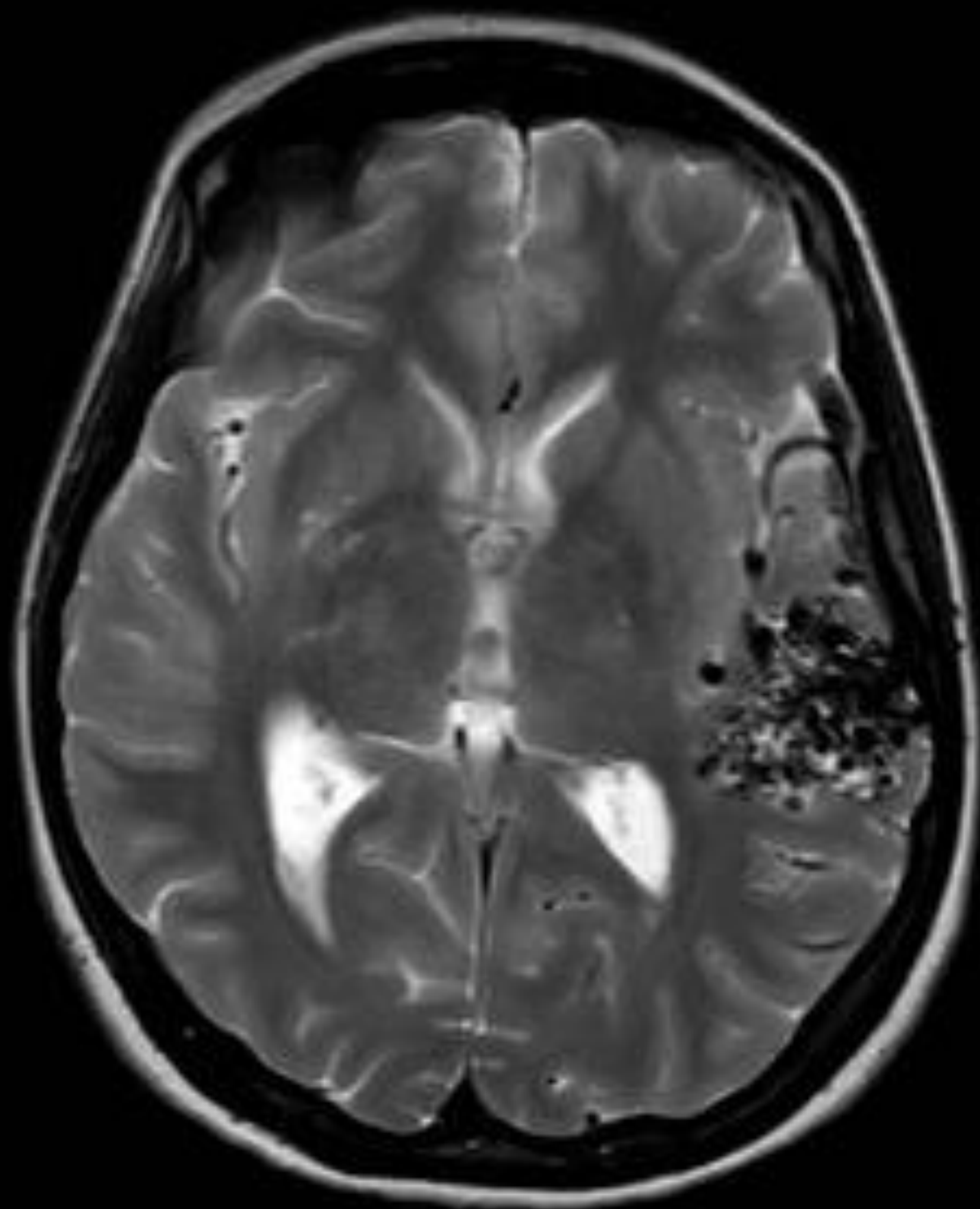
Malformazione artero-venosa piale



F 34 anni
Gravida alla
24ma sett.
Cefalea e
vomito, calo
del visus
GCS 14

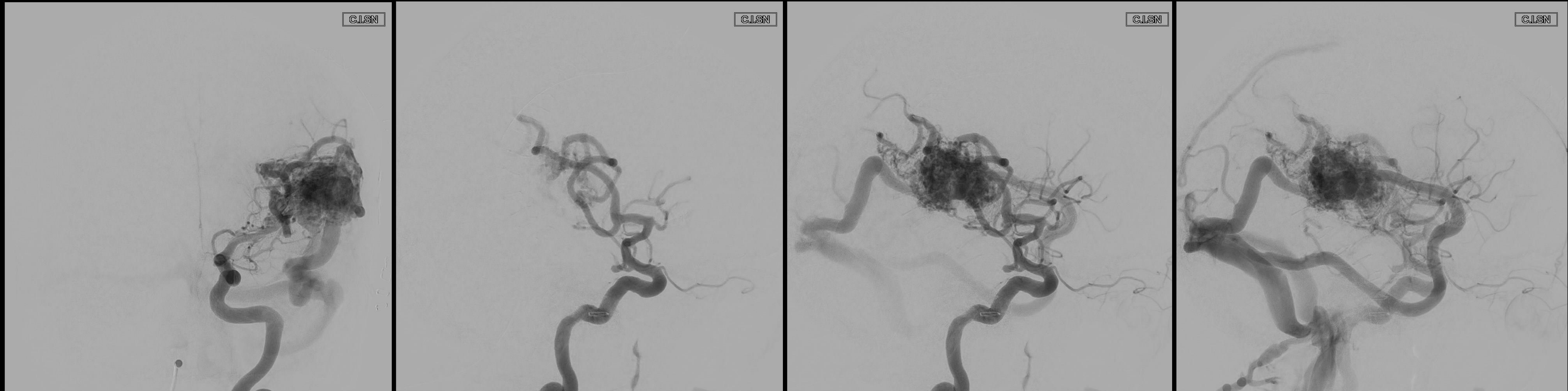
Neuroradiologia interventistica

Malformazione artero-venosa piale



Neuroradiologia interventistica

Malformazione artero-venosa piale



Neuroradiologia interventistica

Malformazione artero-venosa piale



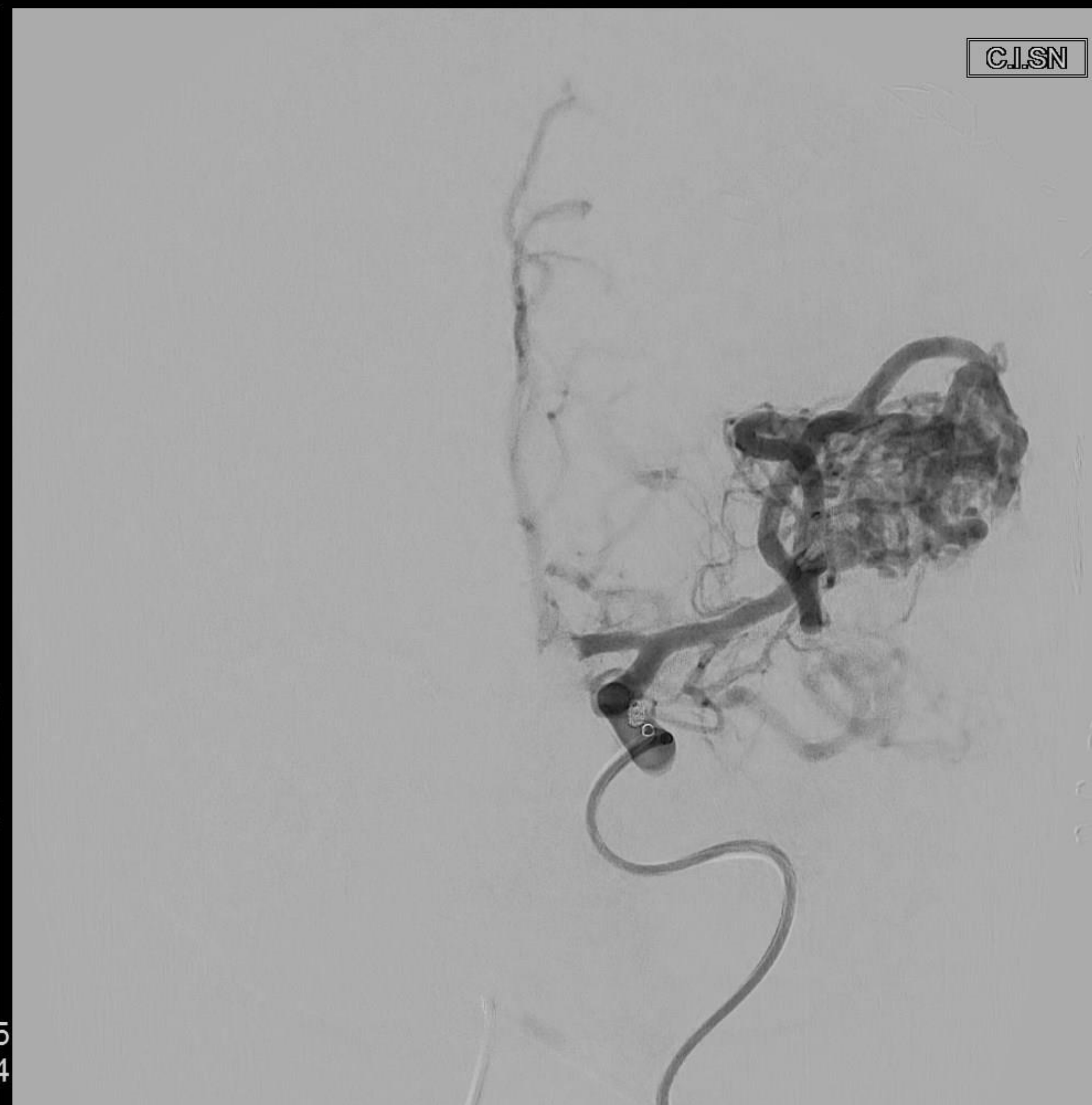
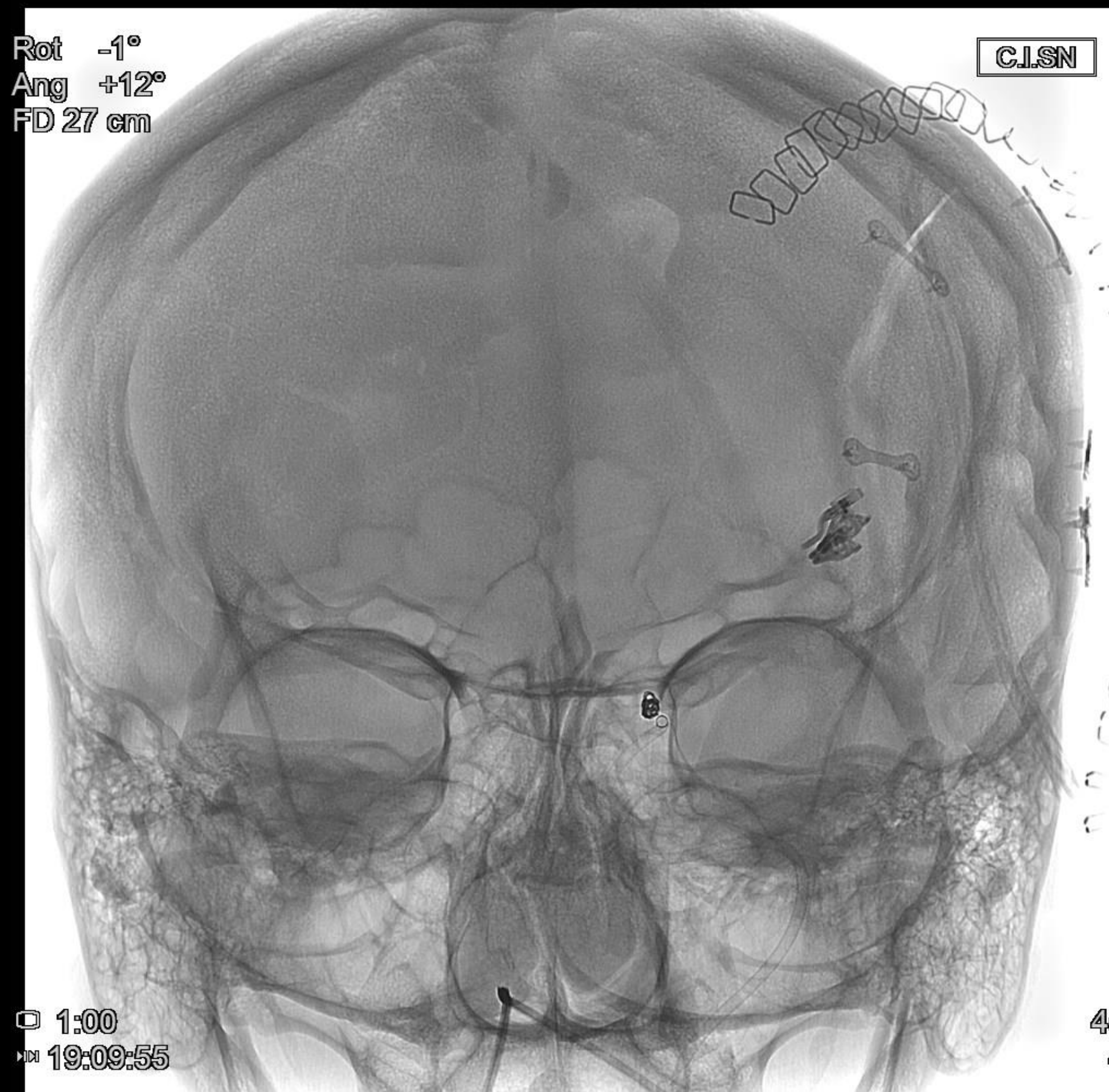
Neuroradiologia interventistica

Malformazione artero-venosa piale



Neuroradiologia interventistica

Malformazione artero-venosa piale



Neuroradiologia interventistica

Malformazione artero-venosa piale



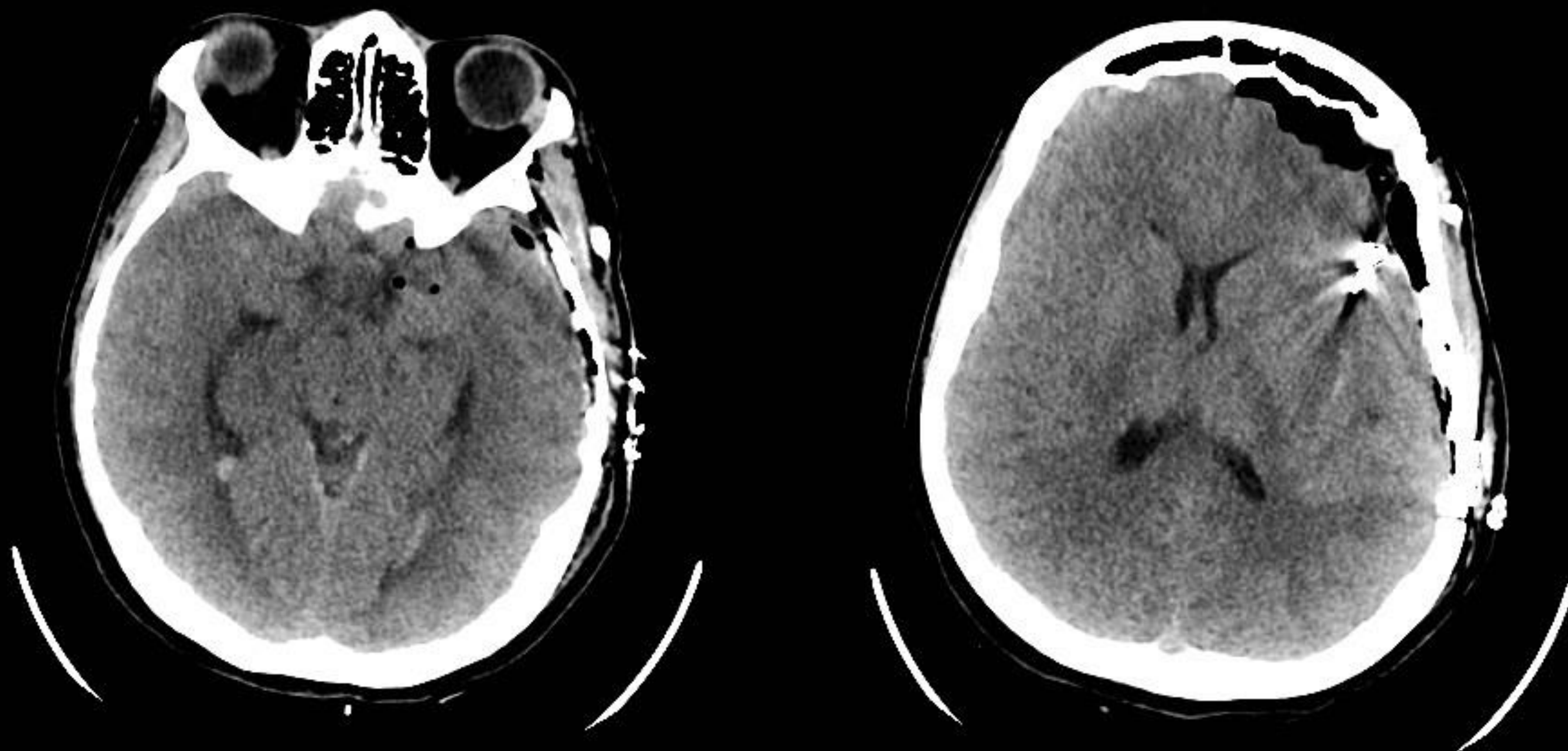
Neuroradiologia interventistica

Malformazione artero-venosa piale



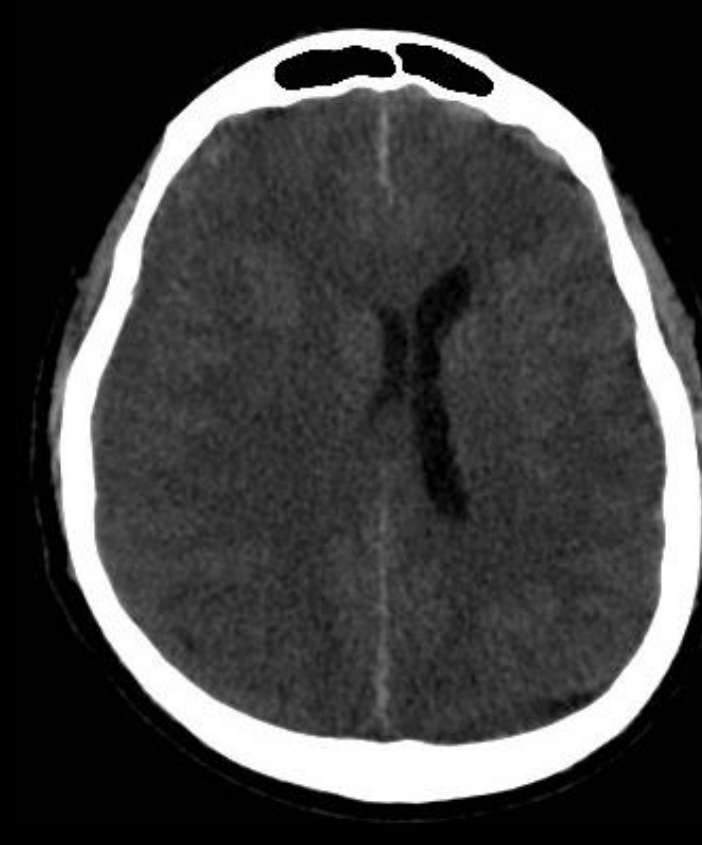
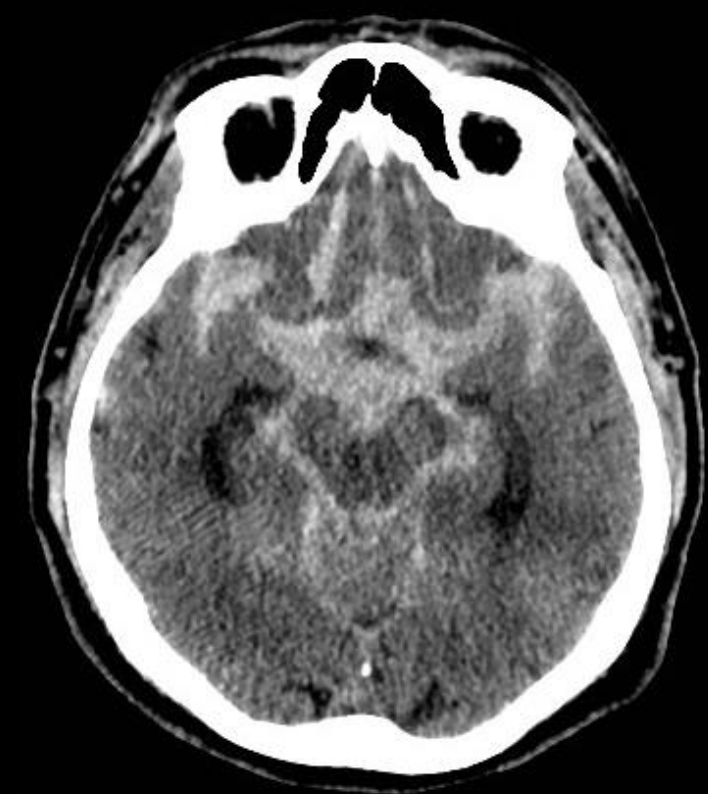
Neuroradiologia interventistica

Malformazione artero-venosa piale



Neuroradiologia interventistica

Emorragie intracraniche



Neuroradiologia interventistica

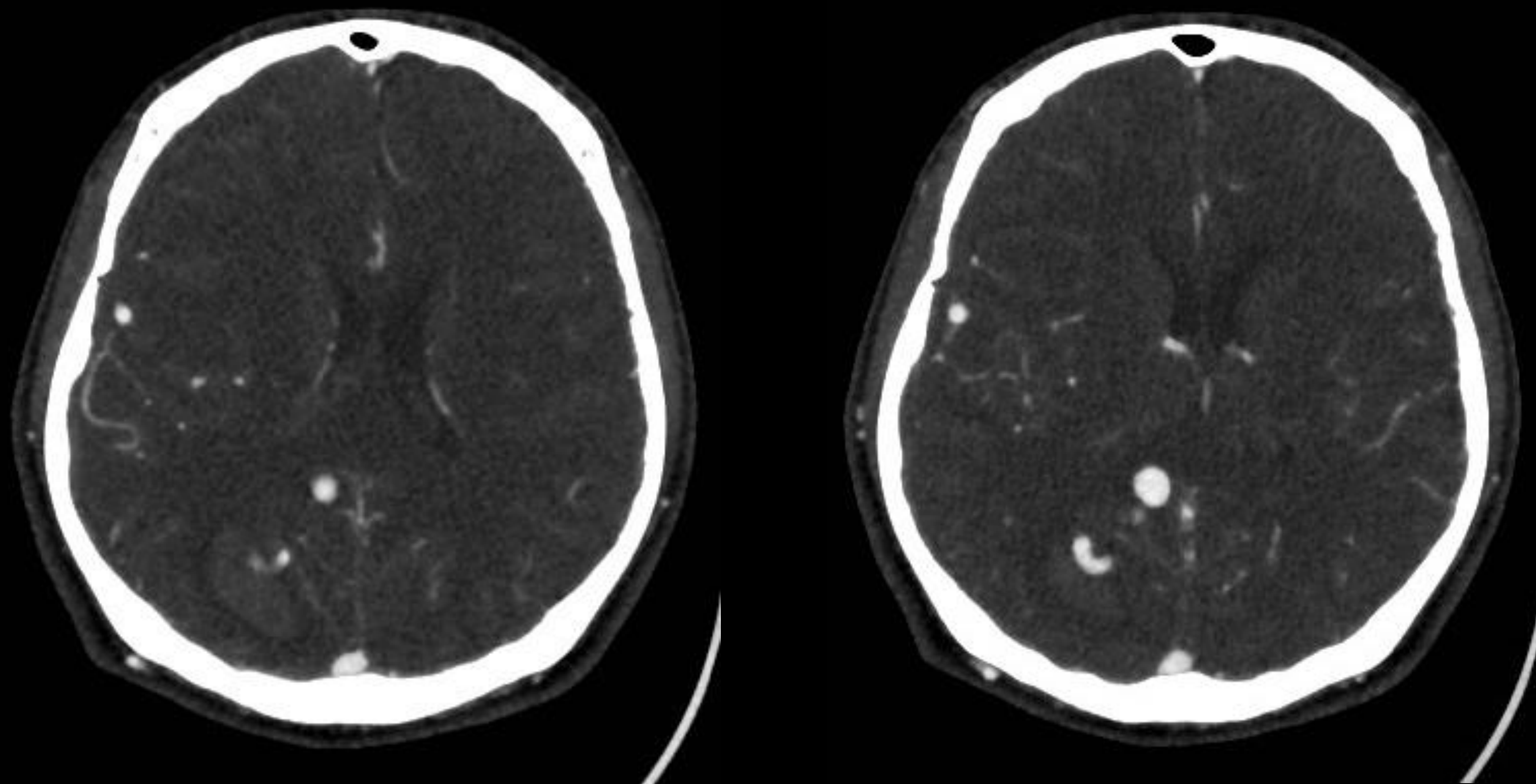
Malformazione artero-venosa durale



M 61 anni
Cefalea da
10 gg,
riduzione
campo
visivo a
sinistra
GCS 15

Neuroradiologia interventistica

Malformazione artero-venosa durale

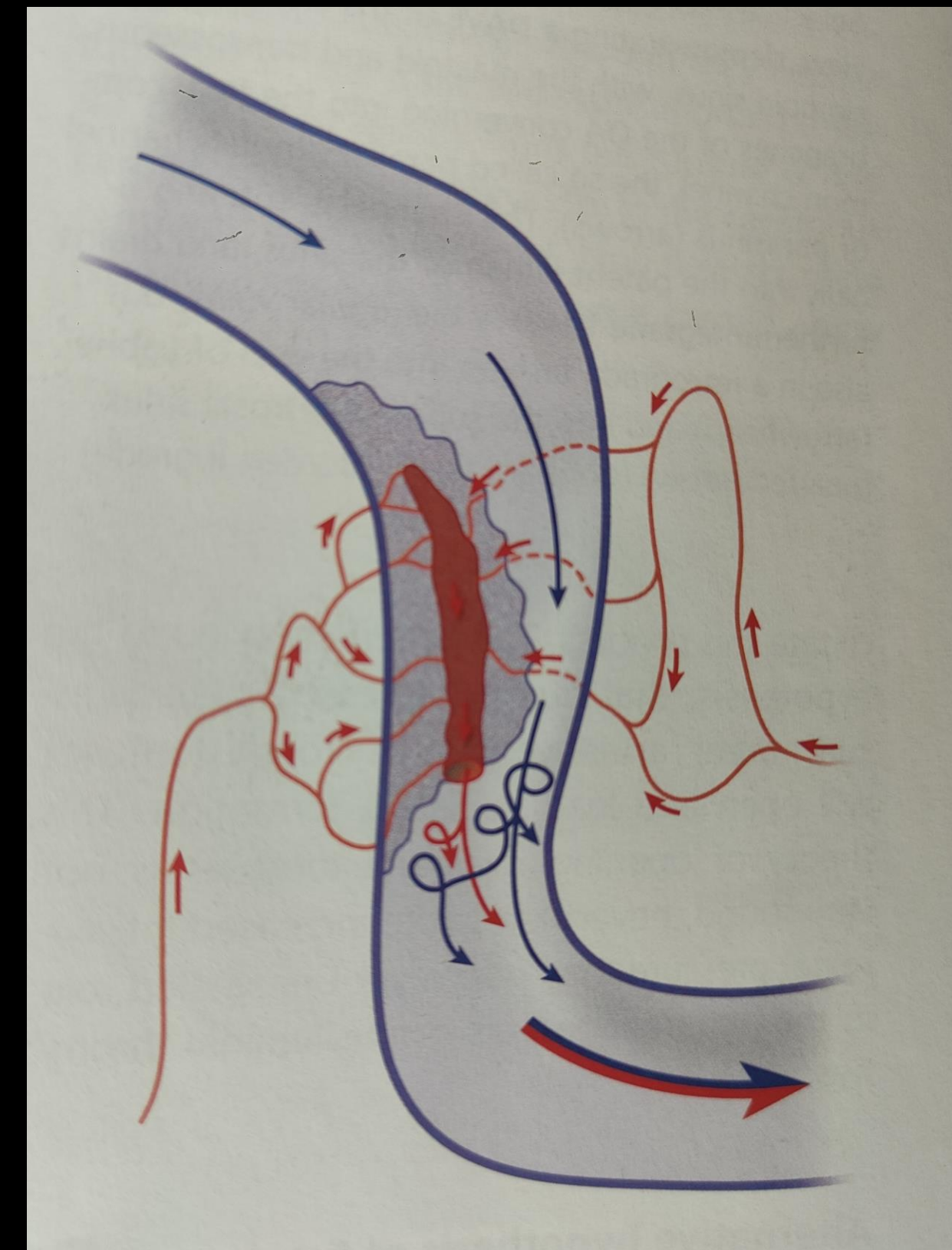


Neuroradiologia interventistica

Malformazione artero-venosa durale

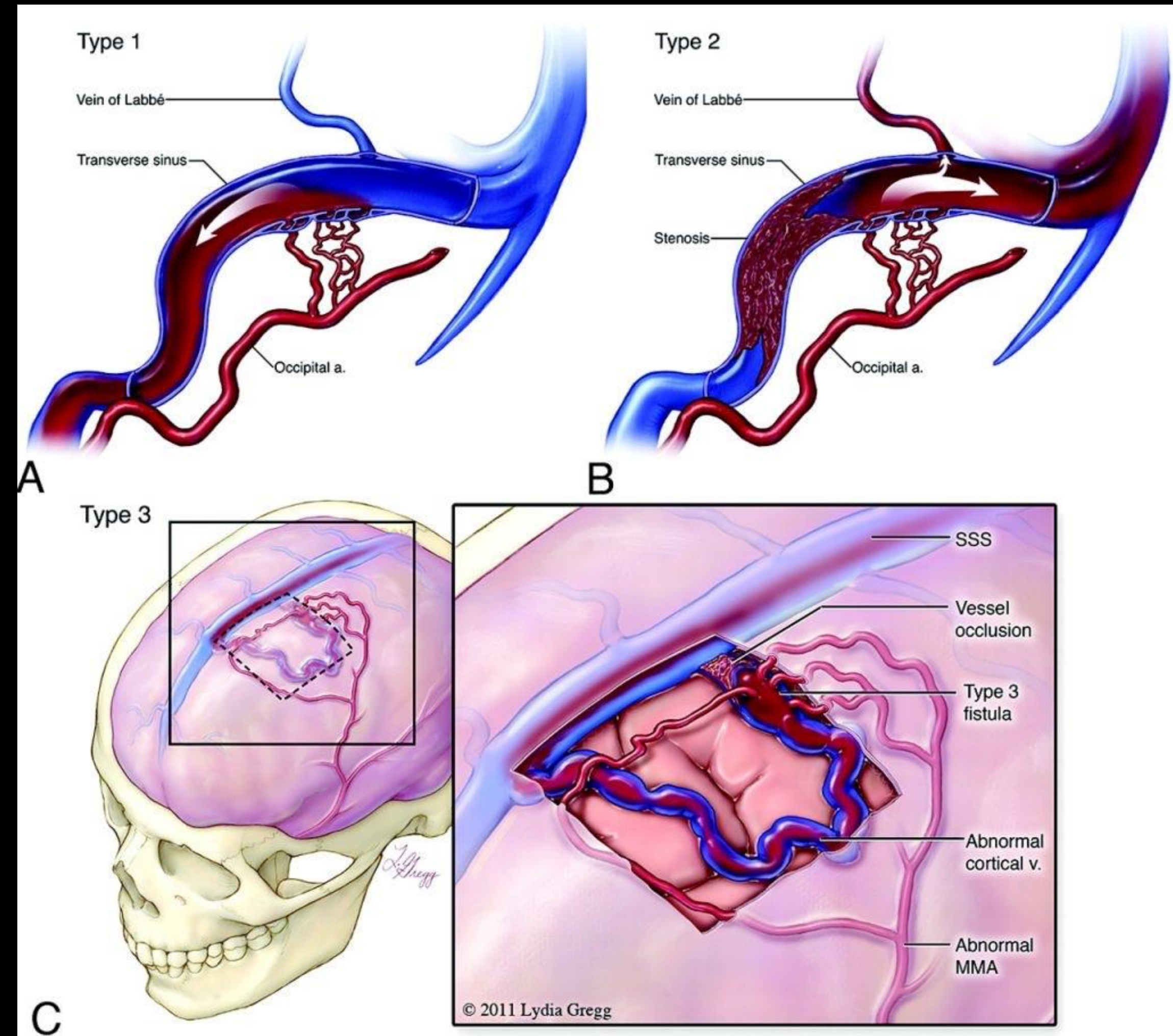
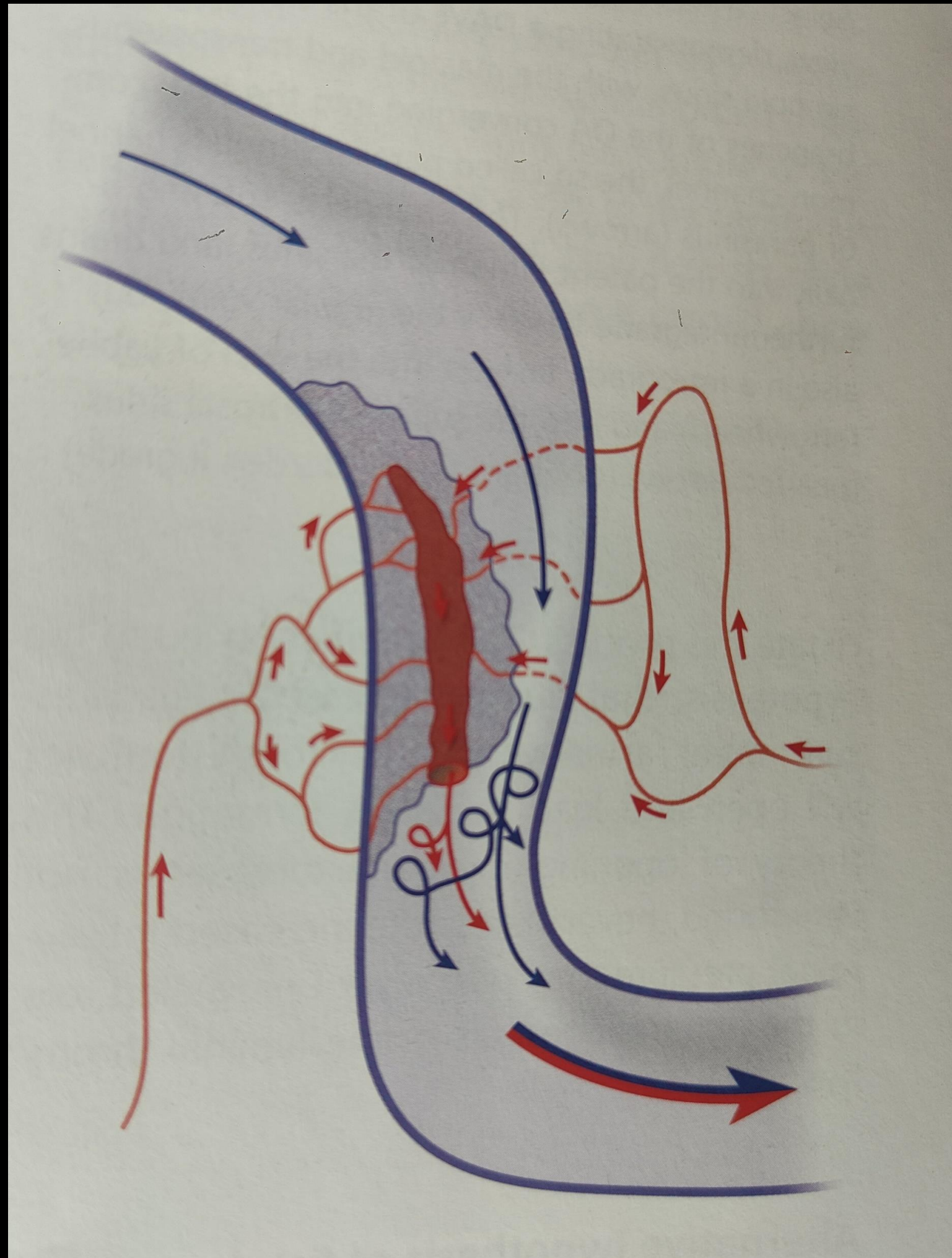
MALFORMAZIONE ARTERO-VENOSA DURALE O FISTOLA DURALE (10-15% delle malformazioni neurovascolari)

- ❑ Anomala comunicazione tra arterie e vene cerebrali, senza interposizione del normale letto capillare
- ❑ Shunt artero-venoso di tipo fistoloso senza nidus
- ❑ **ARTERIE AFFERENTI (FEEDER)** alla malformazione prevalentemente **DURALI** (arterie meninge, apporti tentoriali)
- ❑ I feeder arteriosi convergono nel **PUNTO DI FISTOLA (SU SENO DURALE) O NEL PIEDE DI VENA (SU VENA CORTICALE)**
- ❑ **VALUTARE:** sede dello shunt (seno durale o vena corticale), rapidità dello shunt, flusso ortograde-retrogrado, impegno di vene che “servono al cervello”, segni di congestione venosa, strade per arrivare allo shunt artero-venoso (via venosa, via arteriosa, accesso transosseo).
- ❑ **OBIETTIVO NEL SETTING ACUTO (e NON!): CURARE LA FISTOLA OCCLUDENDO IL PUNTO DI FISTOLA O IL PIEDE DI VENA!**



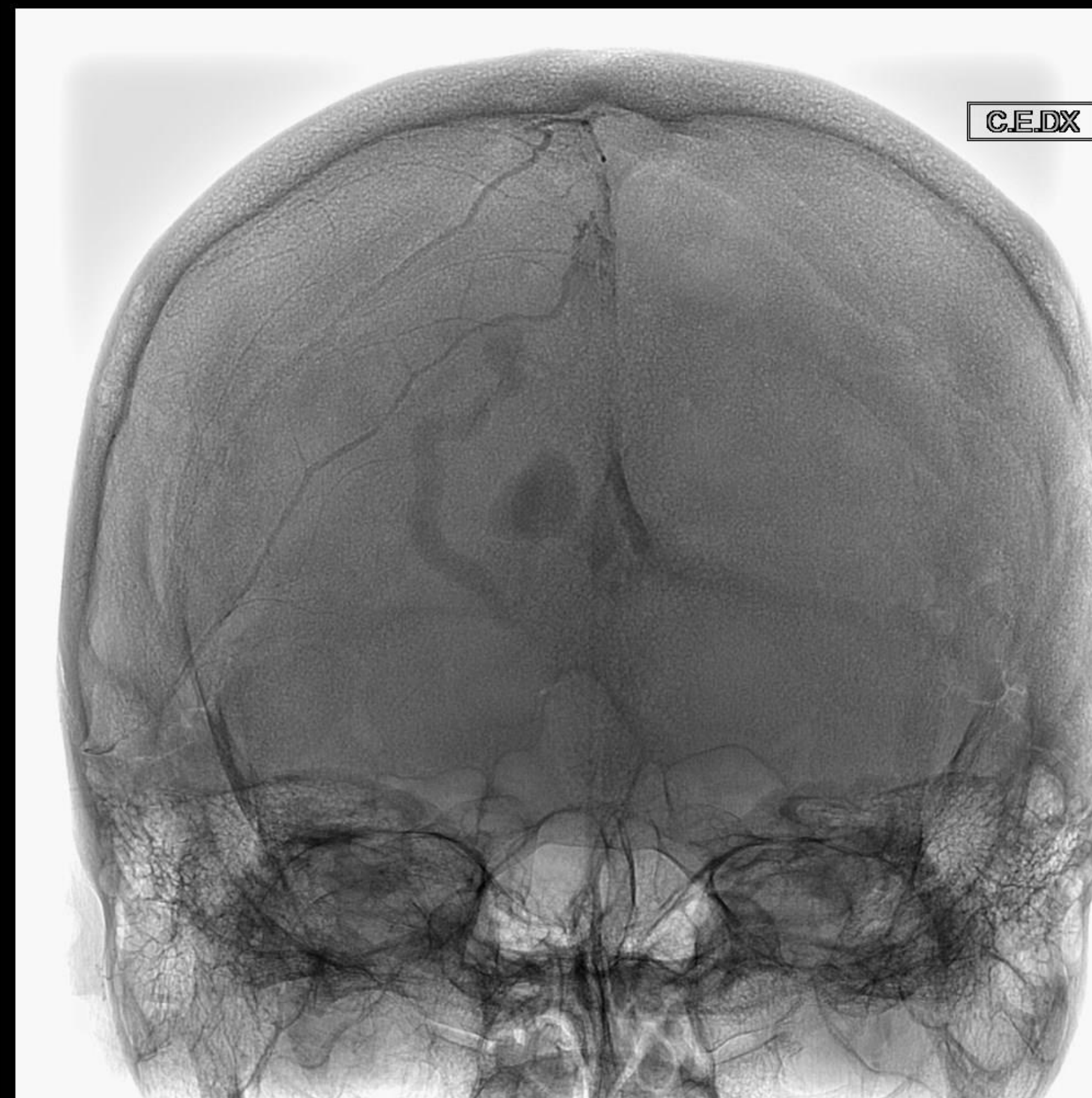
Neuroradiologia interventistica

Malformazione artero-venosa durale



Neuroradiologia interventistica

Malformazione artero-venosa dura



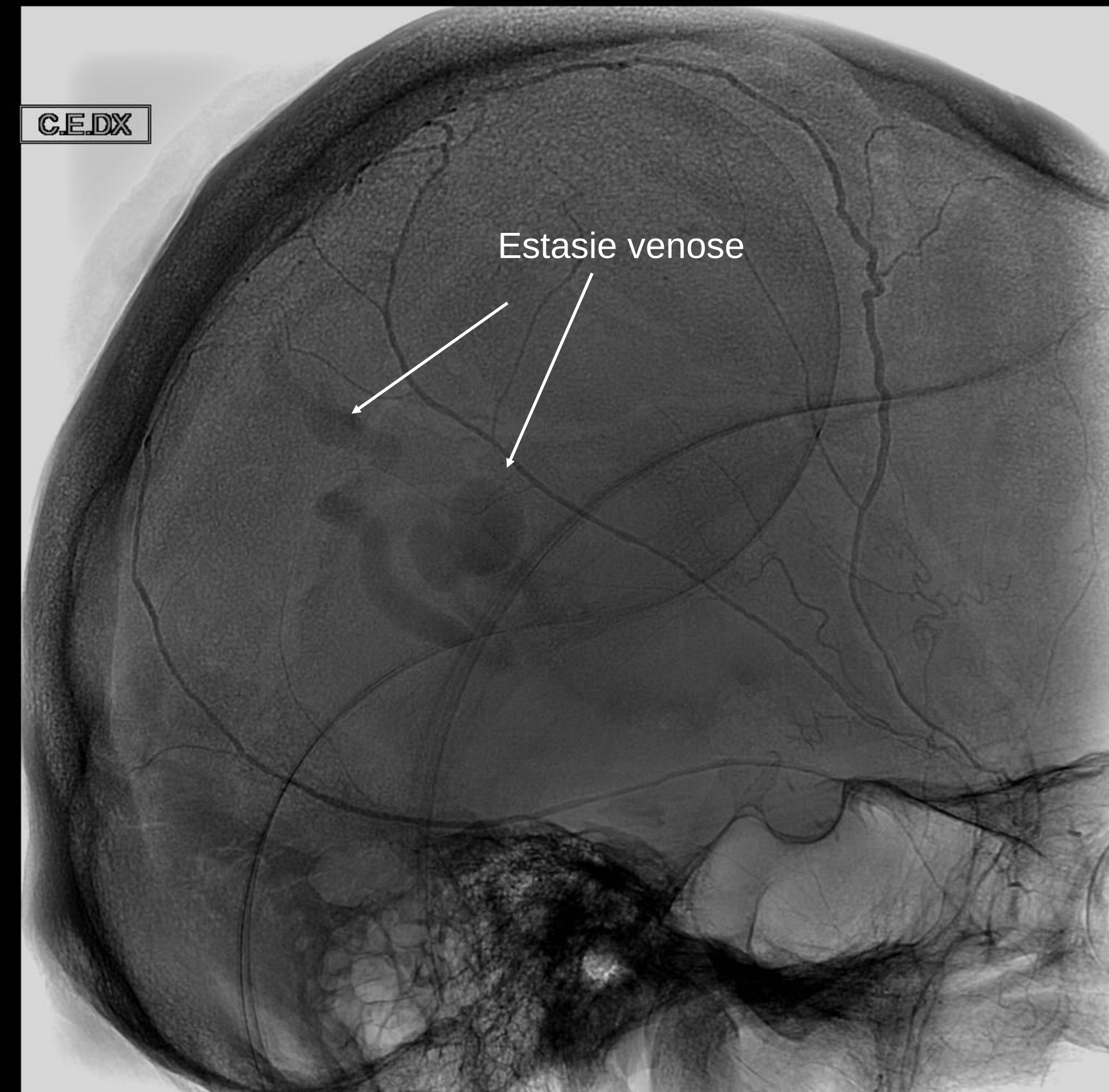
Neuroradiologia interventistica

Malformazione artero-venosa durale



Neuroradiologia interventistica

Malformazione artero-venosa durale



Neuroradiologia interventistica

Malformazione artero-venosa durale

Ang.: 0°

Lato testa

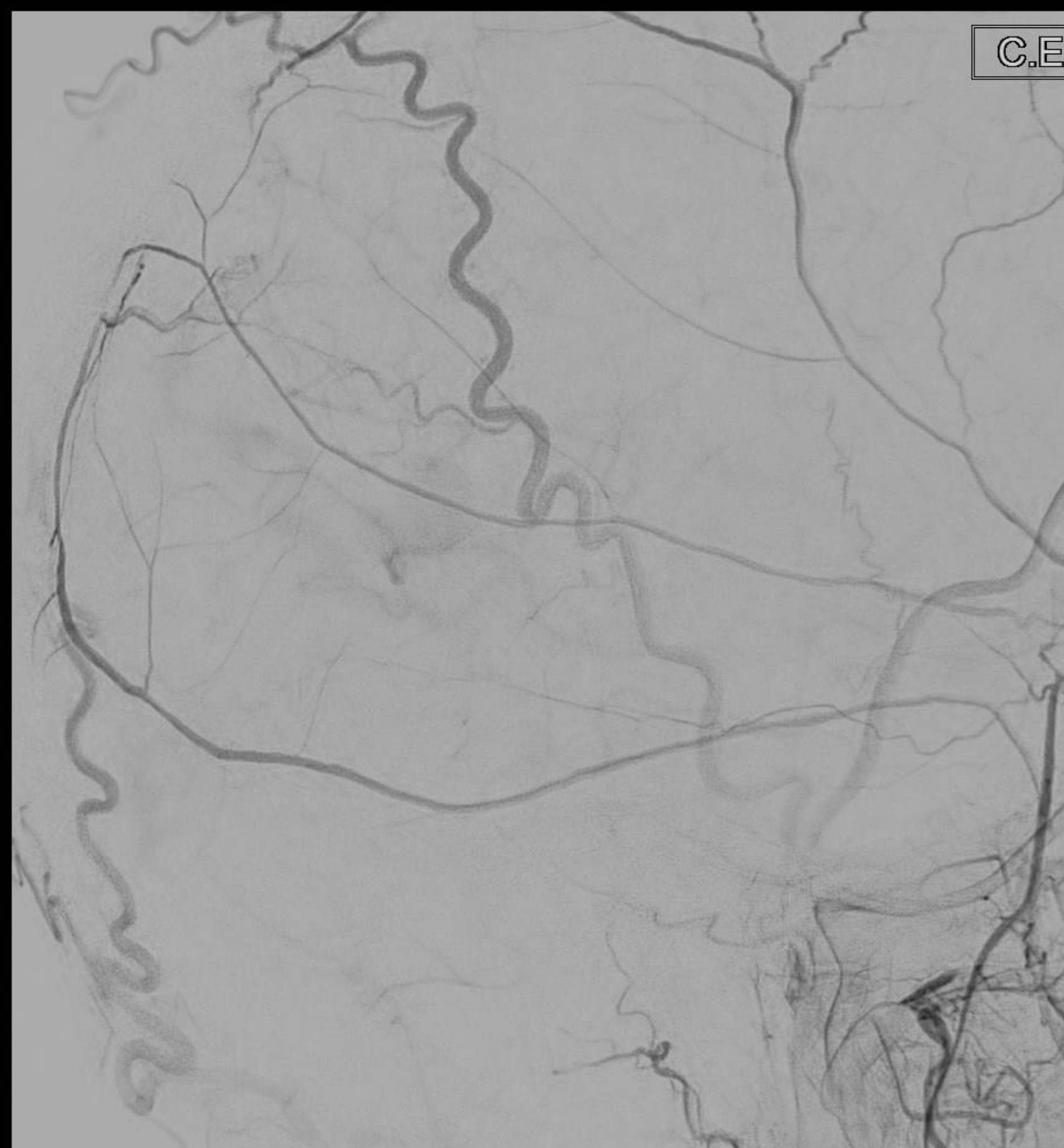
PIEDE DI VENA o TESTA DI VENA

N. seriogr.: 5021
Tipo volume: XperCT
Data seriogr.: 2022/04/19
Numero seriogr.: 15:49:18
Dimensione cubo: 146.29 mm



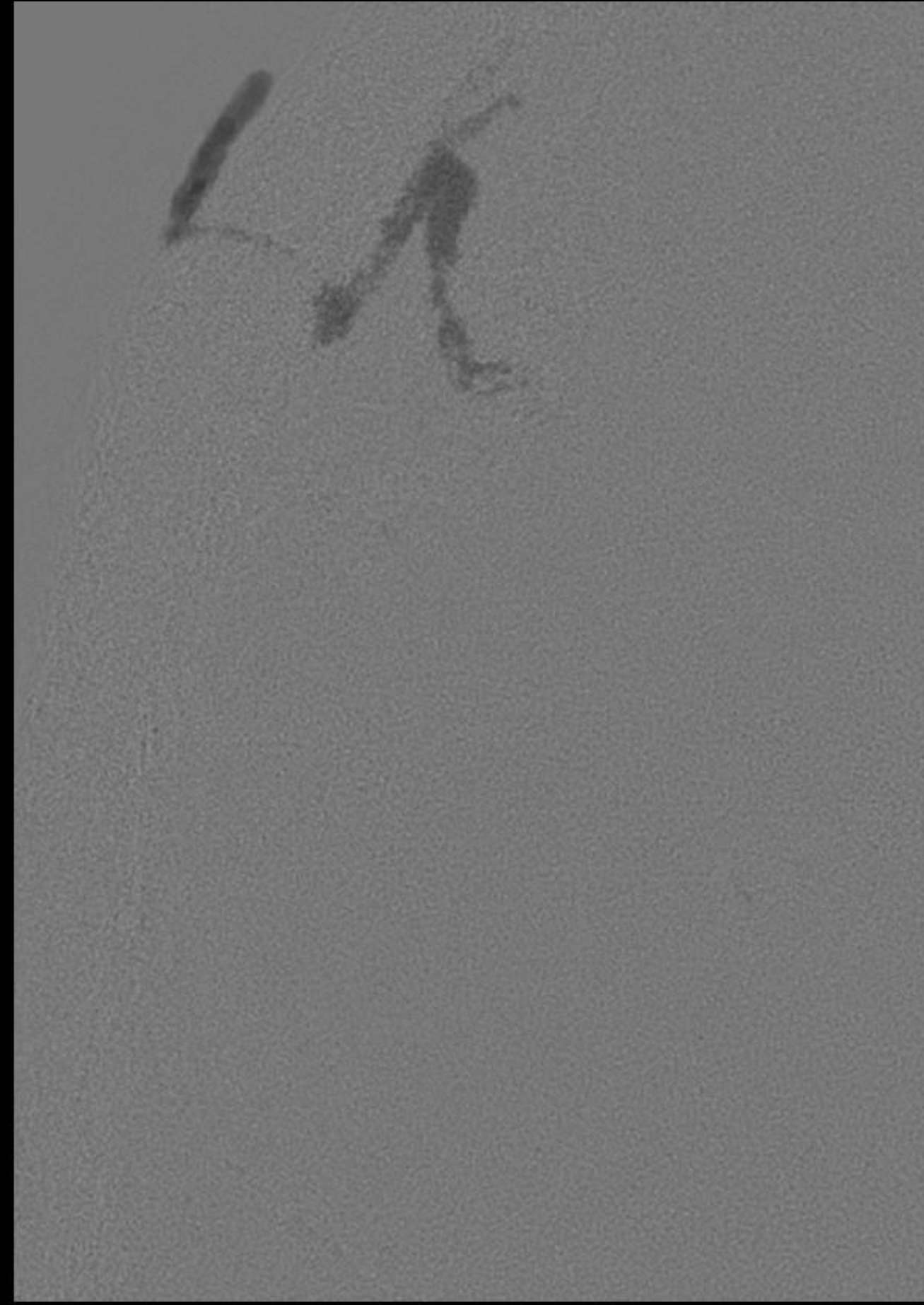
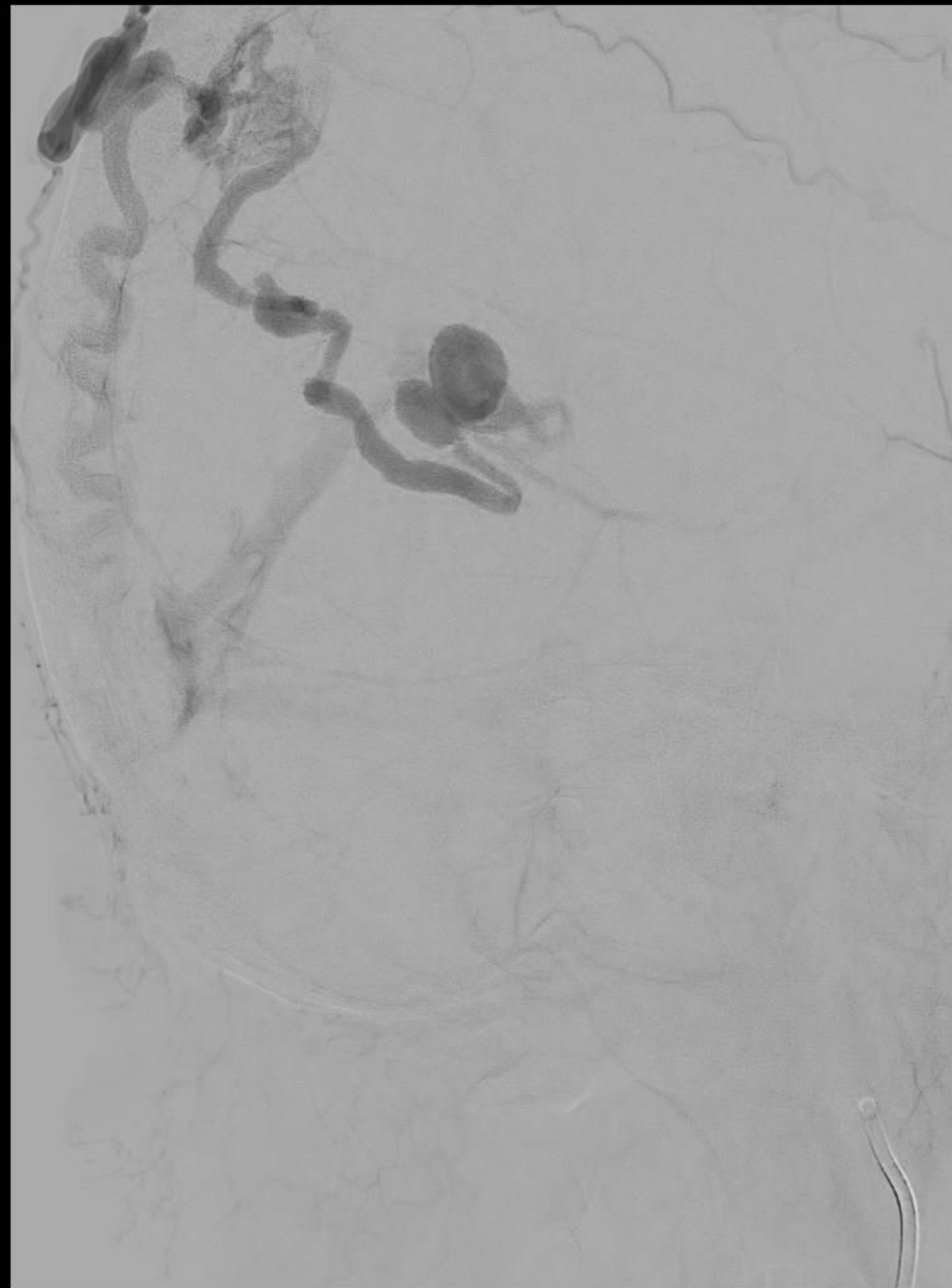
Neuroradiologia interventistica

Malformazione artero-venosa dura



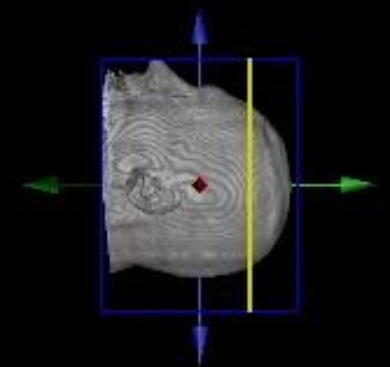
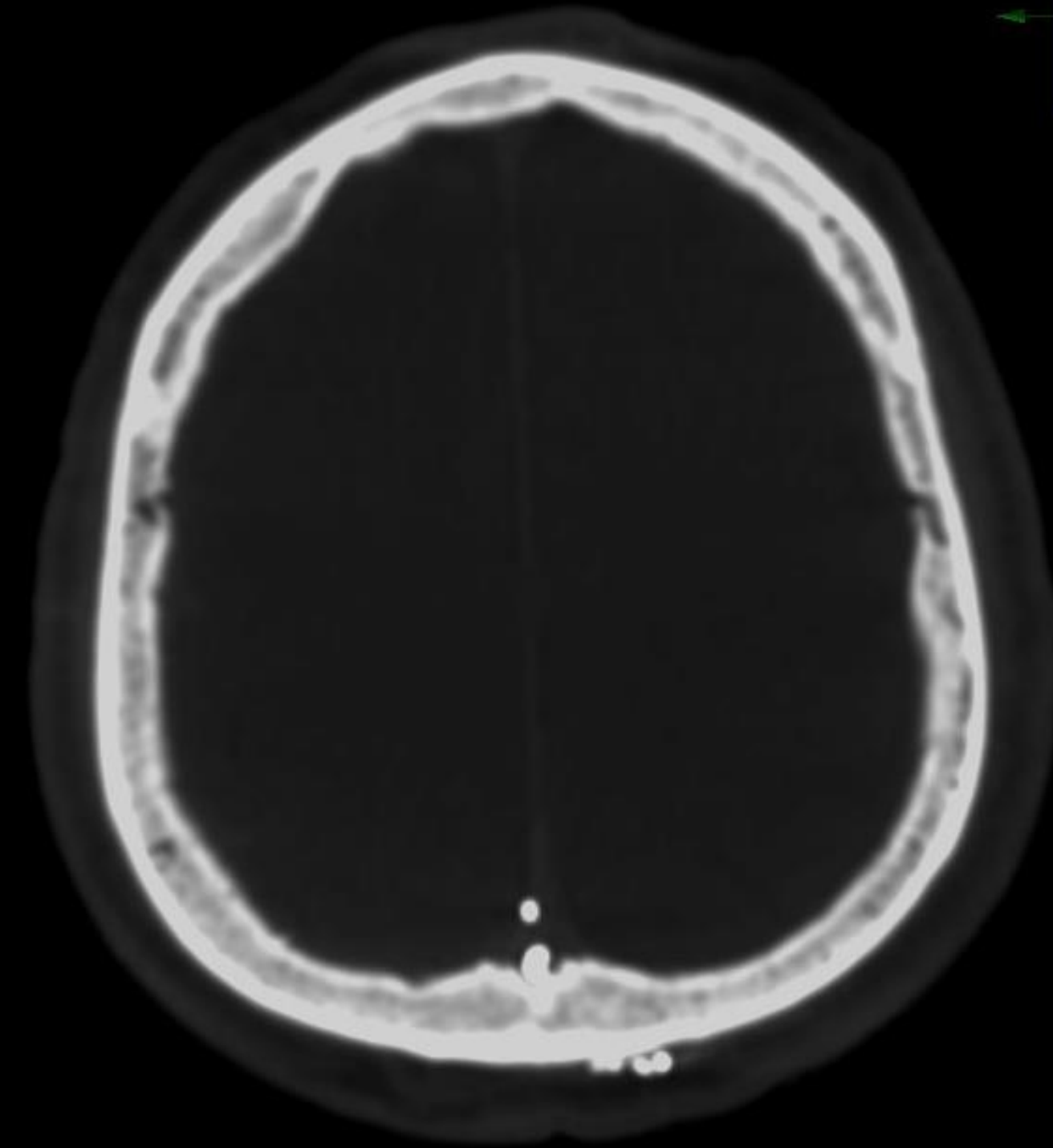
Neuroradiologia interventistica

Malformazione artero-venosa durale



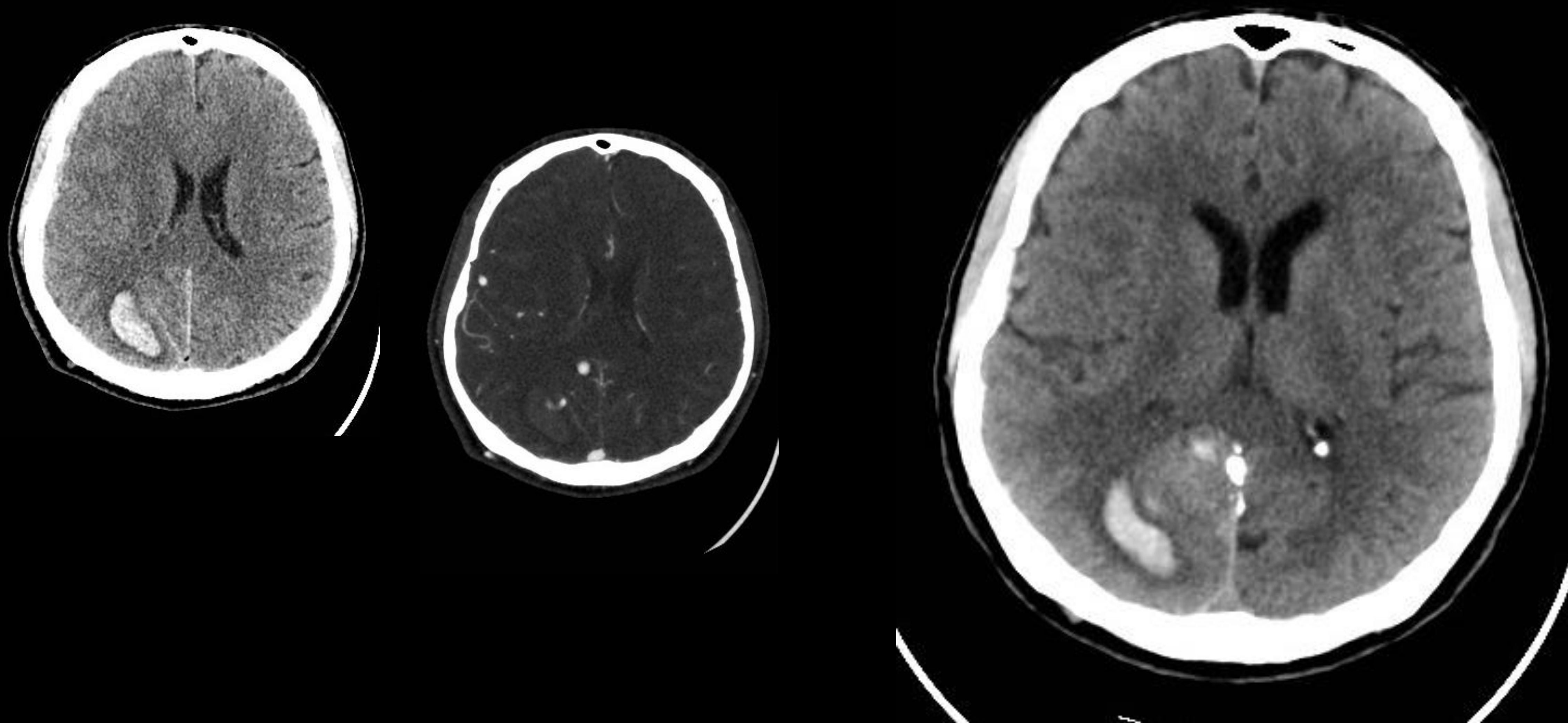
2022/04/20

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XperCT
2022/04/20
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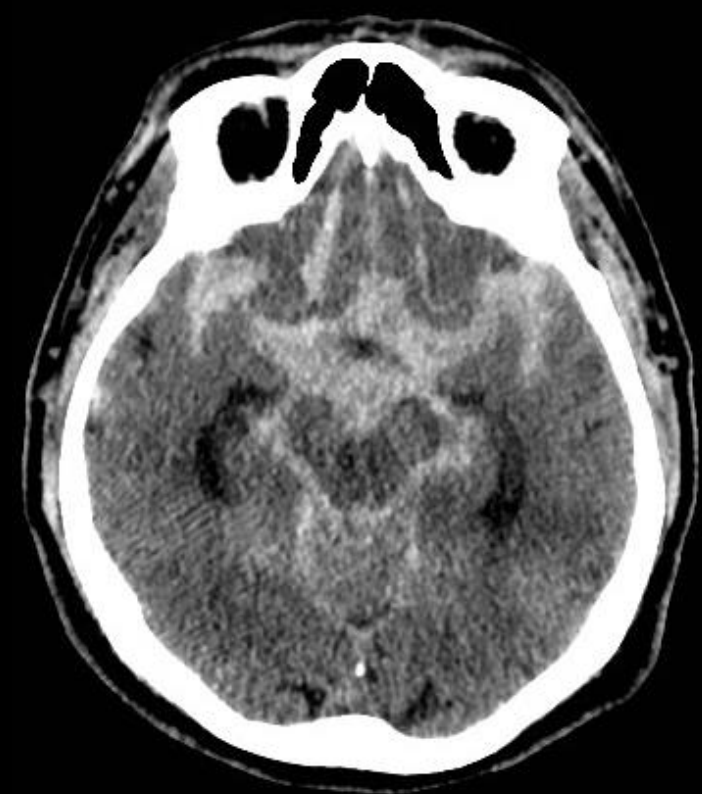
Neuroradiologia interventistica

Malformazione artero-venosa durale



Neuroradiologia interventistica

Emorragie intracraniche



Neuroradiologia interventistica

Malformazione artero-venosa durale



M 75 anni
Cefalea
improvvisa
in iperteso
GCS 15

Neuroradiologia interventistica

Malformazione artero-venosa durale



Neuroradiologia interventistica

Malformazione artero-venosa durale



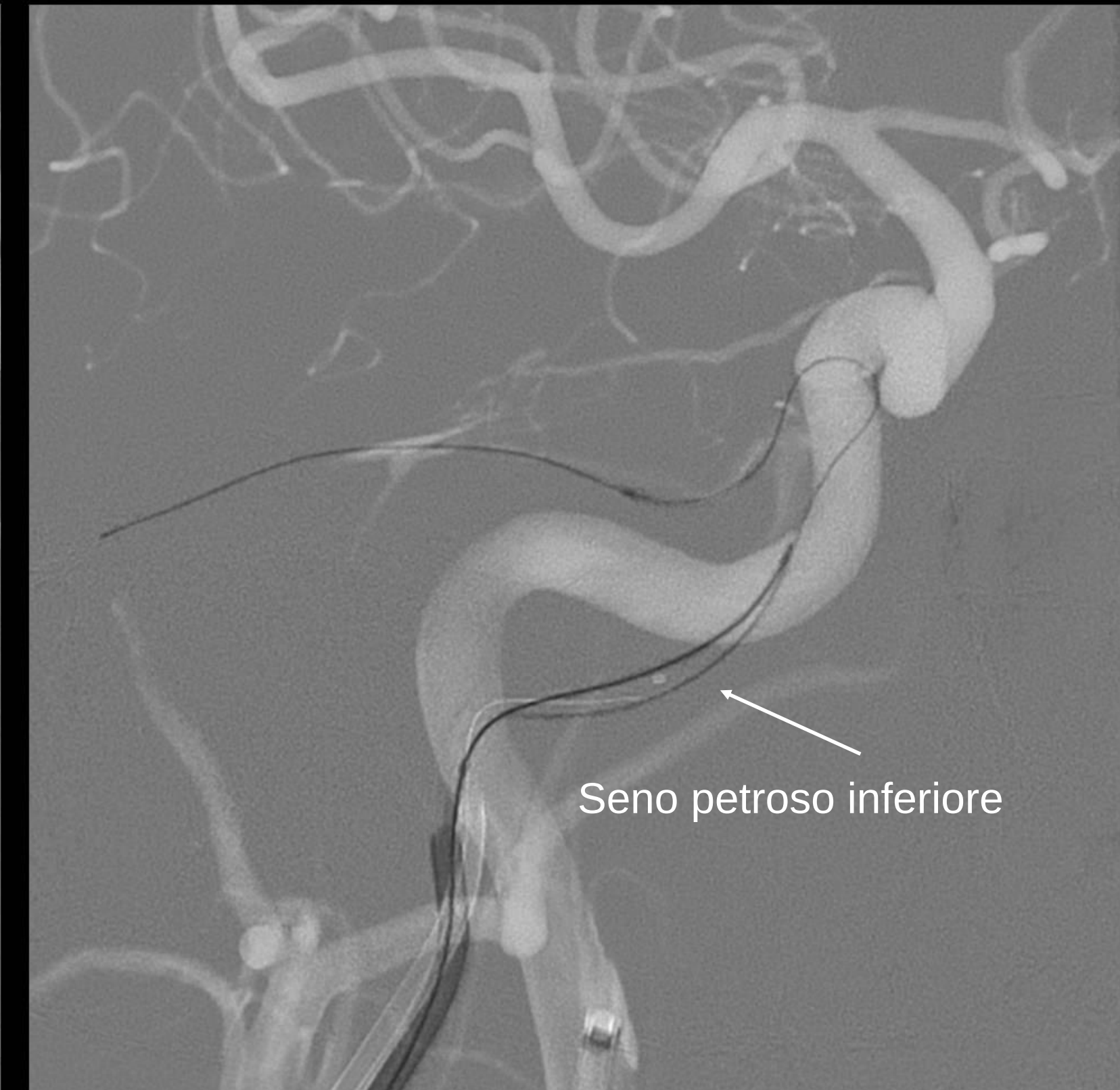
Neuroradiologia interventistica

Malformazione artero-venosa dura



Neuroradiologia interventistica

Malformazione artero-venosa durale



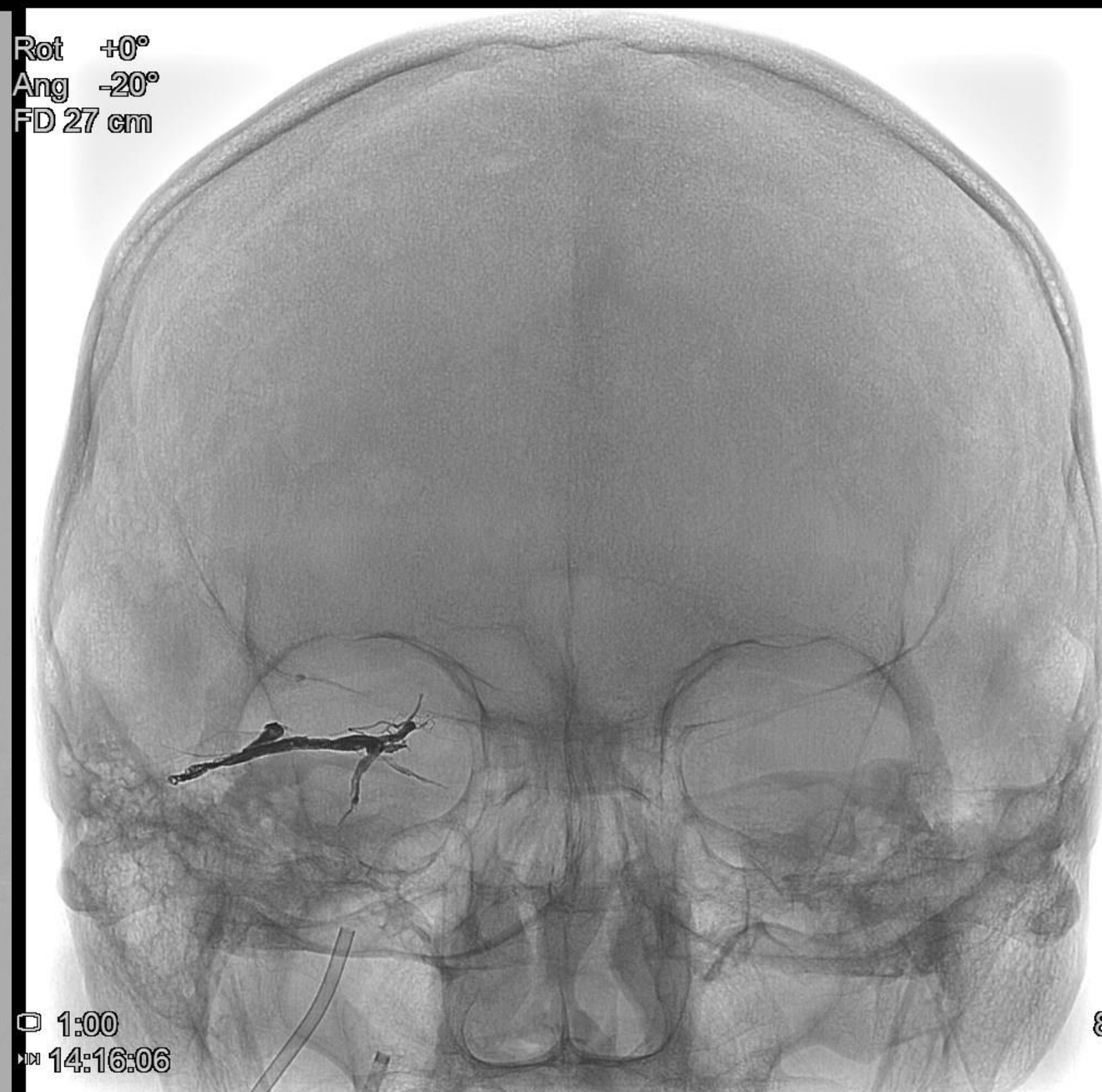
Neuroradiologia interventistica

Malformazione artero-venosa durale



Neuroradiologia interventistica

Malformazione artero-venosa durale



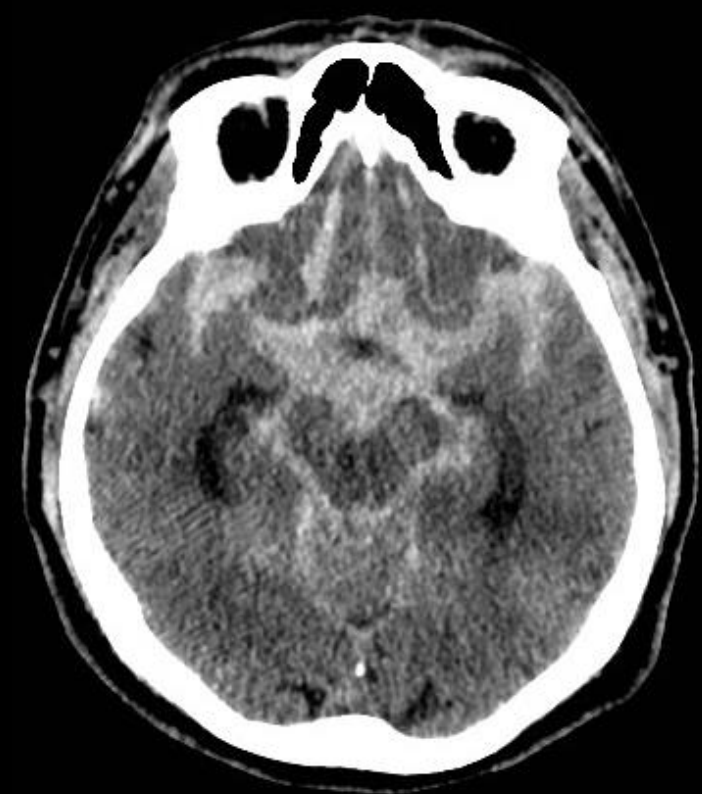
Neuroradiologia interventistica

Malformazione artero-venosa durale



Neuroradiologia interventistica

Emorragie intracraniche



Neuroradiologia interventistica

ESDC: prevenzione dell'ictus ischemico



M 73 anni

Da 15 gg

cefalea

intensa, due

pregressi

infarti del

miocardio,

FA in TAO

GCS 15

Neuroradiologia interventistica

ESDC: prevenzione dell'ictus ischemico

Edlmann et al. *Journal of Neuroinflammation* (2017) 14:108
DOI 10.1186/s12974-017-0881-y

Journal of Neuroinflammation

REVIEW

Open Access



Pathophysiology of chronic subdural haematoma: inflammation, angiogenesis and implications for pharmacotherapy

Ellie Edlmann^{1*}, Susan Giorgi-Coll¹, Peter C. Whitfield², Keri L. H. Carpenter¹ and Peter J. Hutchinson¹

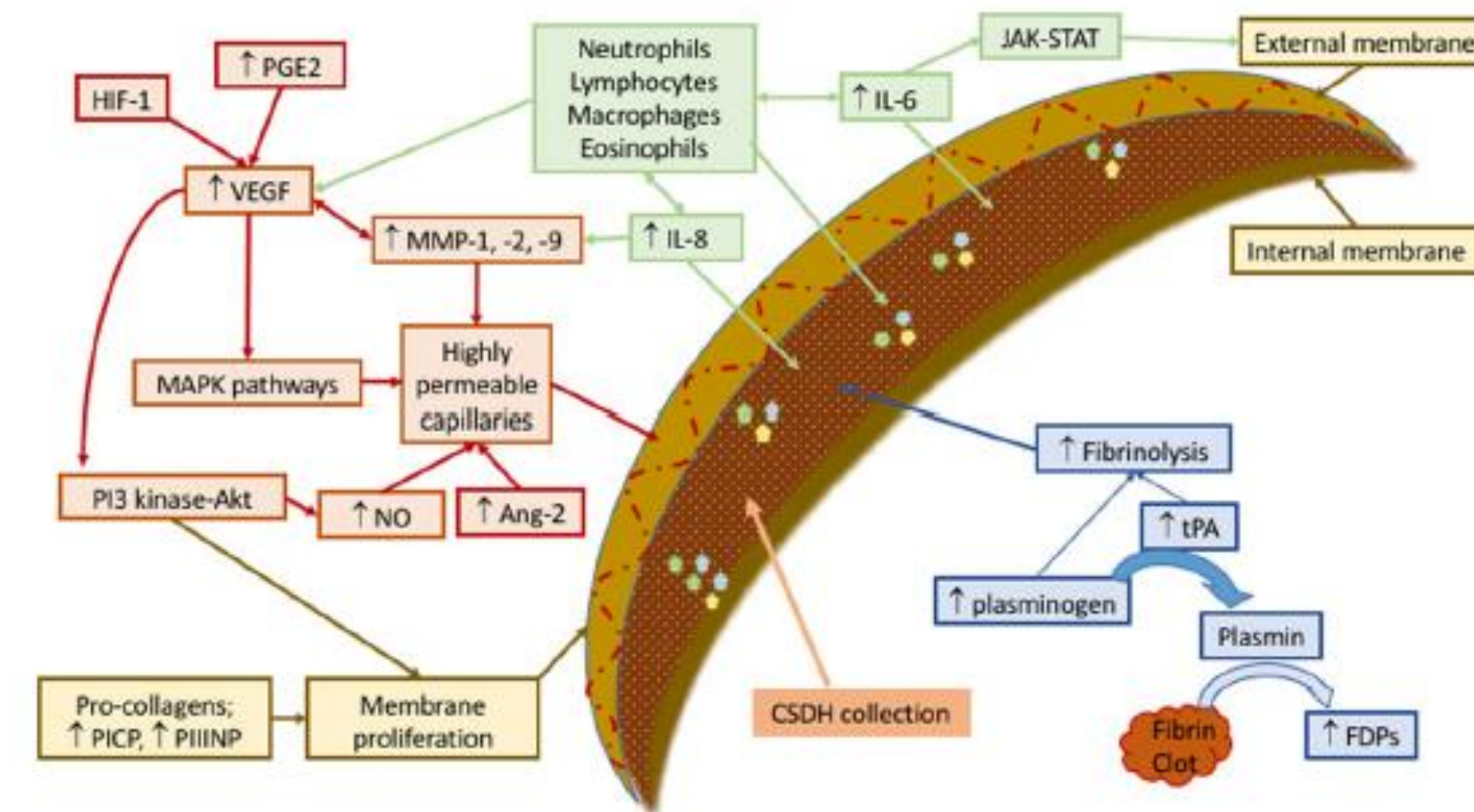
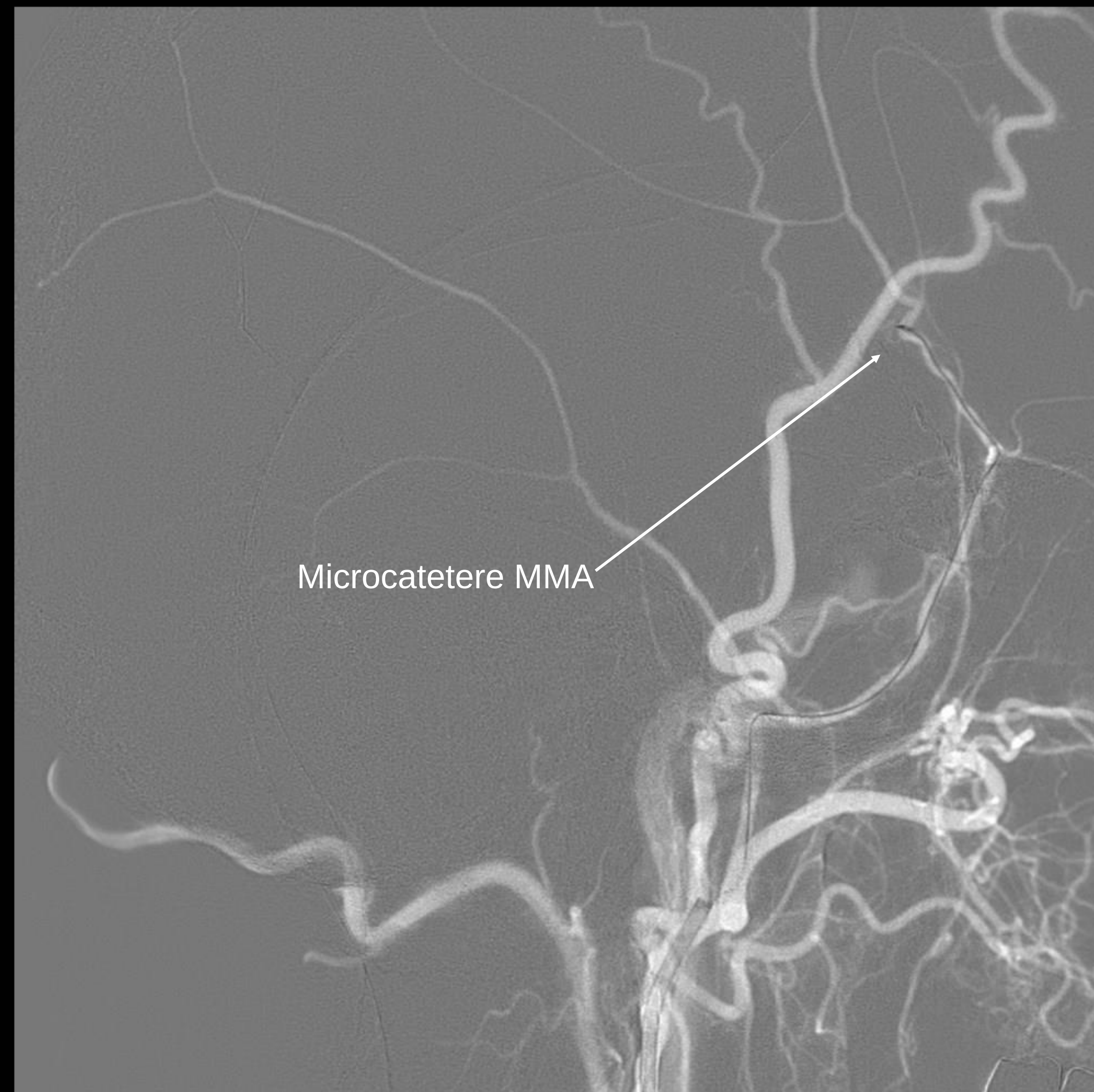


Fig. 3 Summary of molecules associated with CSDH formation including recruitment of inflammatory cells (green), angiogenesis of highly permeable and leaky capillaries (red), processes supporting membrane formation (brown) and fibrinolysis promoting further haemorrhage (blue). Abbreviations: Ang angiopoietin, FDPs fibrin/fibrinogen degradation products, HIF hypoxia-inducible factor, IL interleukin, JAK-STAT Janus kinase-signal transducer and activator of transcription, MAPK mitogen-activated protein kinase, MMP matrix metalloproteinase, NO nitric oxide, PGE prostaglandin E, PI3-Akt phosphatidylinositol 3-kinase-serine/threonine kinase, PICP procollagen type 1, PIIINP procollagen type 3, tPA tissue plasminogen activator, VEGF vascular endothelial growth factor

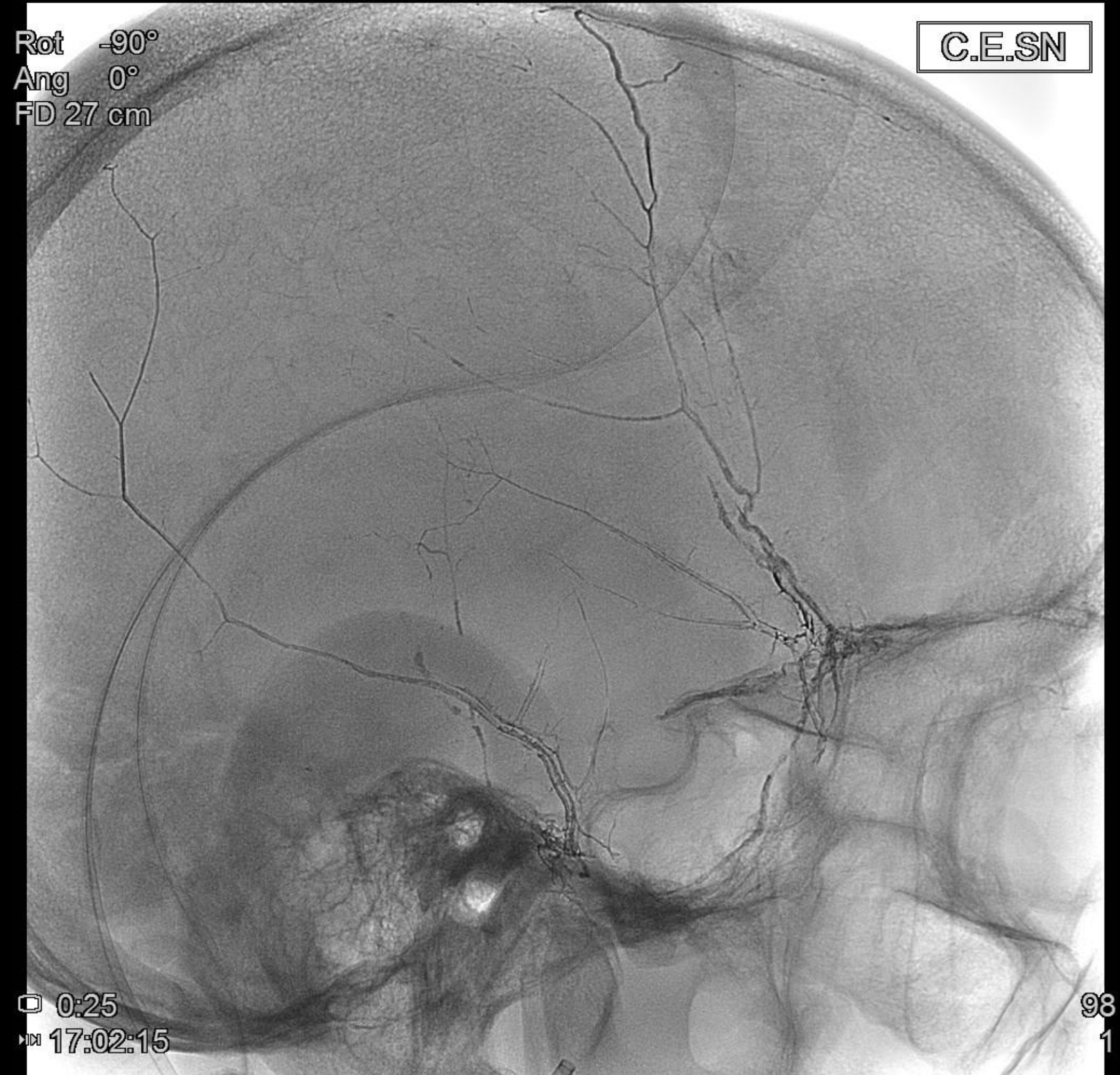
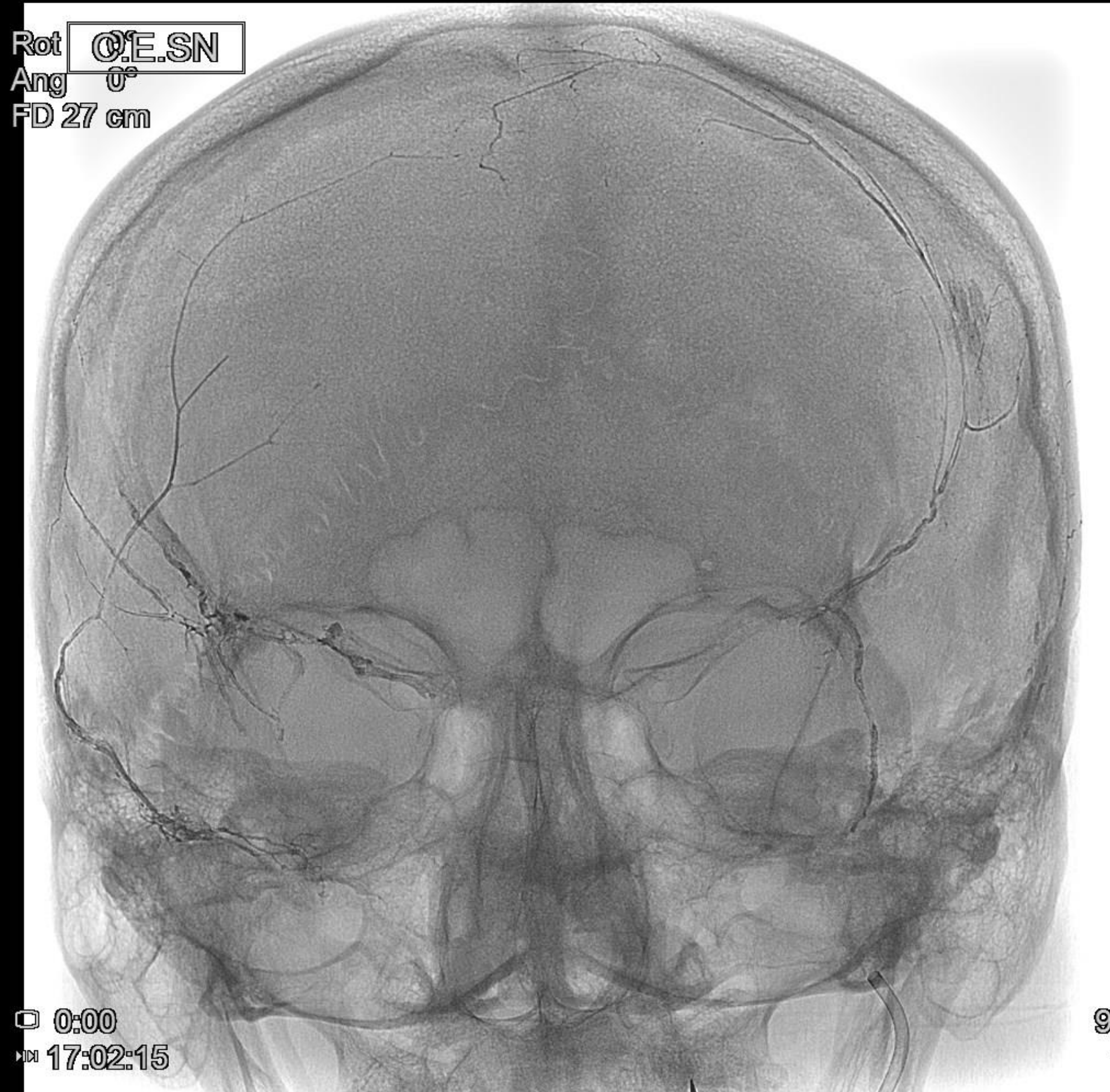
Neuroradiologia interventistica

ESDC: prevenzione dell'ictus ischemico



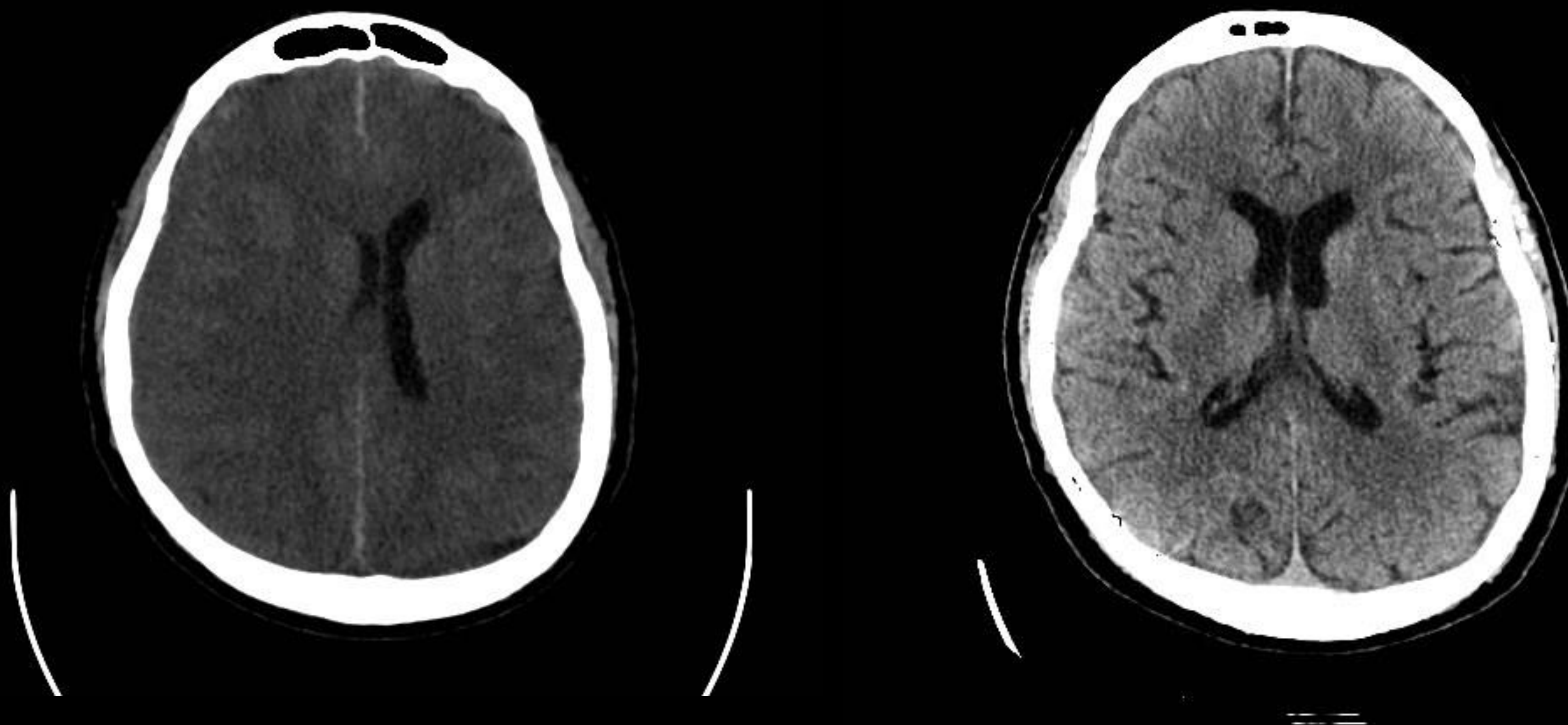
Neuroradiologia interventistica

ESDC: prevenzione dell'ictus ischemico



Neuroradiologia interventistica

ESDC: prevenzione dell'ictus ischemico



Neuroradiologia interventistica

Uno strano caso di ictus!



M 64 anni in
abs.

Improvviso
senso di
instabilità
marcia,
disastria e
parestesie
arto sup.
destro

Neuroradiologia interventistica

Uno strano caso di ictus!



Neuroradiologia interventistica

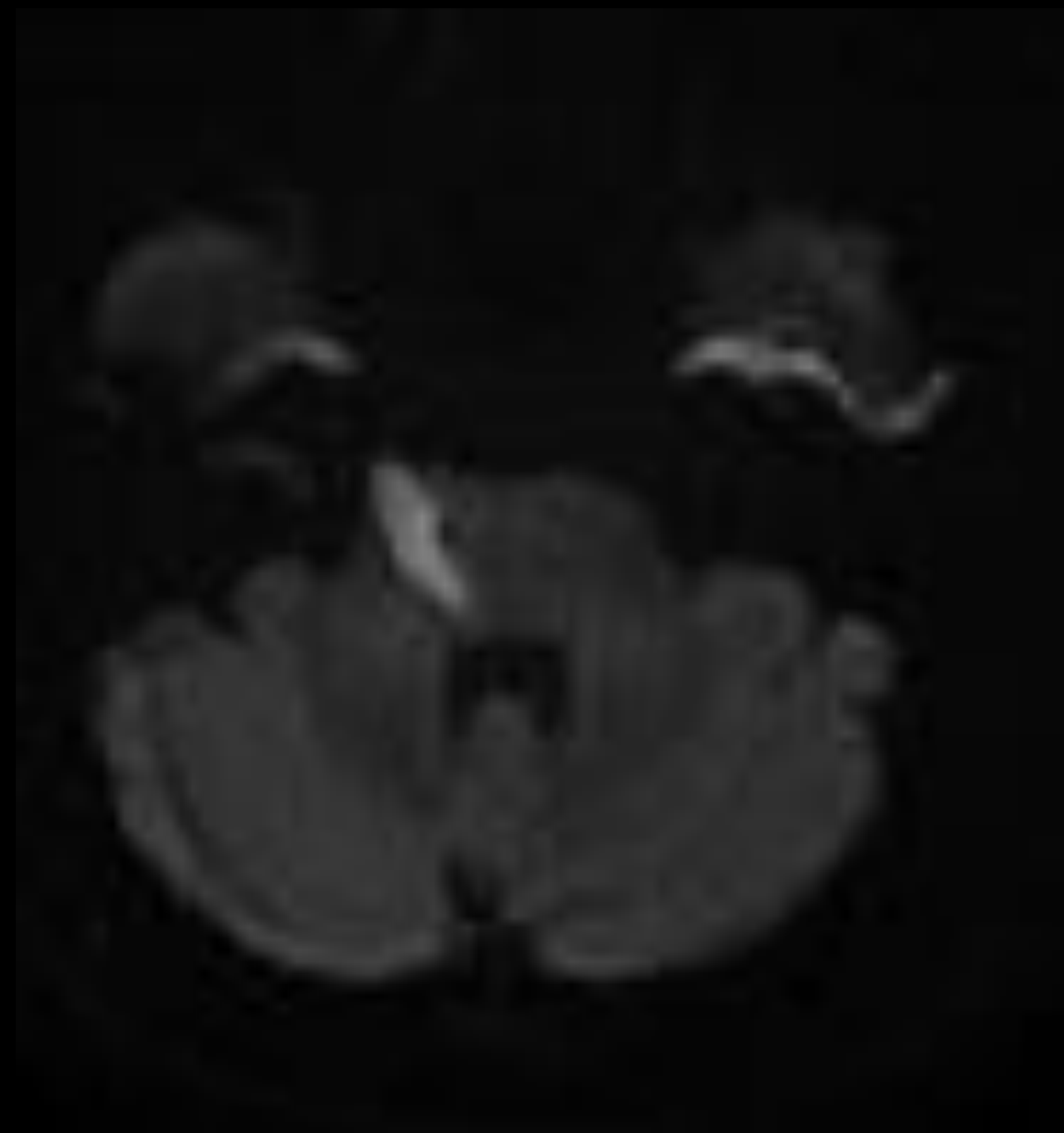
Uno strano caso di ictus!

ID studio: 112CE20001135363
Data esame: 2020/05/25

Rotaz.: -1°
Ang.: +22°

Lato testa

N. seriogr.: 5006
Tipo volume: 3DRA
Data seriogr.: 2020/05/25
Numero seriogr.: 17:47:05
Dimensione cubo: 74.66 mm



Neuroradiologia interventistica

Uno strano caso di ictus!



Neuroradiologia interventistica

Uno strano caso di ictus!



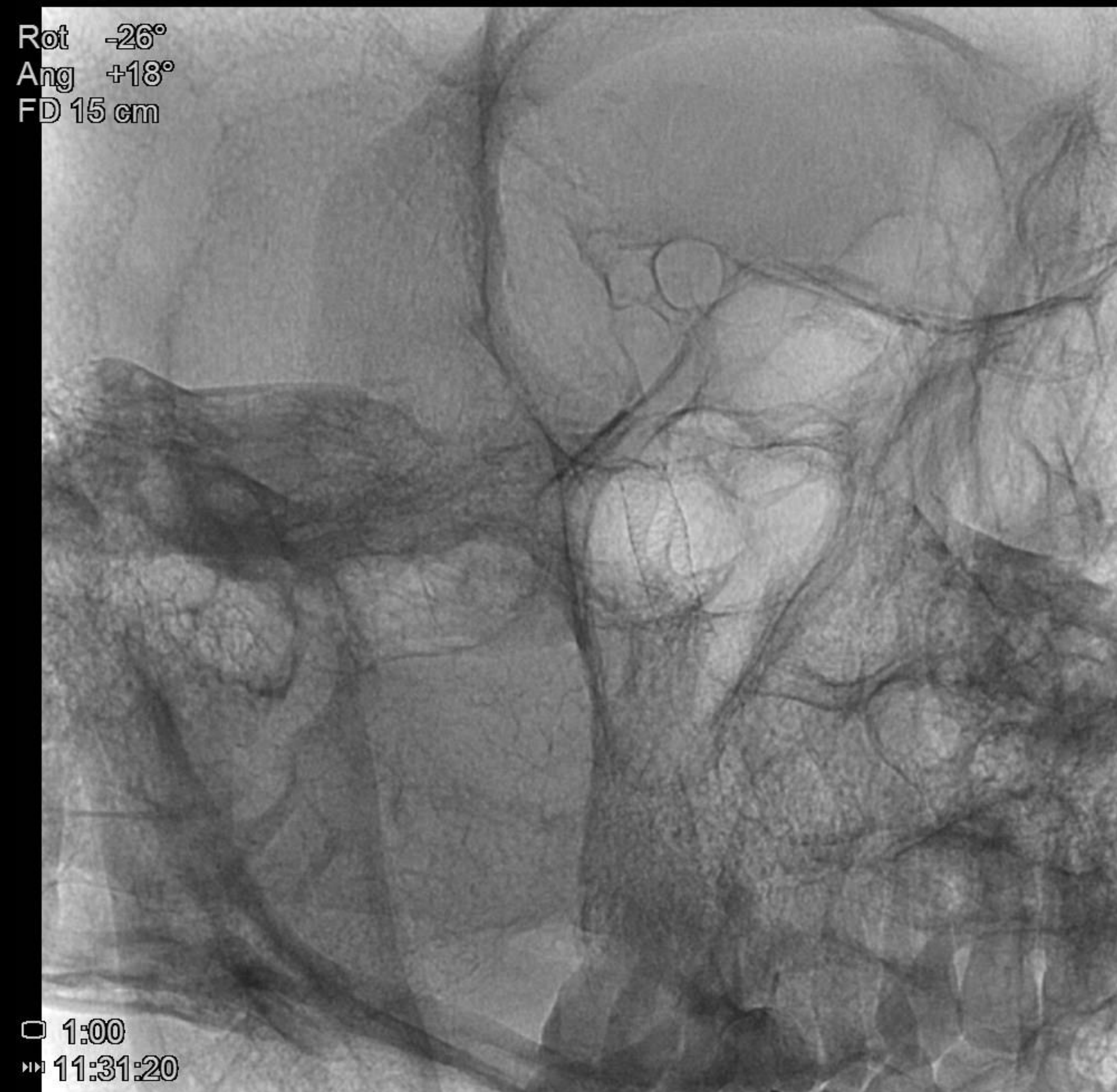
Neuroradiologia interventistica

Uno strano caso di ictus!



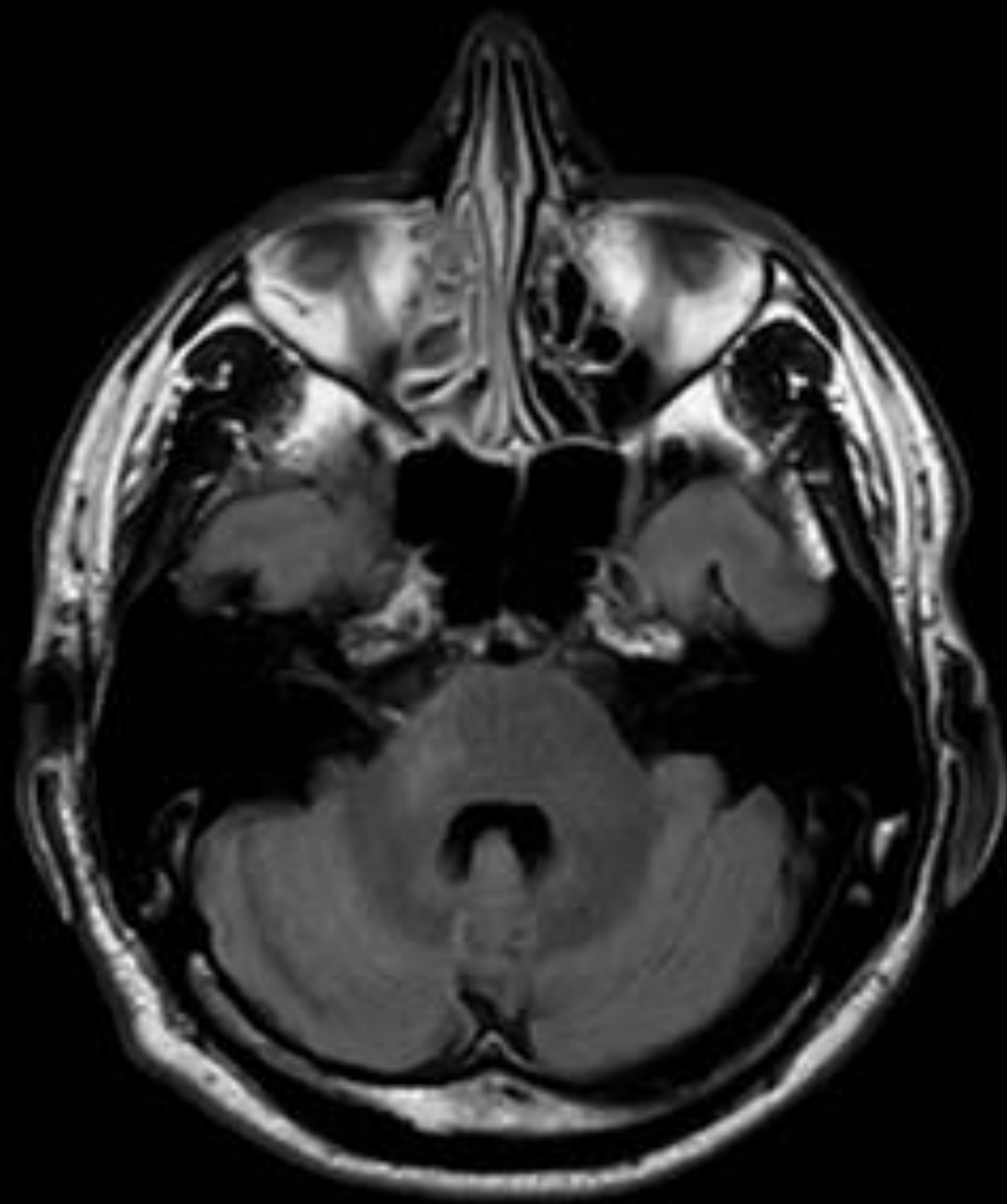
Neuroradiologia interventistica

Uno strano caso di ictus!



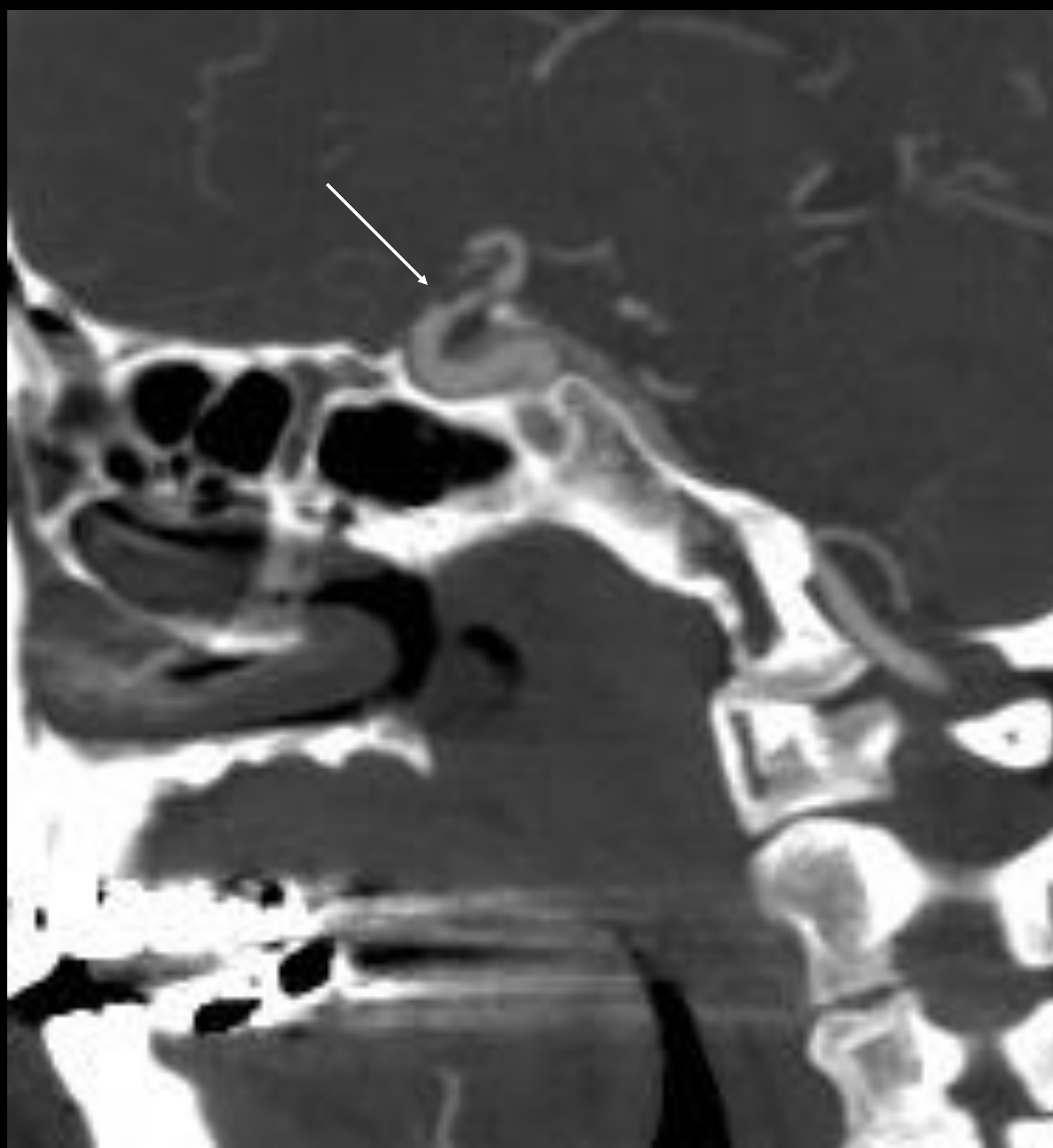
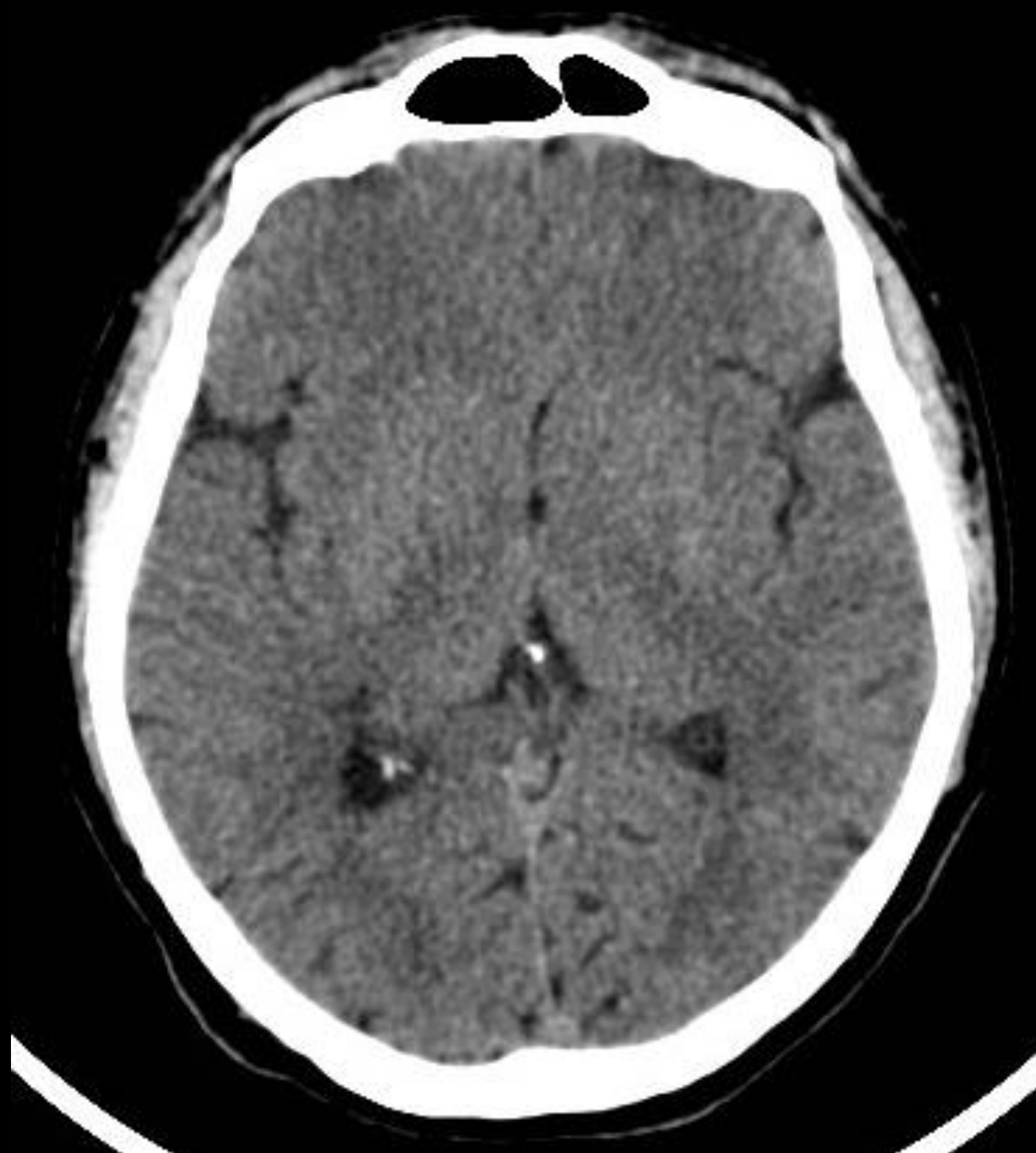
Neuroradiologia interventistica

Uno strano caso di ictus!



Neuroradiologia interventistica

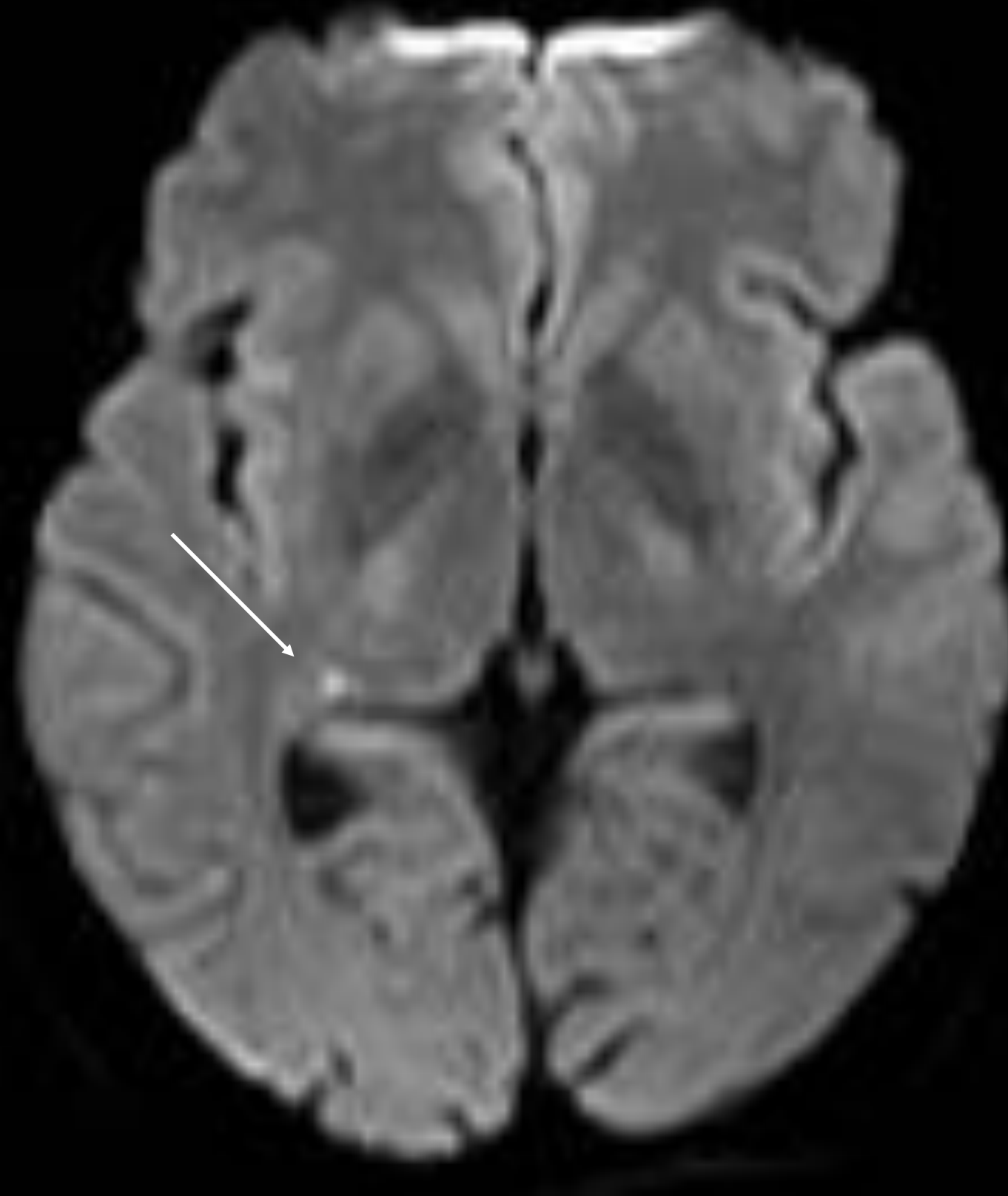
Dissezioni



M 61 anni in
abs.
Cefalea,
ipostenia
arti sinistra
e turbe
visive e
dell'eloquio

Neuroradiologia interventistica

Dissezioni



M 61 anni in
abs.

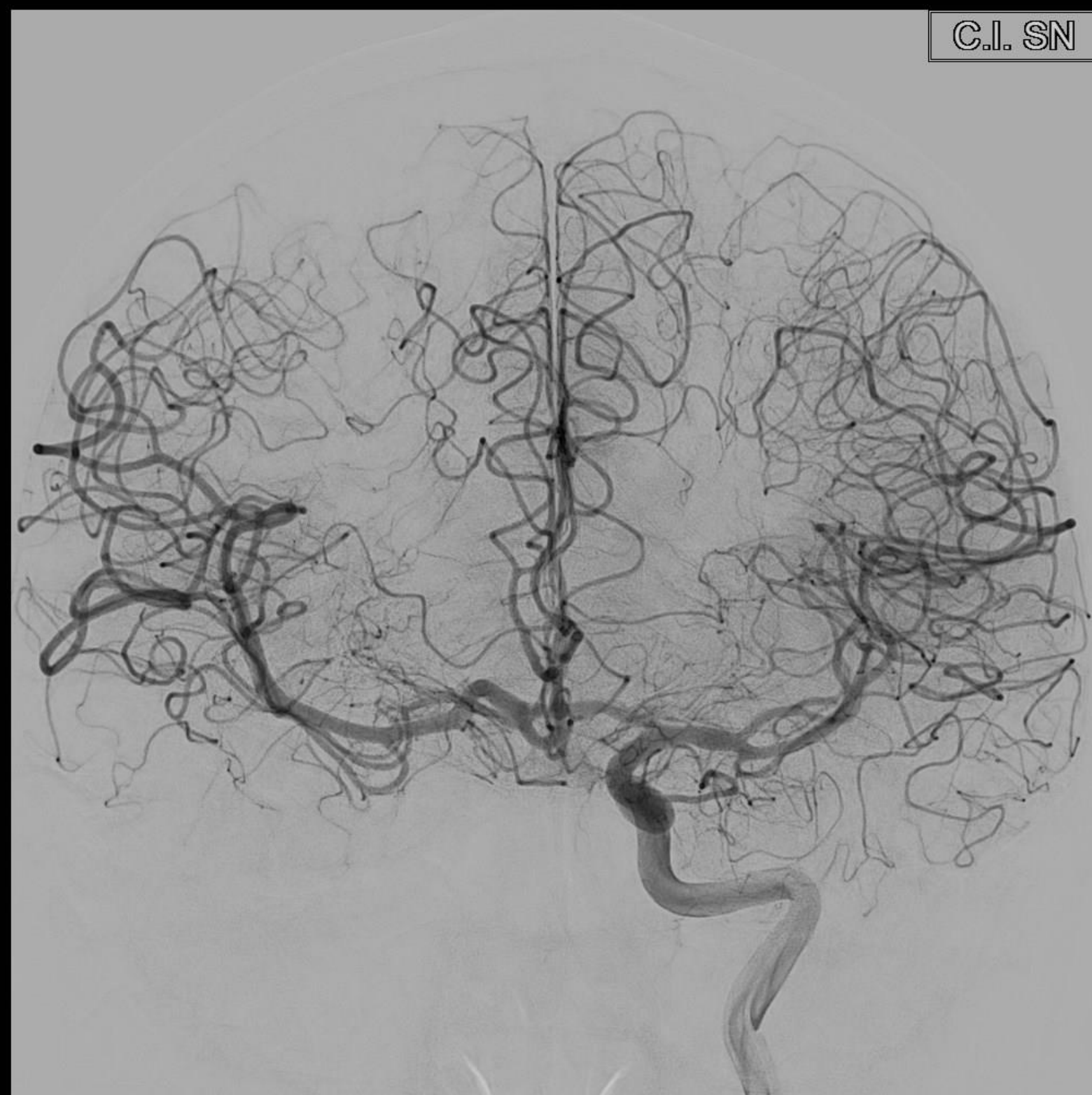
Cefalea,
ipostenia
arti sinistra
e turbe
visive e
dell'eloquio

Neuroradiologia interventistica



Neuroradiologia interventistica

Dissezioni



Terapia
fibrinolitica

Neuroradiologia interventistica

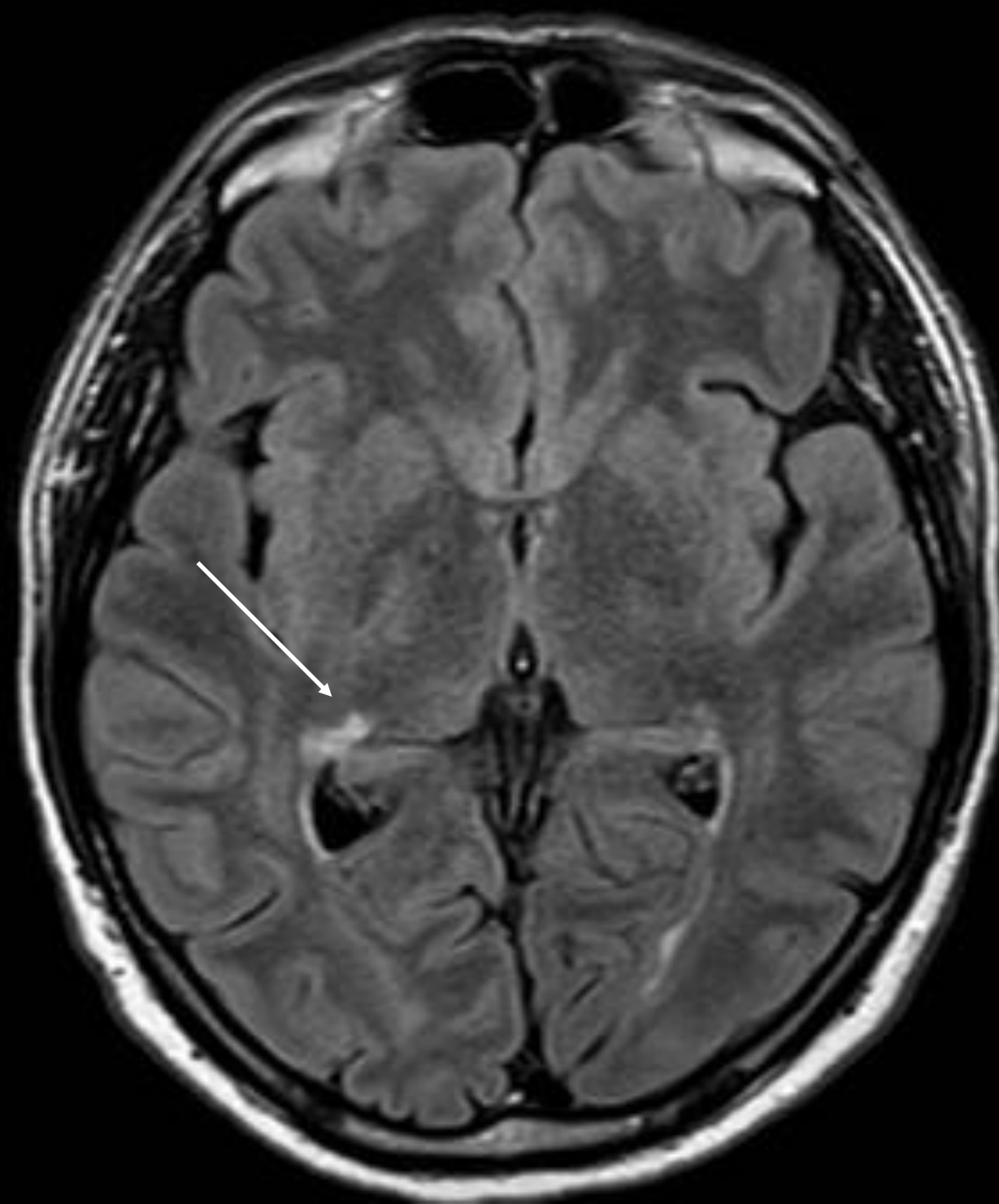
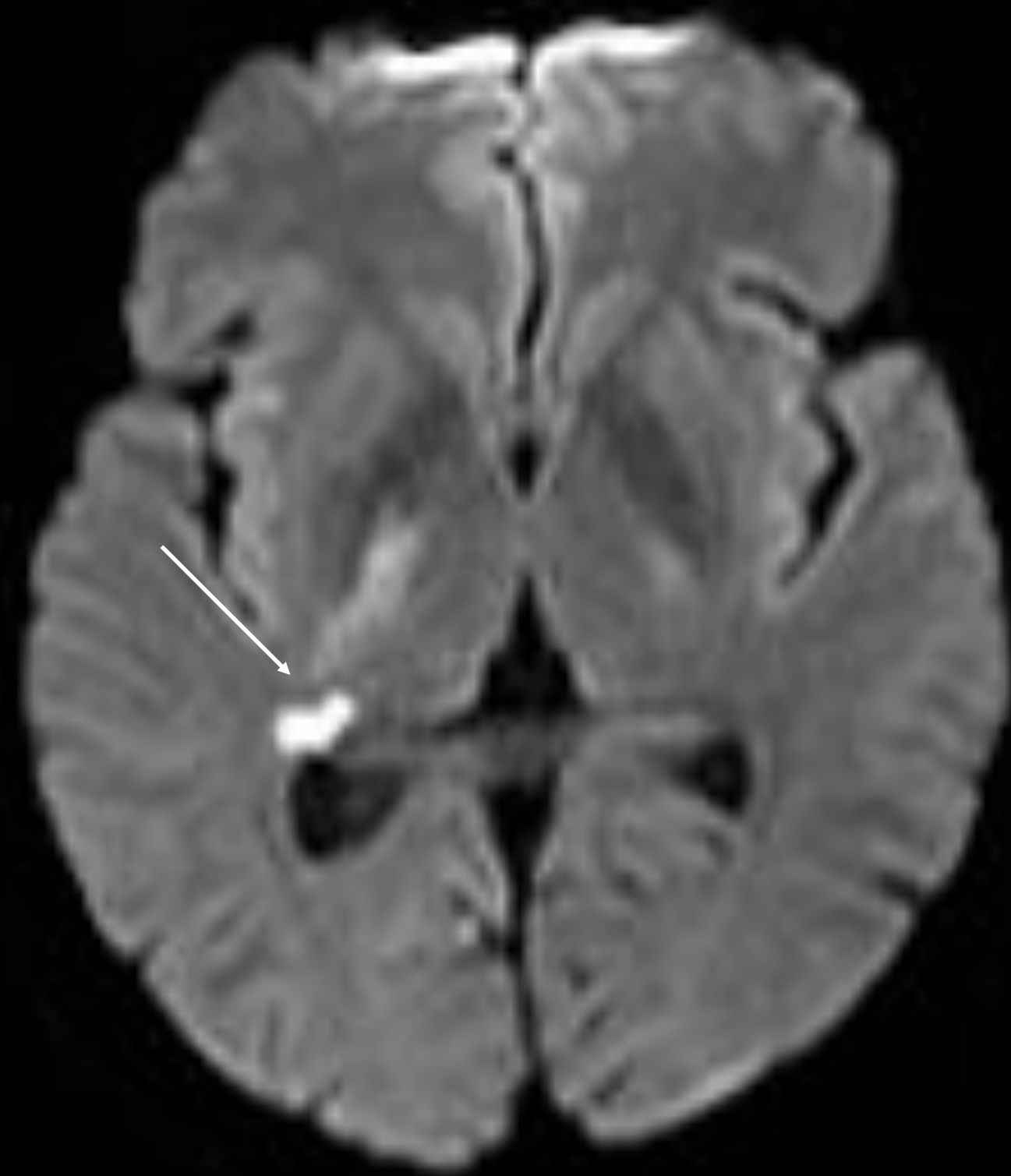
Dissezioni



4 gg
dopo...recidi
va di sintomi
(ipostenia
arto sup,
deviazione
rima orale e
disastri)

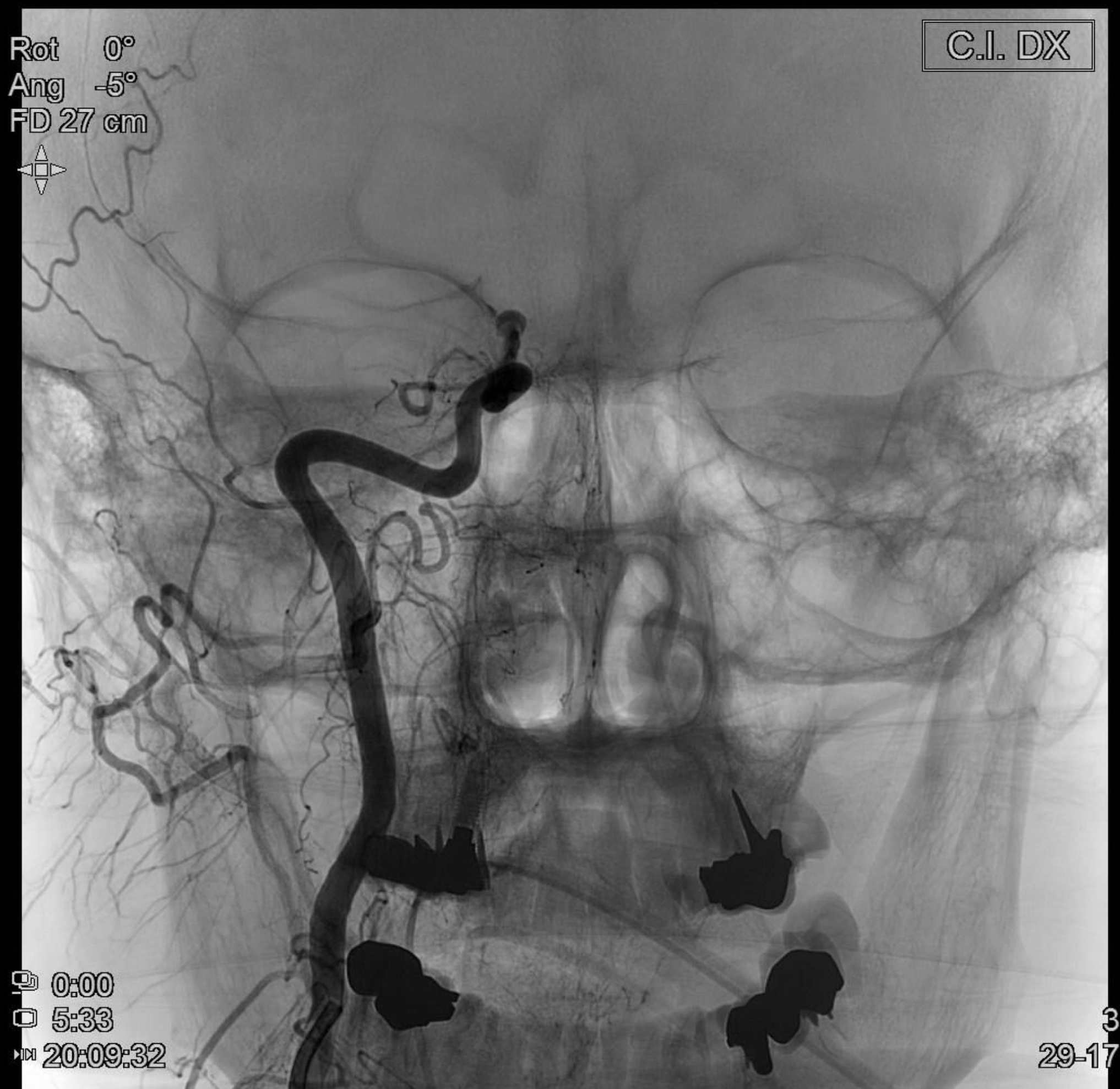
Neuroradiologia interventistica

Dissezioni



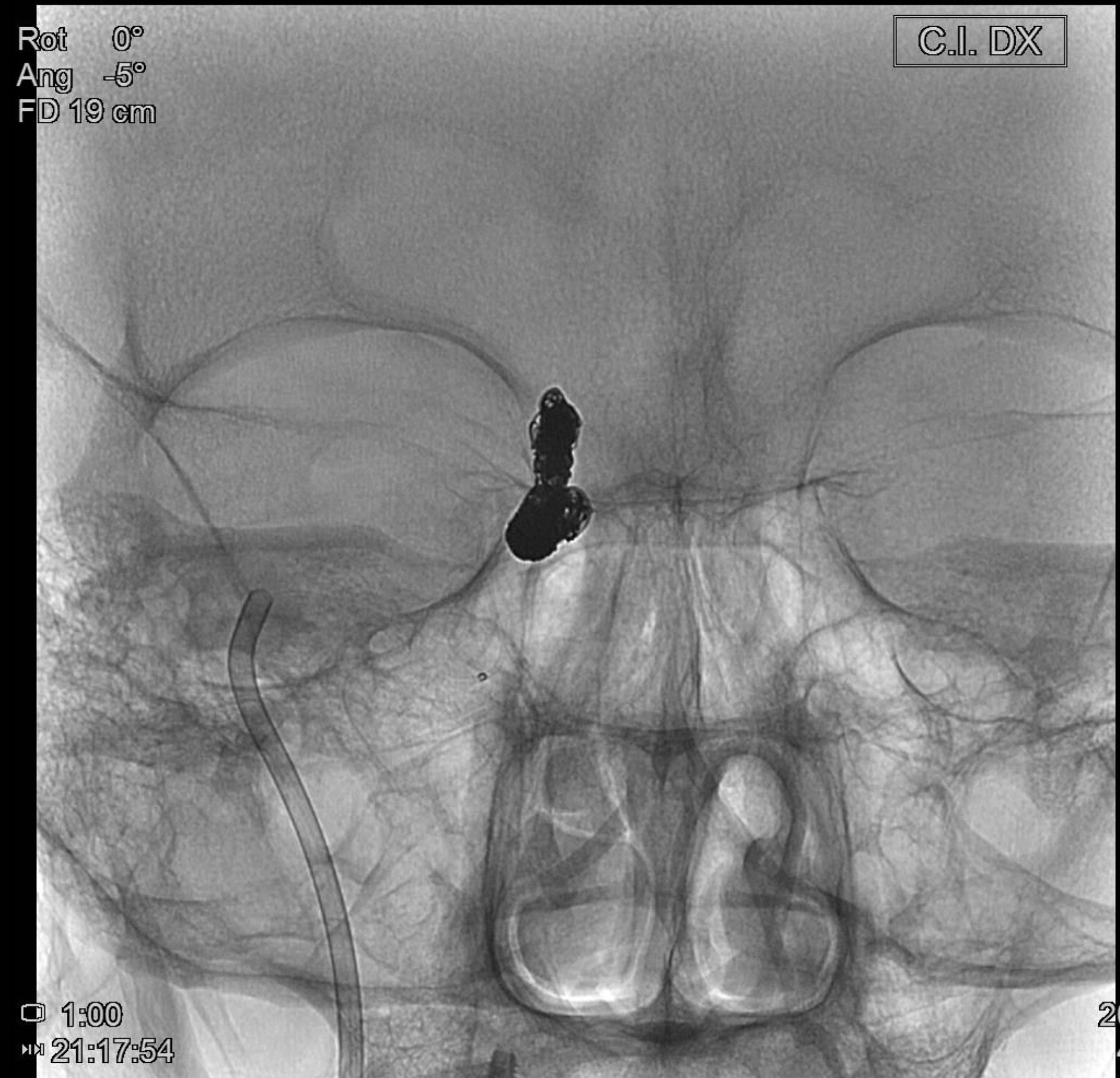
Neuroradiologia interventistica

Dissezioni



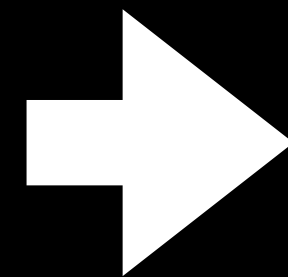
Neuroradiologia interventistica

Dissezioni



Neuroradiologia interventistica

Dissezioni



Neuroradiologia interventistica

Qual è il ruolo del Neuroradiologo interventista nelle emorragie intracraniche?

Neuroradiologia interventistica

Qual è il ruolo del Neuroradiologo interventista nelle emorragie intracraniche?

1) Diagnosi accurata e tempestiva



Neuroradiologia interventistica

Qual è il ruolo del Neuroradiologo interventista nelle emorragie intracraniche?

1) Diagnosi accurata e tempestiva



2) Trattamento ASAP della causa del sanguinamento e in qualsiasi modo possibile!



Spirali? Pallone?
Stent? Flow-diverter?
Colla? Liquidi
embolizzanti?
Particelle? Accesso
arterioso? Accesso
venoso? Accesso
percutaneo?

Grazie dell'attenzione!

