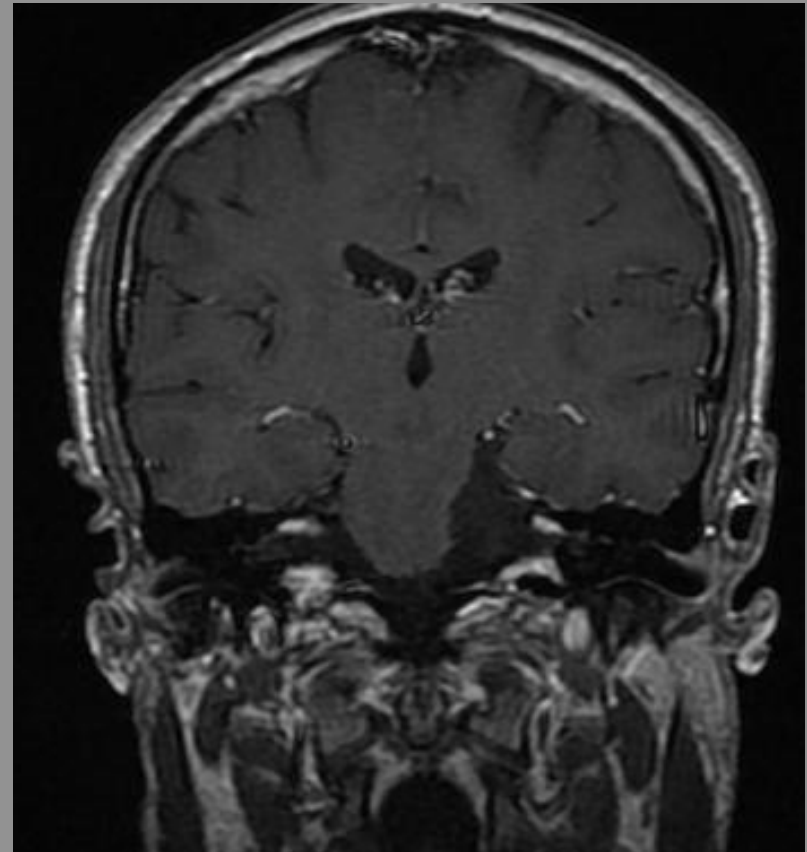


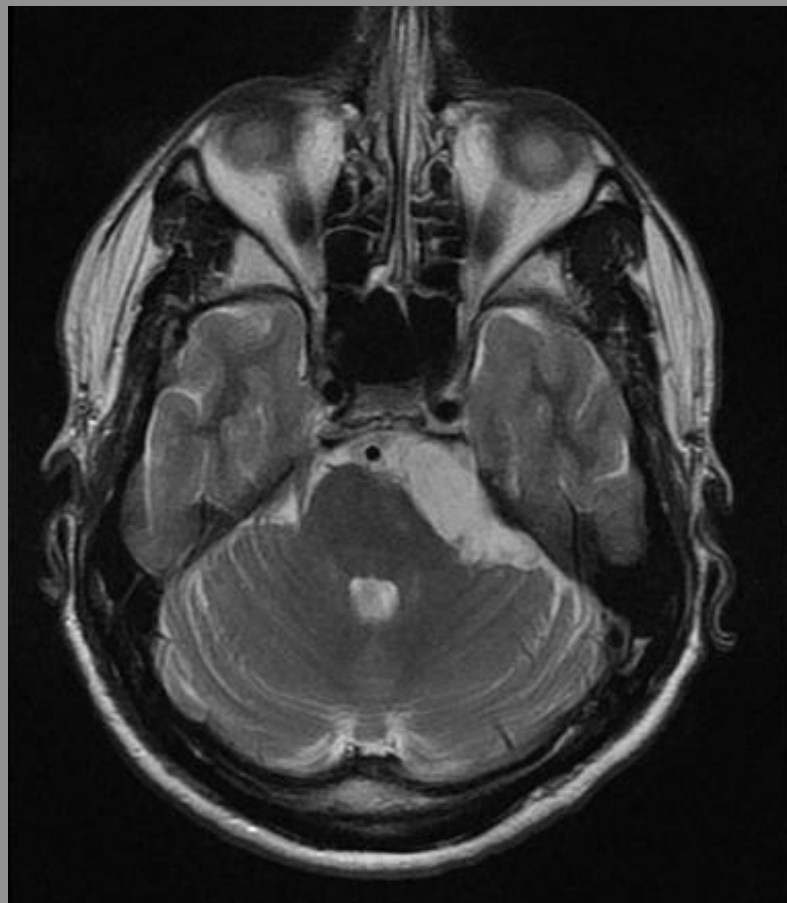
Vienne, 24 mars 2012

SÉANCE DE CAS CLINIQUES- REPONSES

Stéphane Gérenton
Philippe Turret
François Cotton

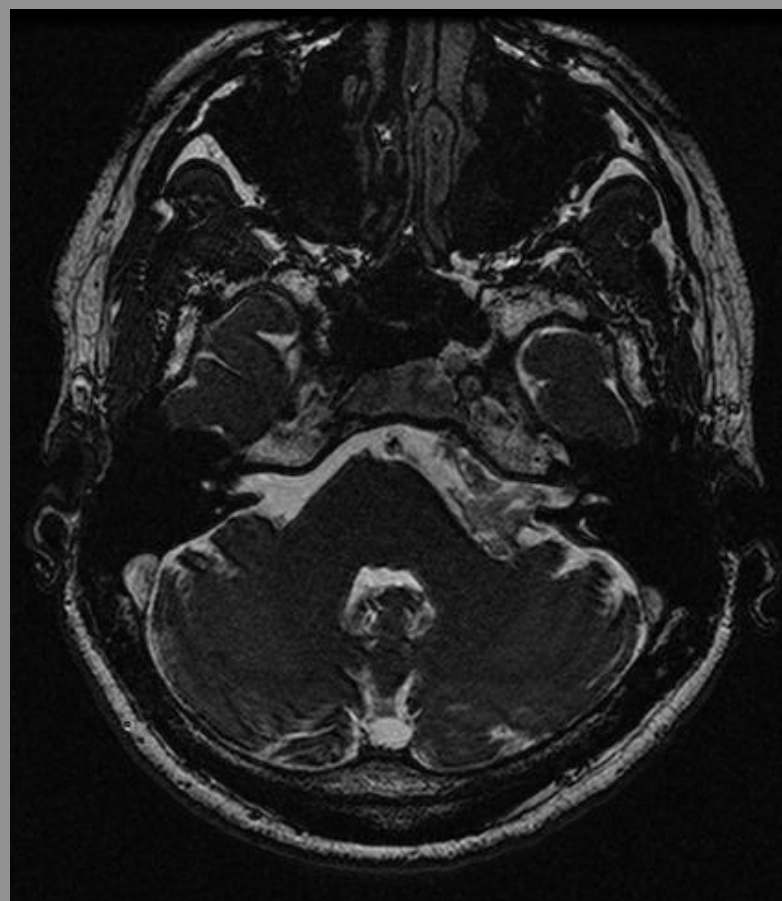


- Patient aux ATCD de vertiges IRM en 2000 : Diagnostic Kyste arachnoïdien
- Apparition récente d'une surdité gauche avec atteinte des PEA chez cet homme de 37 ans



T2

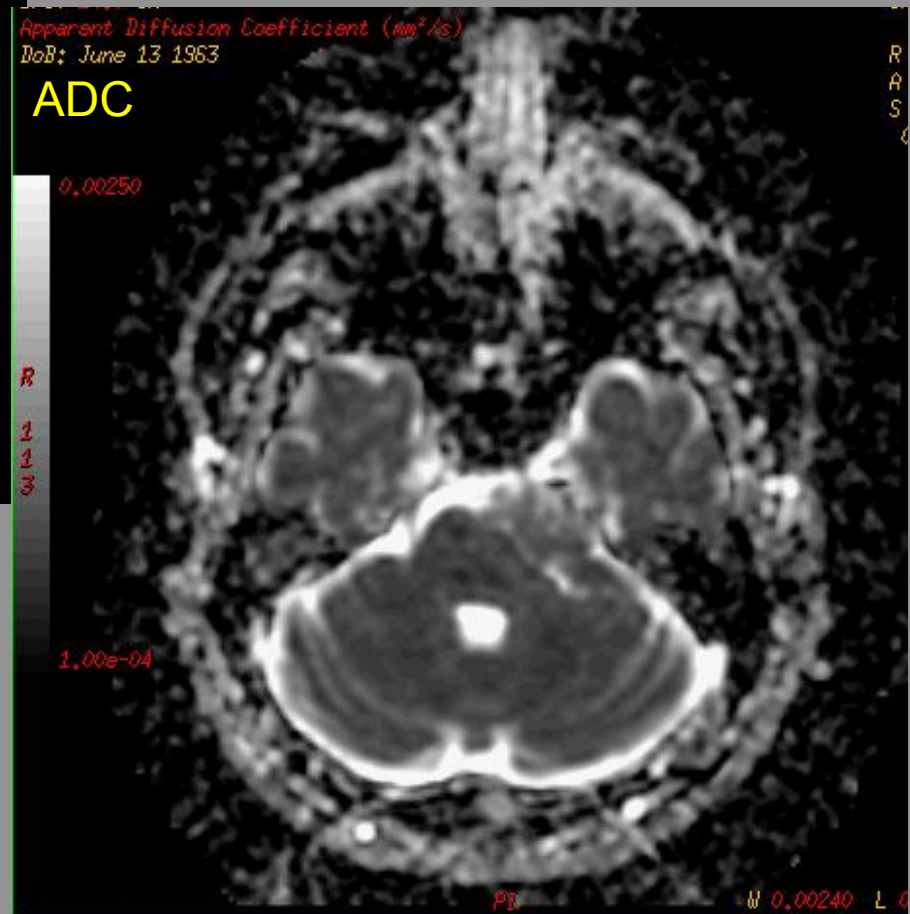
FIESTA / CISS



B 1000



DIFFUSION

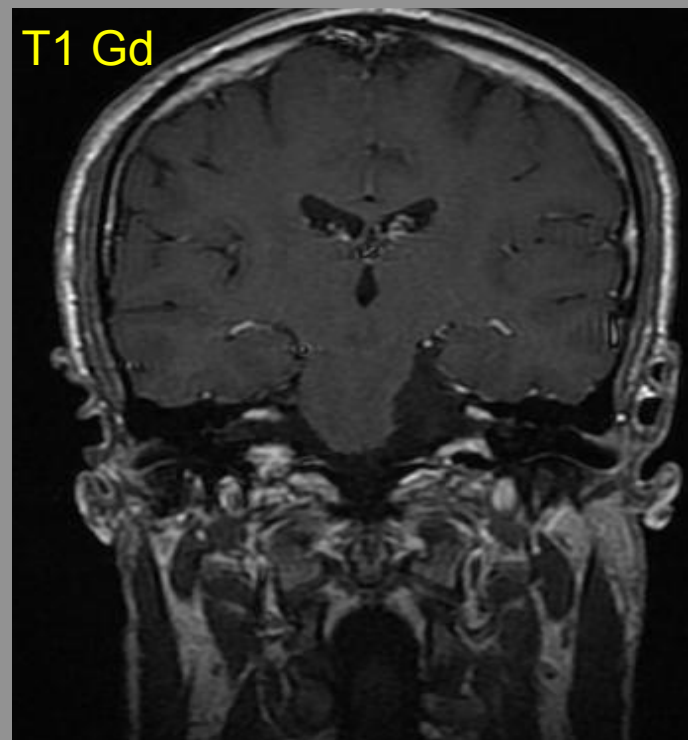


Chute de l' ADC et syndrome tumoral

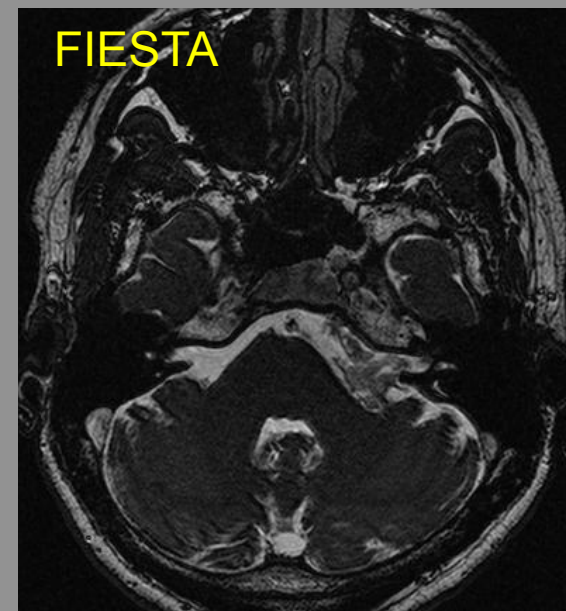
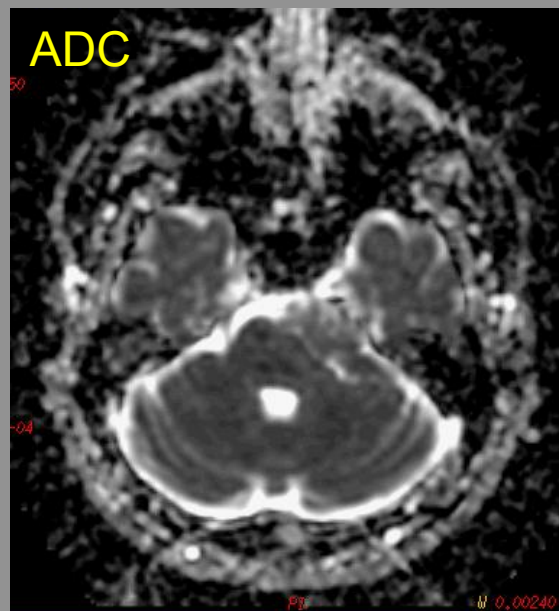
Évoquer :



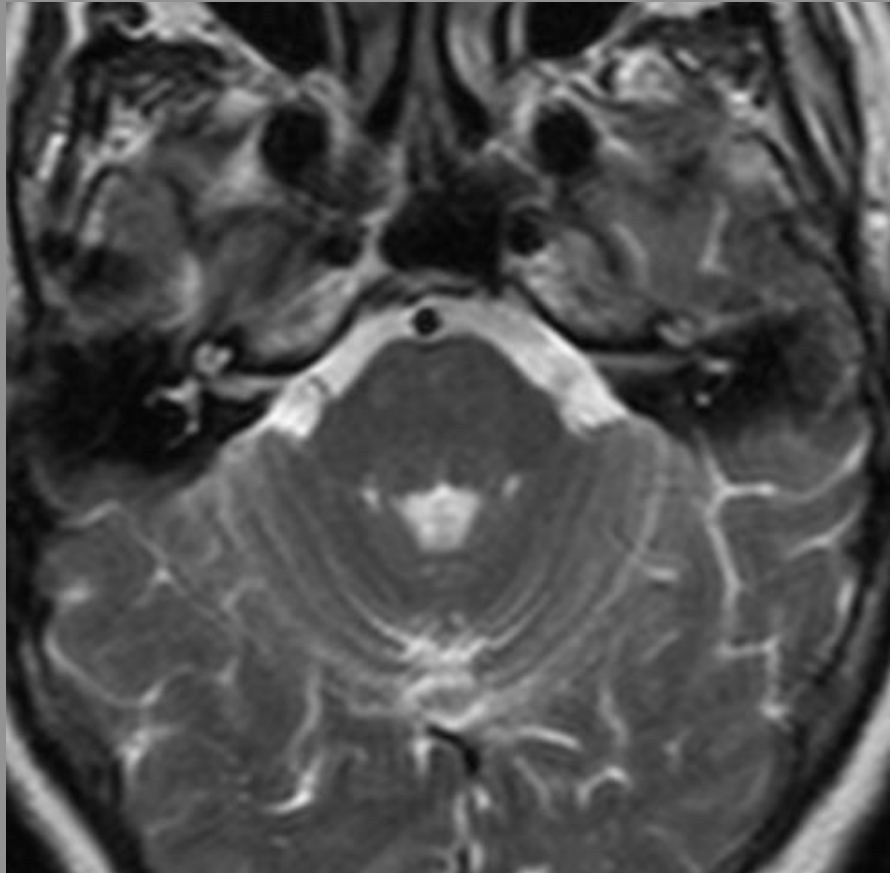
- Kyste épidermoïde
- Méningiome grade 2 / 3
- Lymphomes
- DNET
- Zone tumorale calcique ou hémorragique



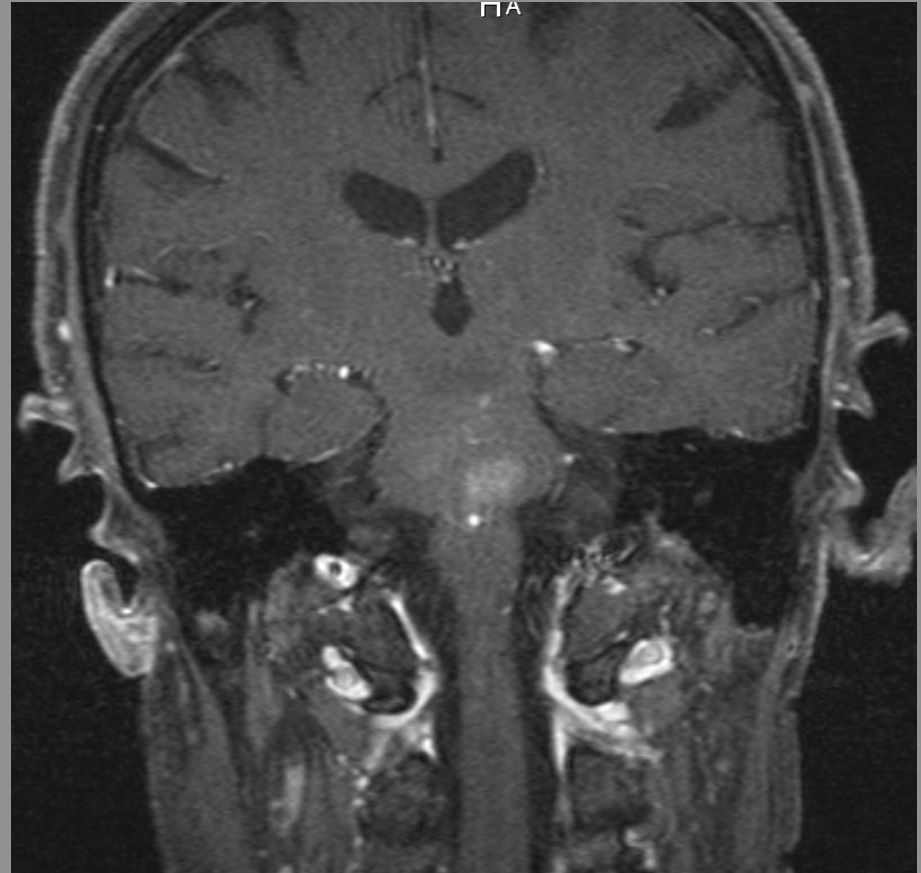
Kyste
épidermoïde



T2



T1Gd



88 ans ; vertiges

Interprétation

- Syndrome tumoral du tronc
- Vascularisation de la lésion par une artère anormale
- Avis spécialisé



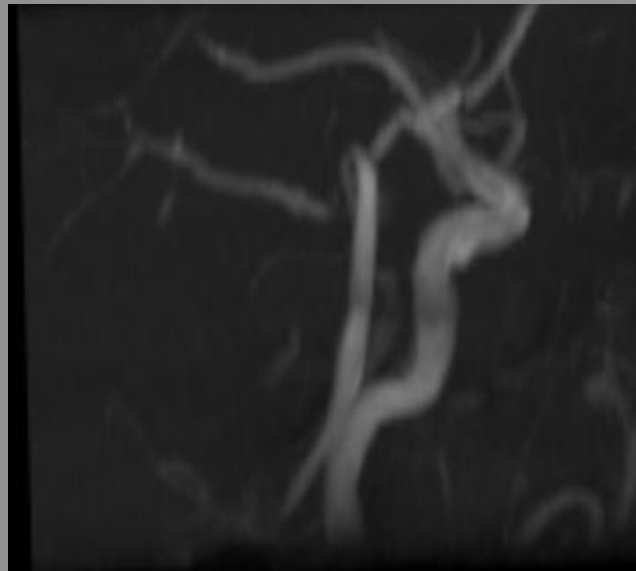
B6

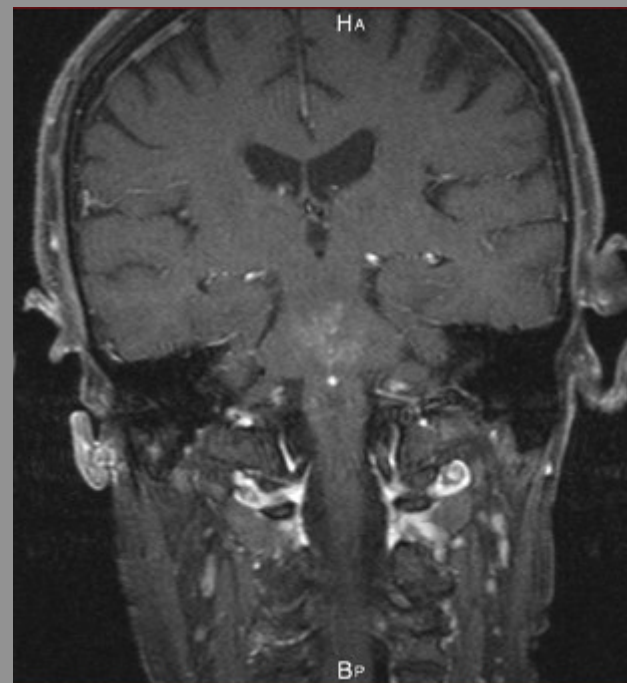
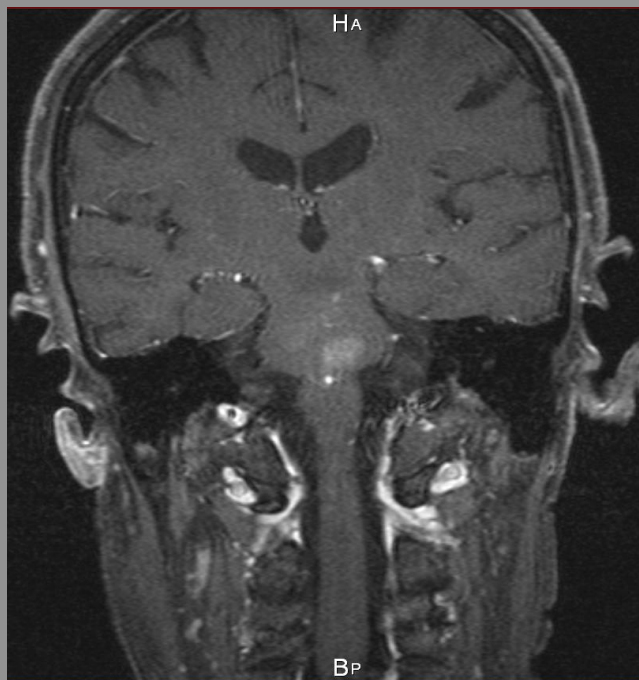


T2*

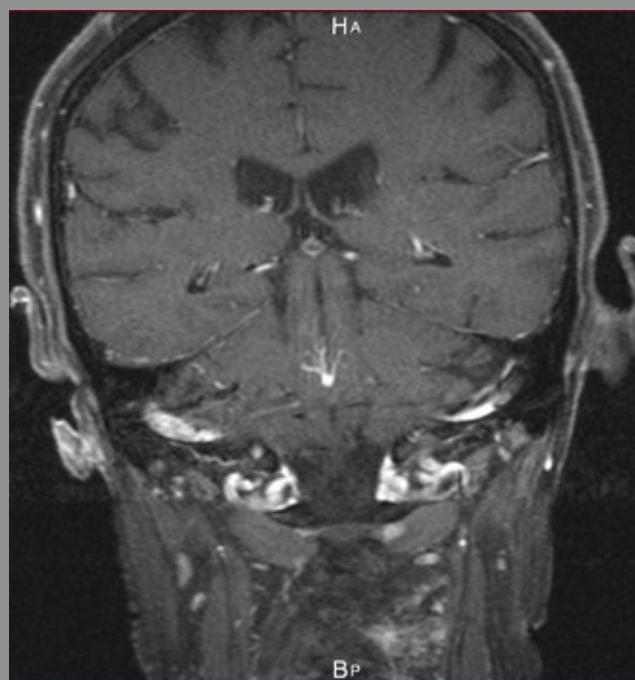
B6

TOF



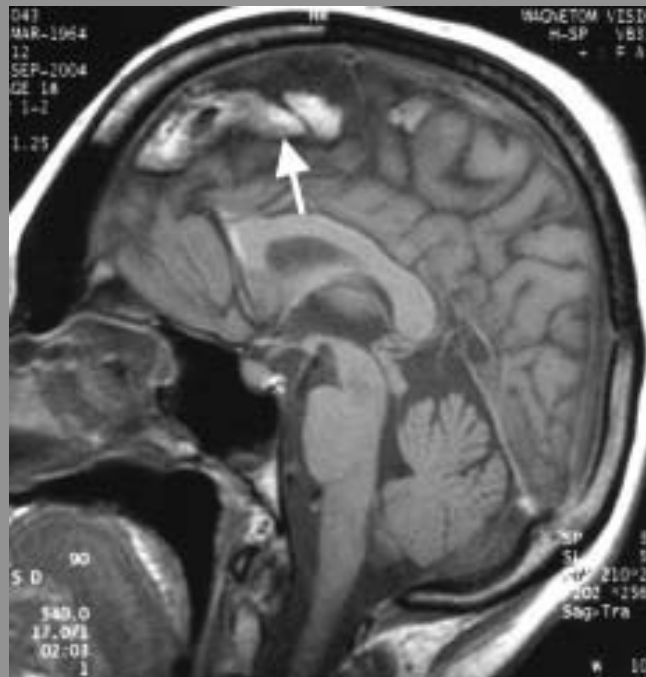


T1Gd

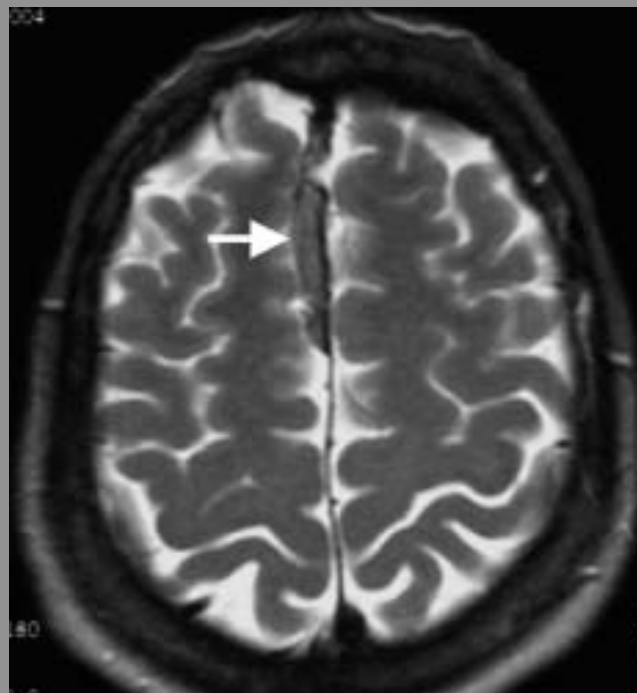
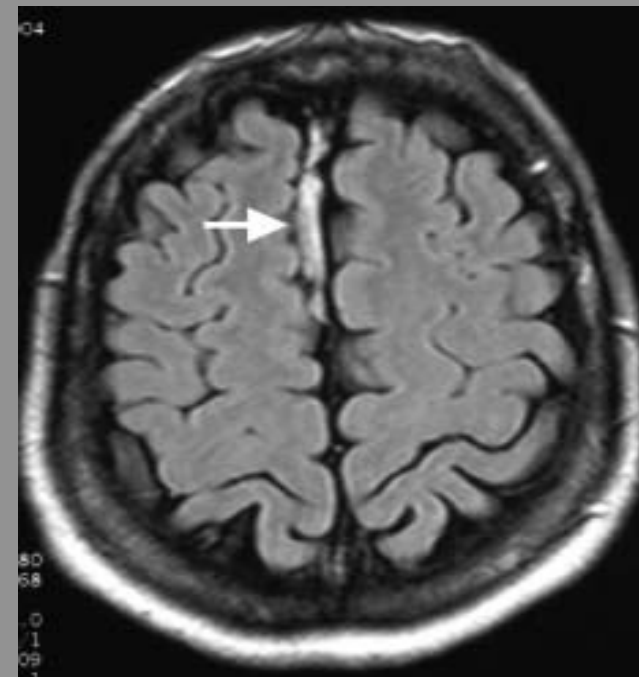


Susceptibilité magnétique

- Calcium
- Air
- Hémosidérine
- Ferritine
- Mélanine
- Désoxy-hémoglobine

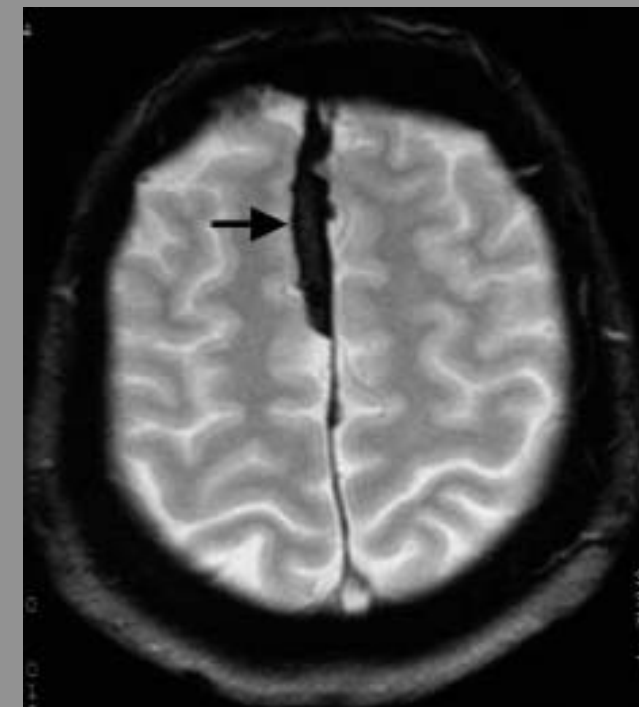


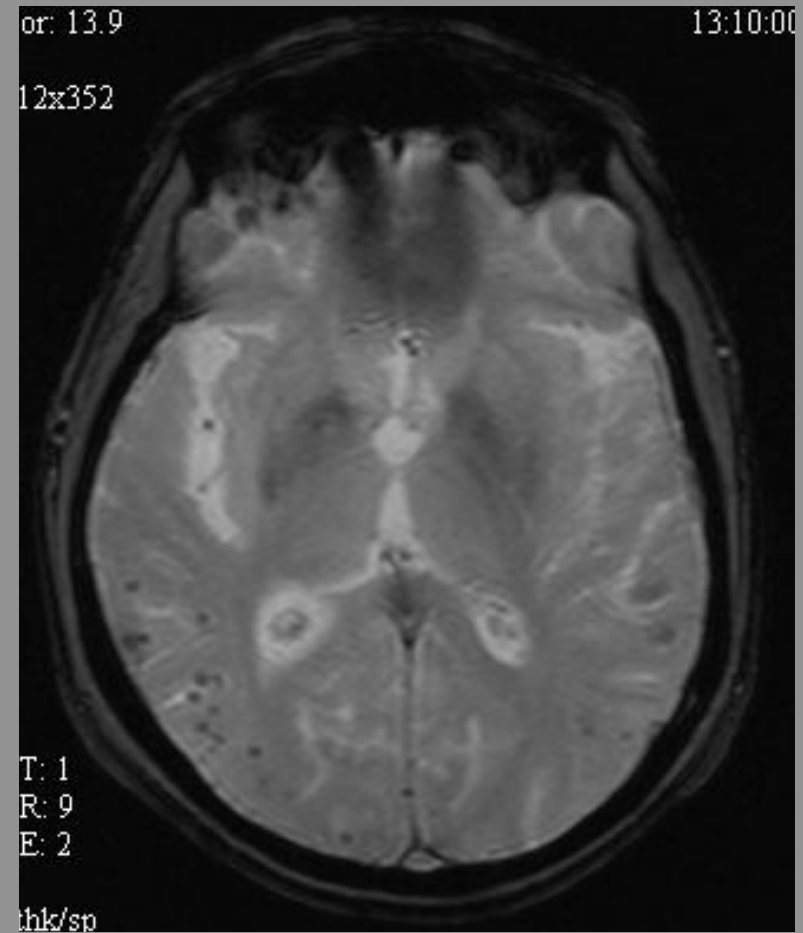
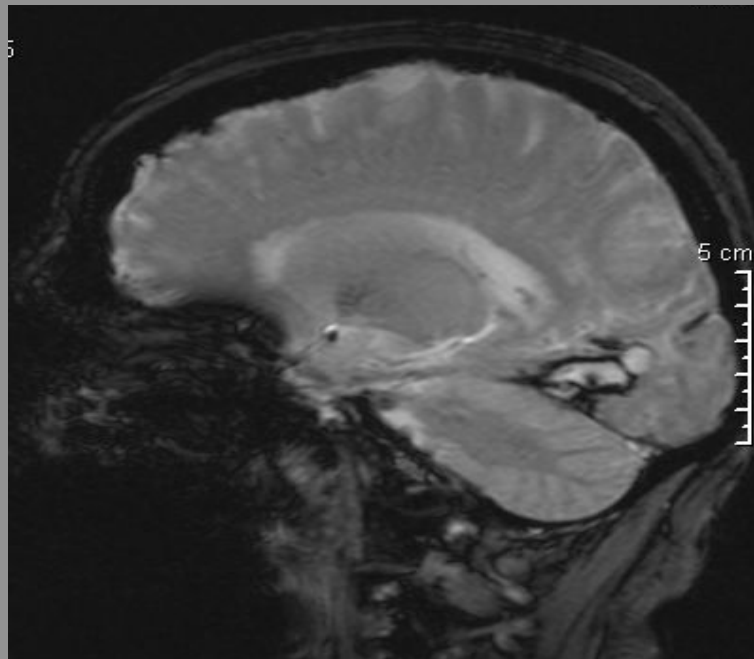
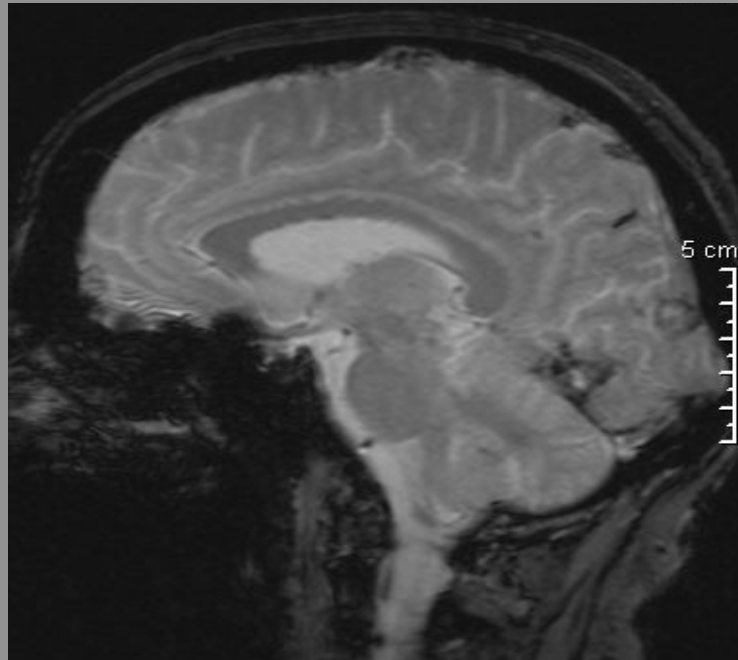
T1



T2

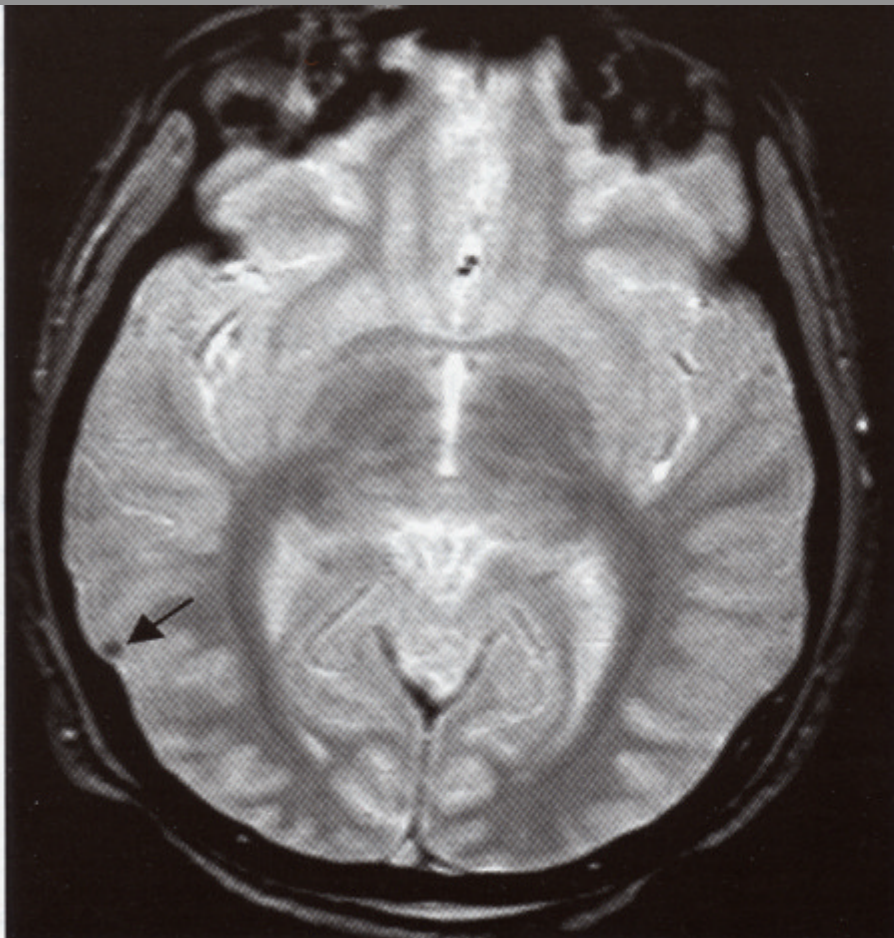
EGT2



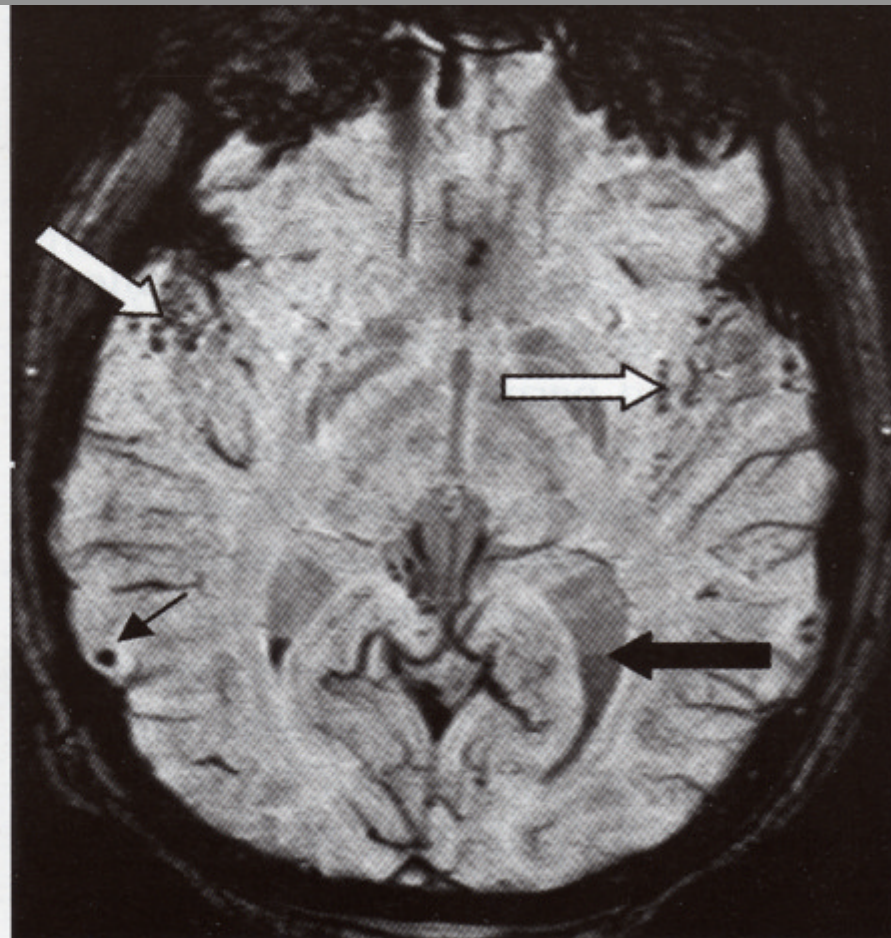


Angiopathie
amyloide

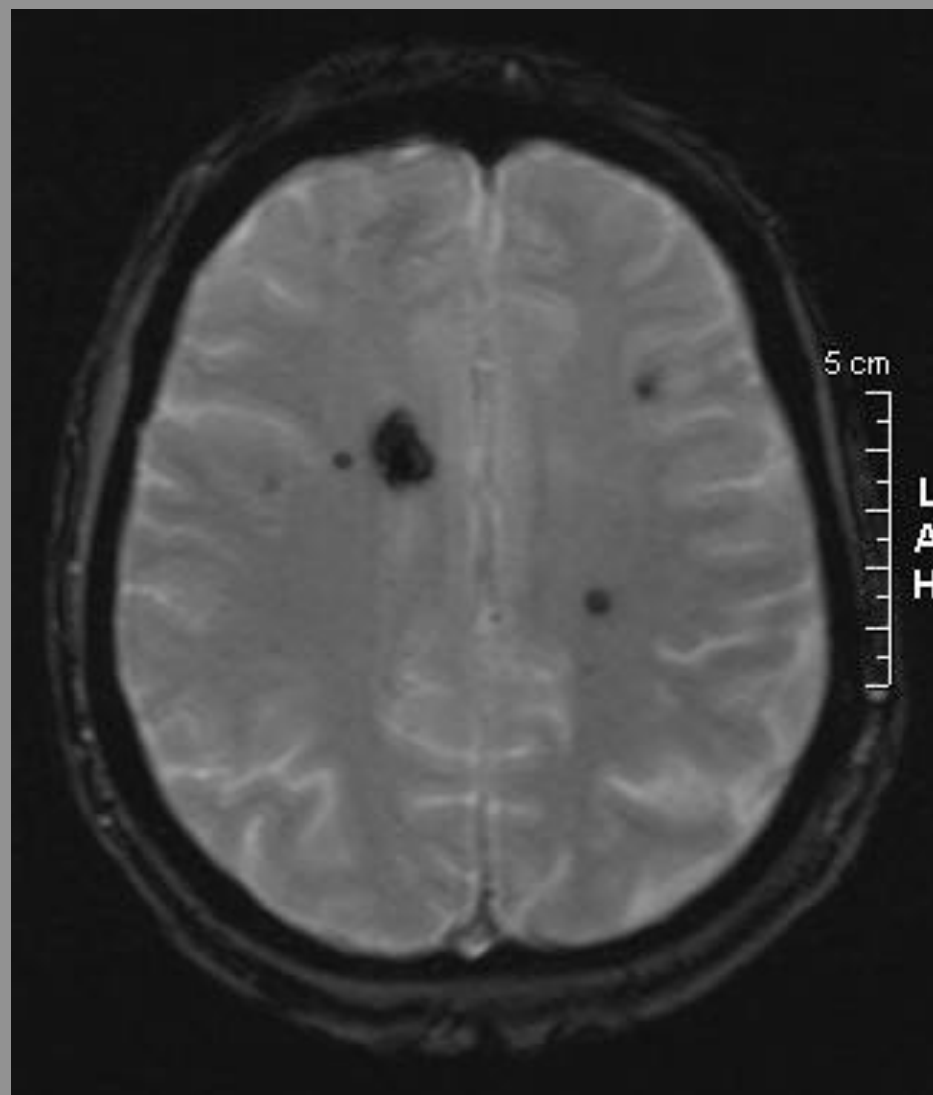
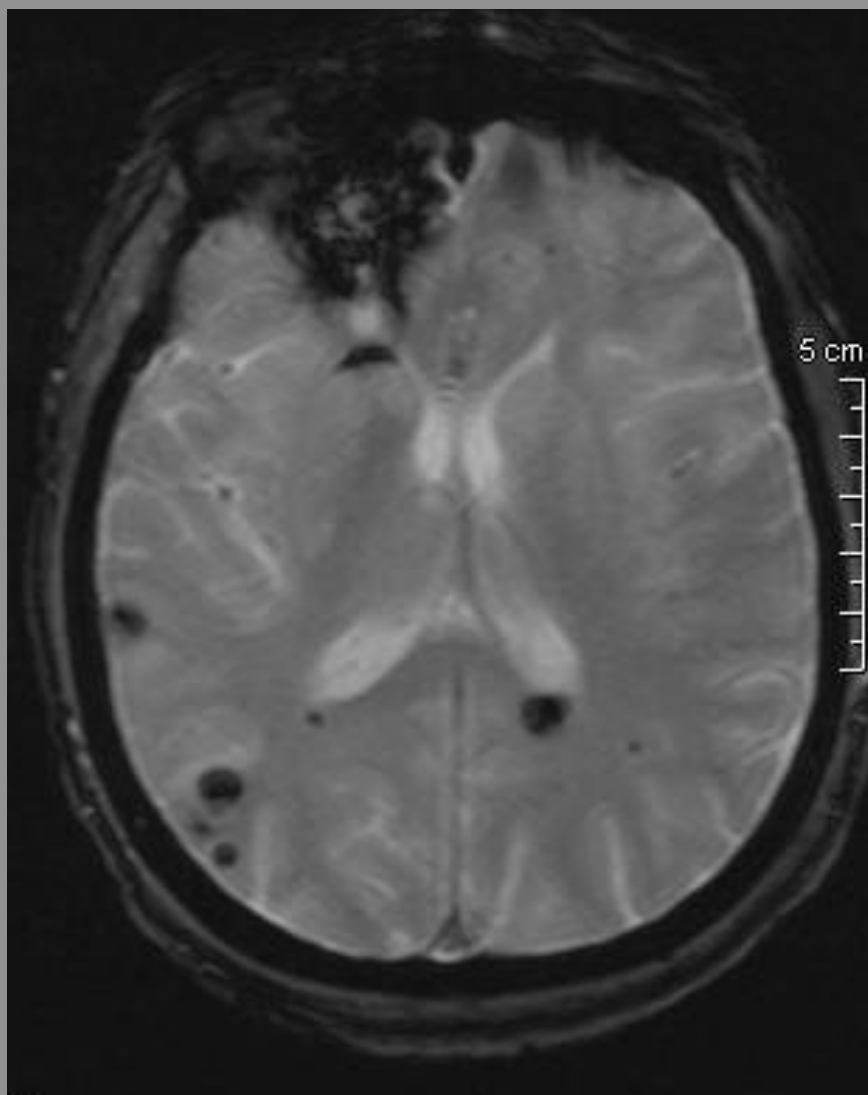
T2*



SWI



Cavernomatose cérébrale



SWI

- Zones riches en fer
NGC

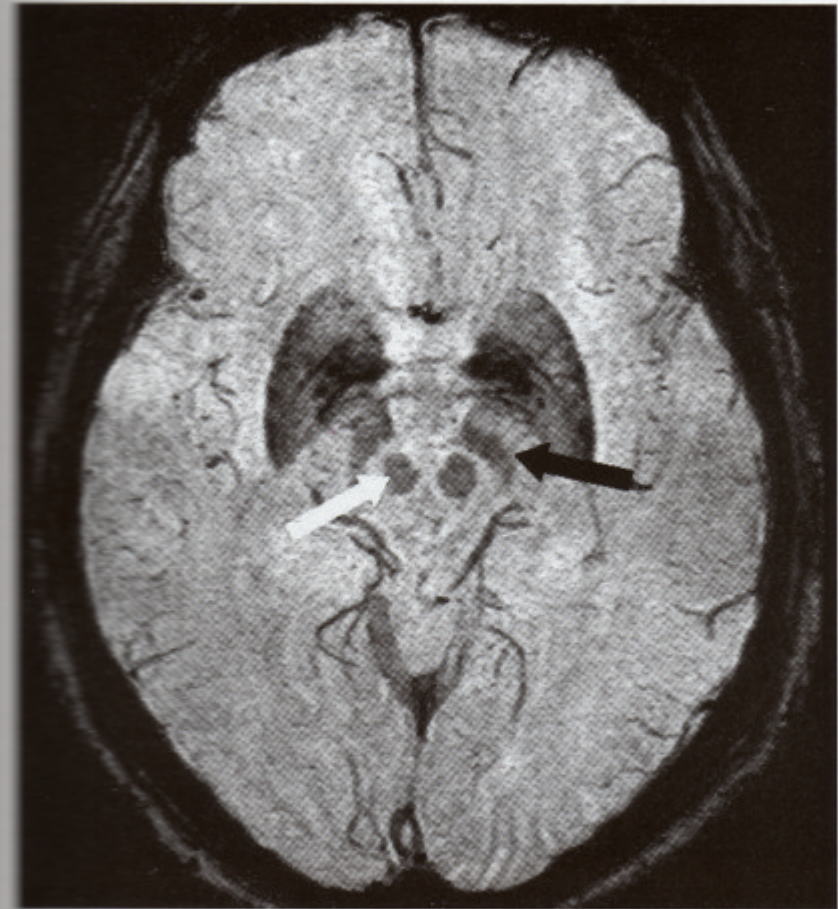
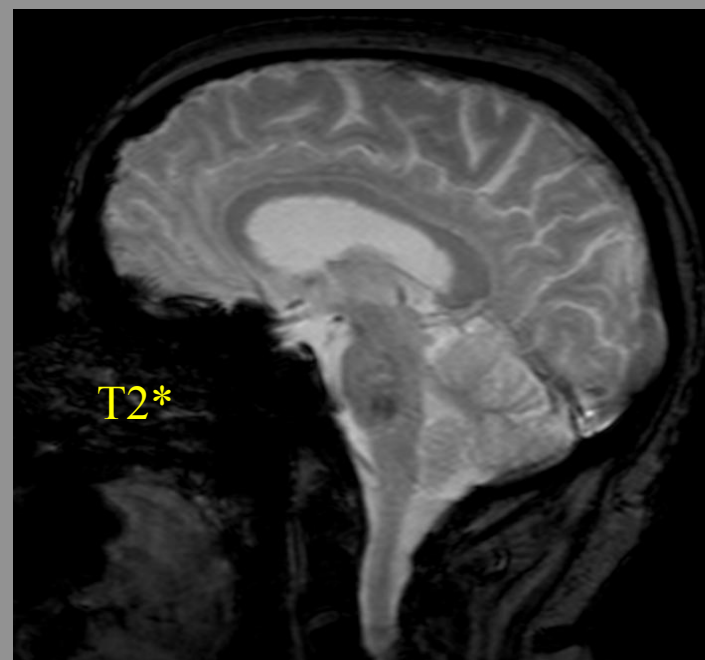
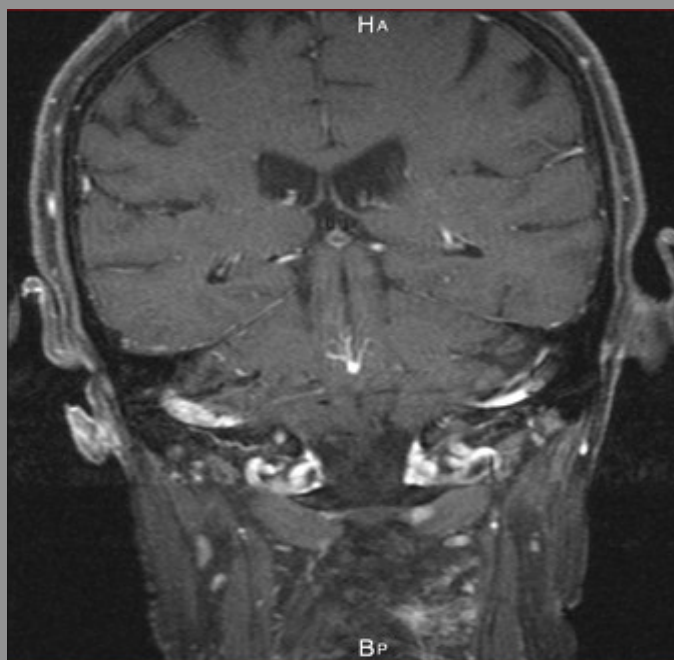
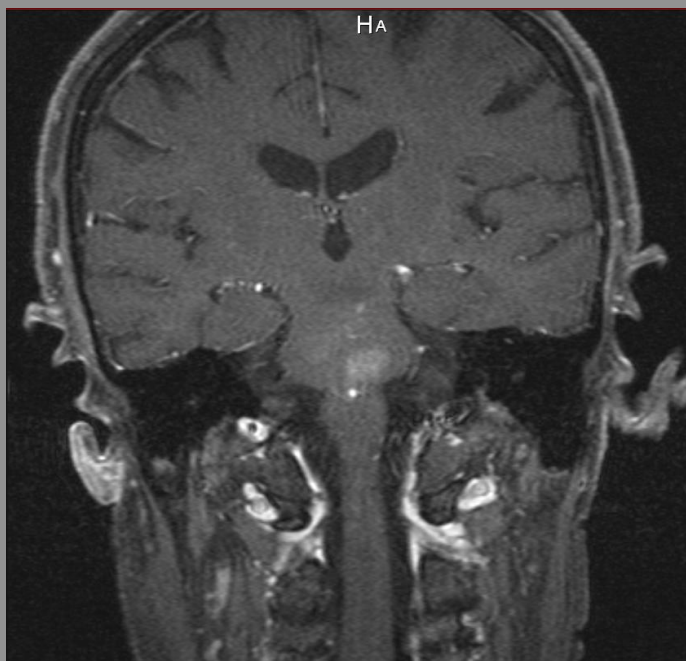


Fig. 4 : Visualisation des noyaux gris centraux en SWI : noyaux lenticulaires, noyaux rouges (flèche blanche) et substantia nigra (flèche noire).

Susceptibilité magnétique

- Calcium
- Air
- Hémosidérine
- Ferritine
- Mélanine
- Désoxy-hémoglobine

T1Gd



Diagnostic ?

- Imagerie flair normale
- Imagerie T1/T2 normales
- Rehaussement après gadolinium
- Hyposinal EG par effet de susceptibilité magnétique avec présence de désoxyhémoglobine

Diagnostic proposé

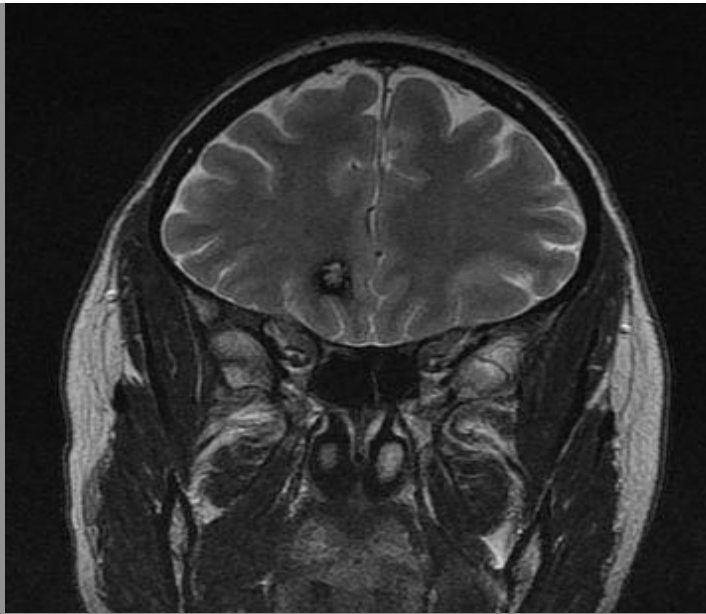
- Télangiectasies du tronc cérébral
- Pseudo-angiome veineux

Fréquence des télangiectasies

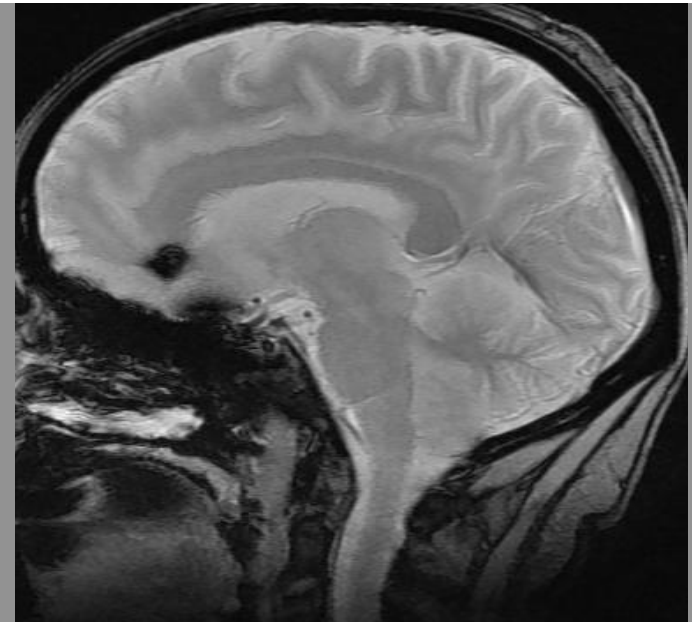
- 0,4 % à l'autopsie
- 80 % au niveau du tronc cérébral
- 25 % d'anomalies associées à type d'angiome et cavernome
- Anomalie unique

Imagerie des télangiectasies

- Invisible en artériographie
- Invisible en TDM sans **injection**
- Invisible en IRM sans injection sauf **EG**
- Invisible en IRM in vitro de pièces anatomiques



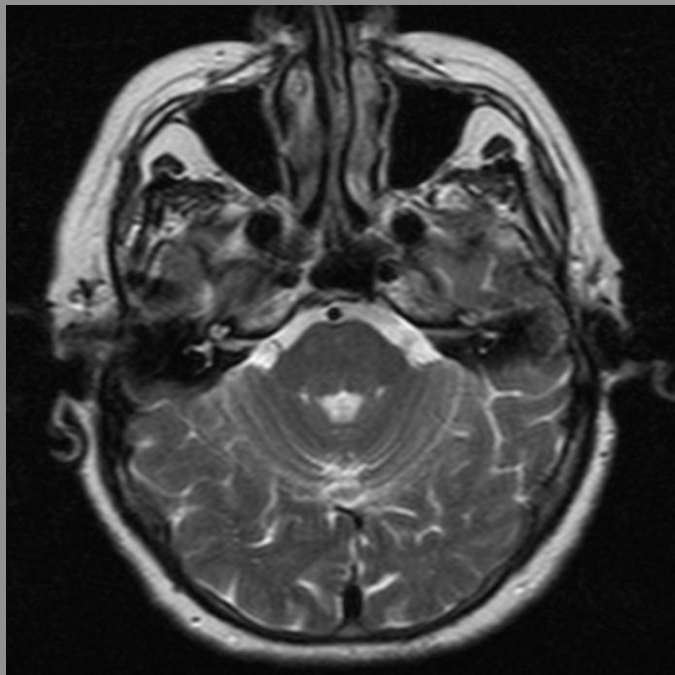
Cavernome



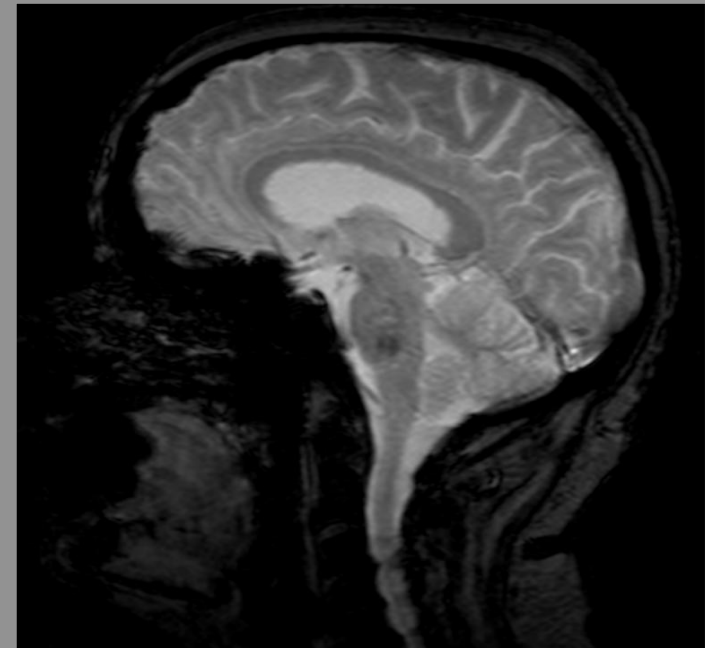
T2

Les cavernomes sont visibles sur les séquences classiques

EG



Télangiectasie



Télangiectasies

- Vaisseaux de type capillaire
- Pas de gliose
- Pas de calcification ni hemosidérine
- Pas d'effet T1/T2
- EG +

cavernomes

- Vaisseaux complexes avec paroi discontinue
- Distorsion parenchyme
Îlots résiduels neuroglie
- Hyalinisation
calcification
hemosidérine
- Effet T2
- EG+++

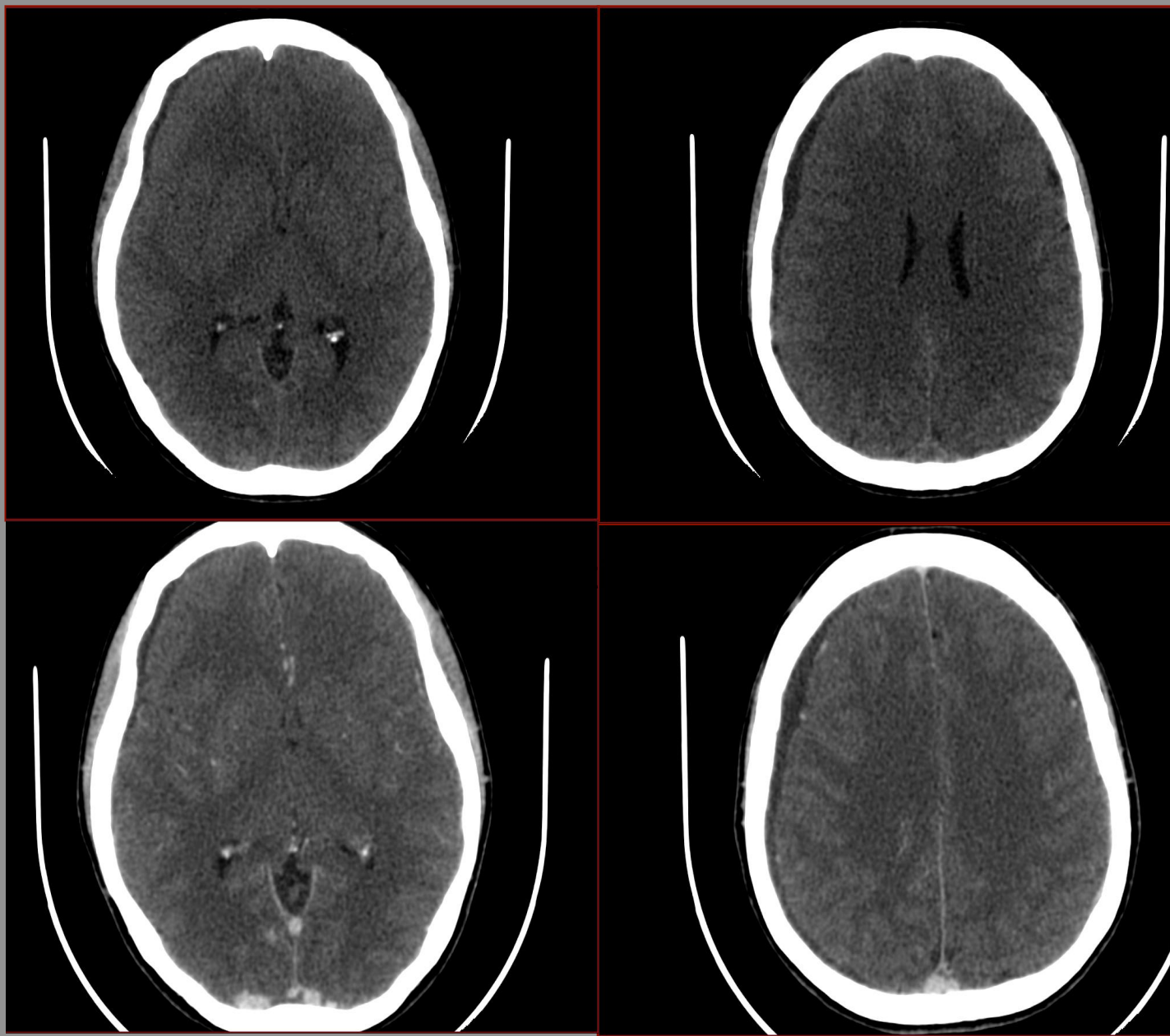
Susceptibilité magnétique

- Calcium
- Air
- Mélanine
- Hémosidérine
- Ferritine
- Désoxyhémoglobine

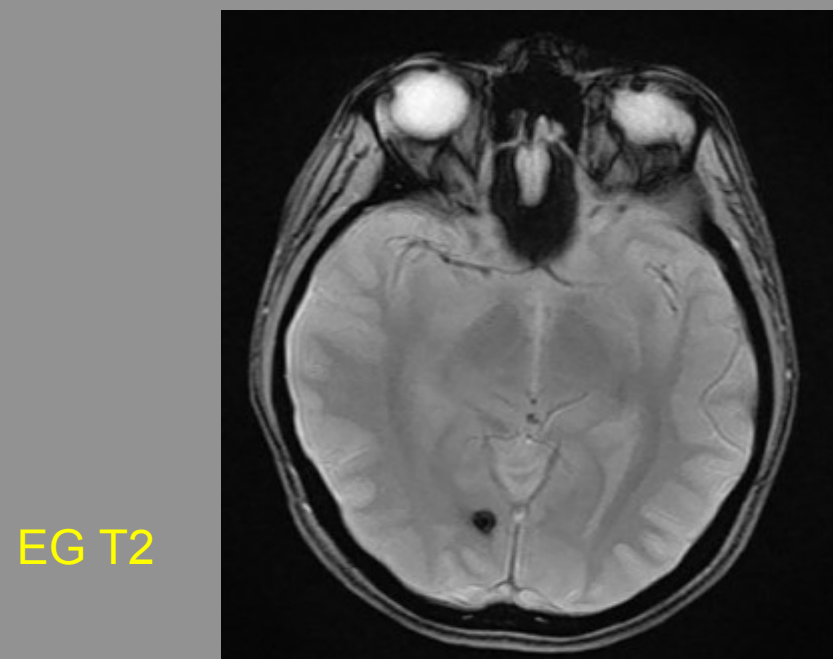
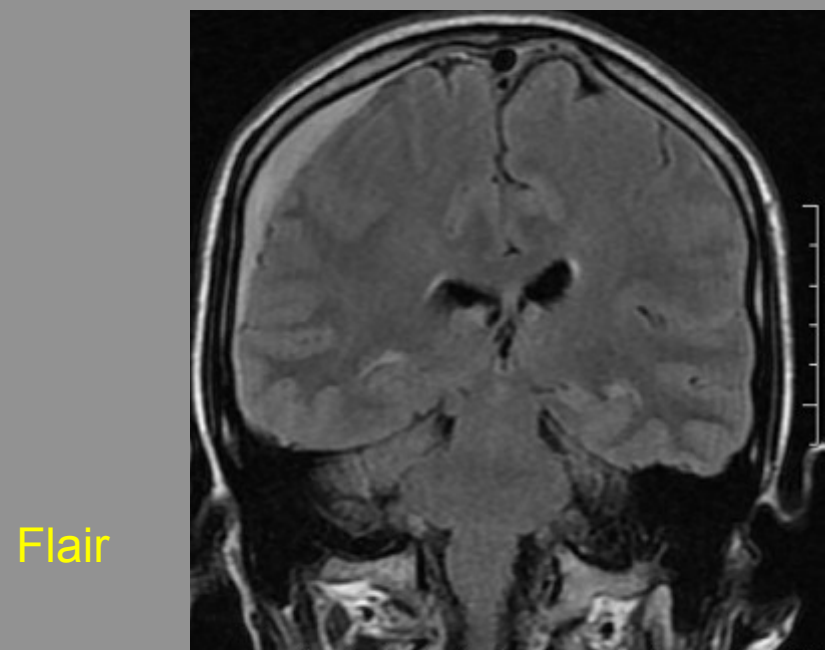
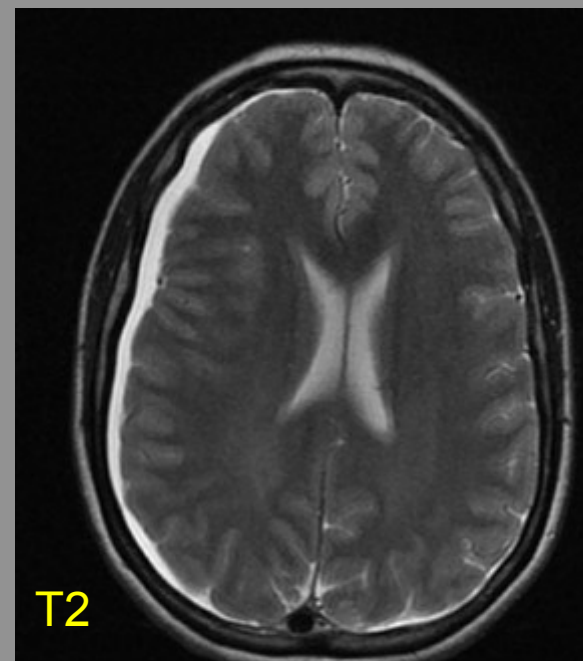
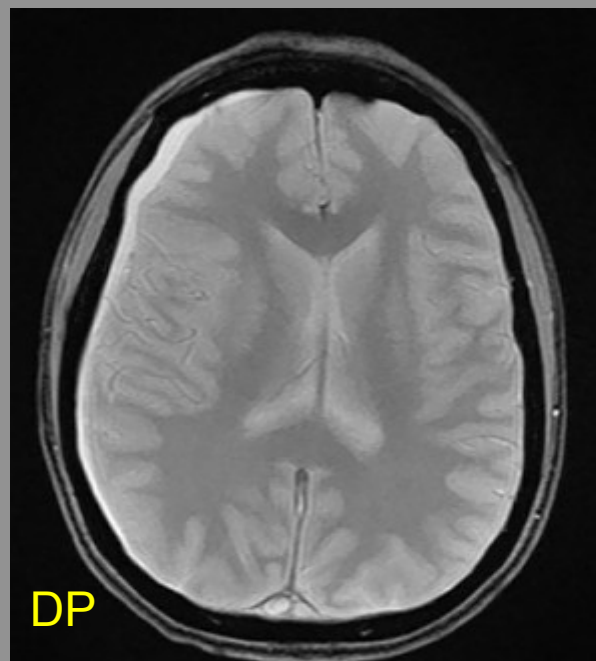
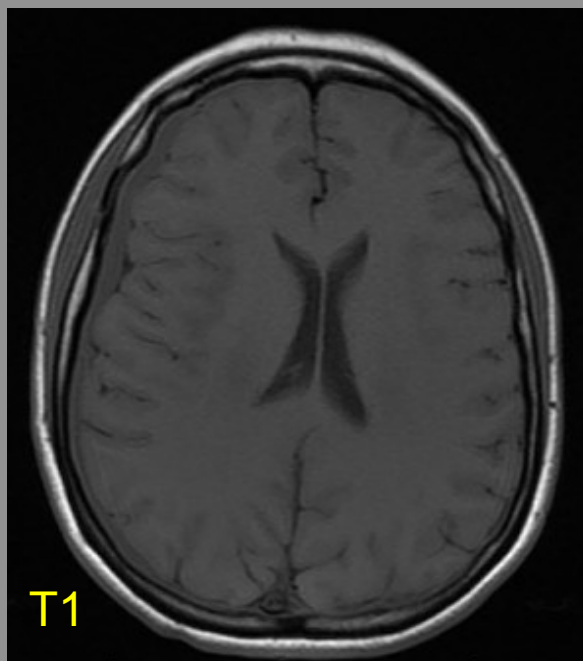
CAS

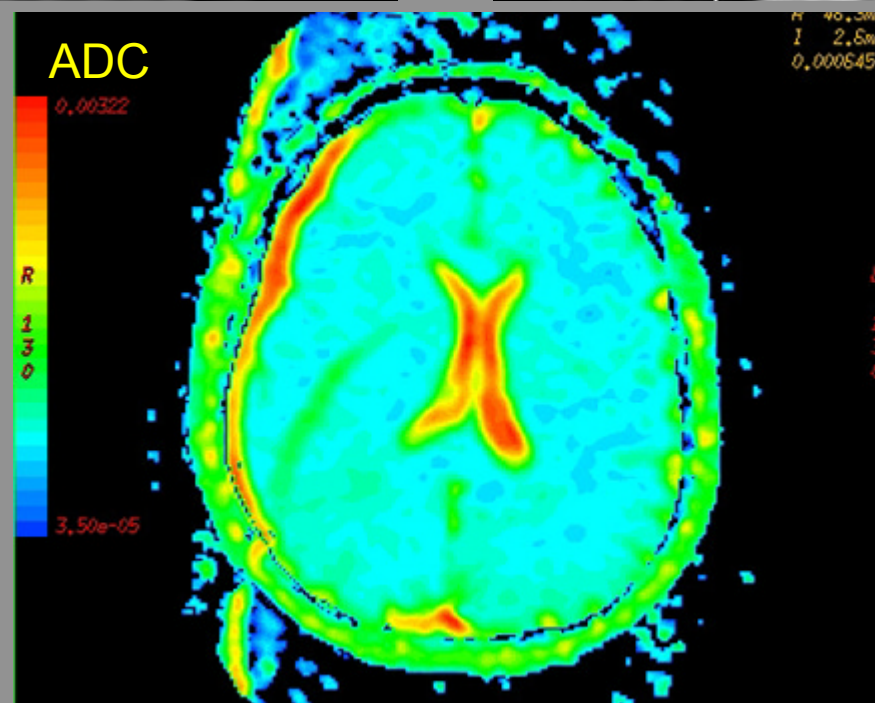
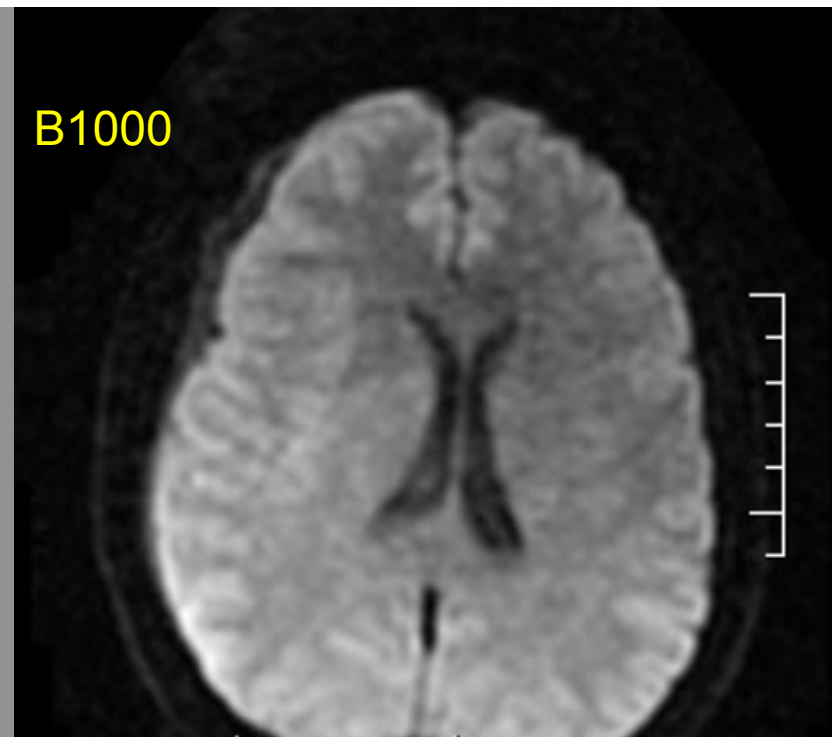
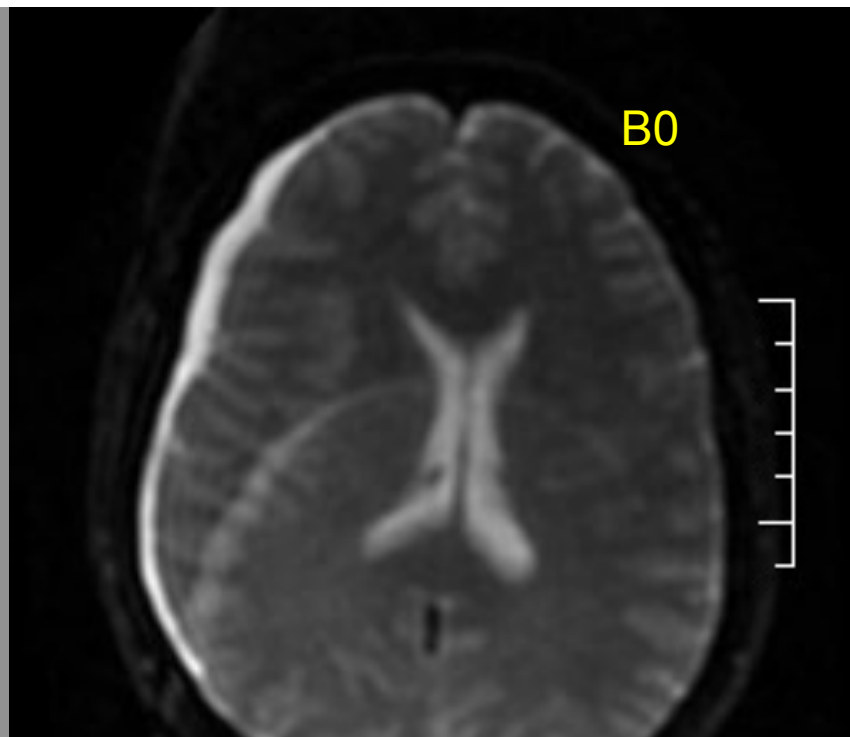
- Femme de 39 ans
- Céphalées invalidantes, rachialgies
- Antécédents de méningite à méningocoques en 1986

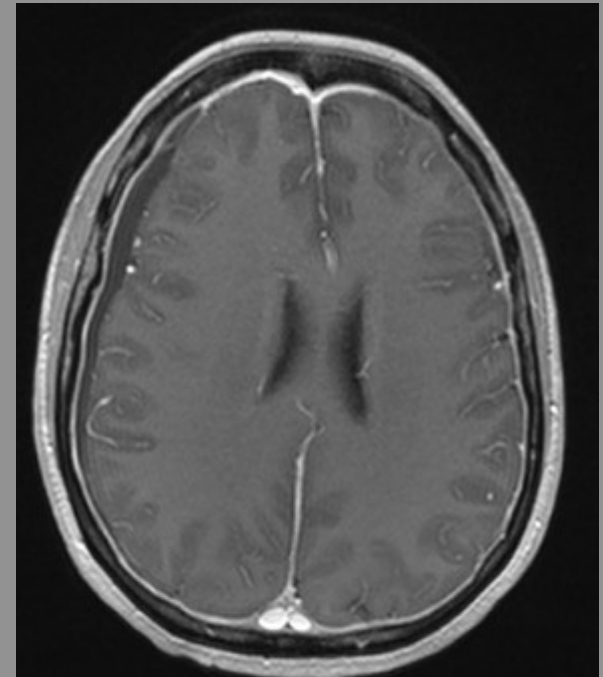
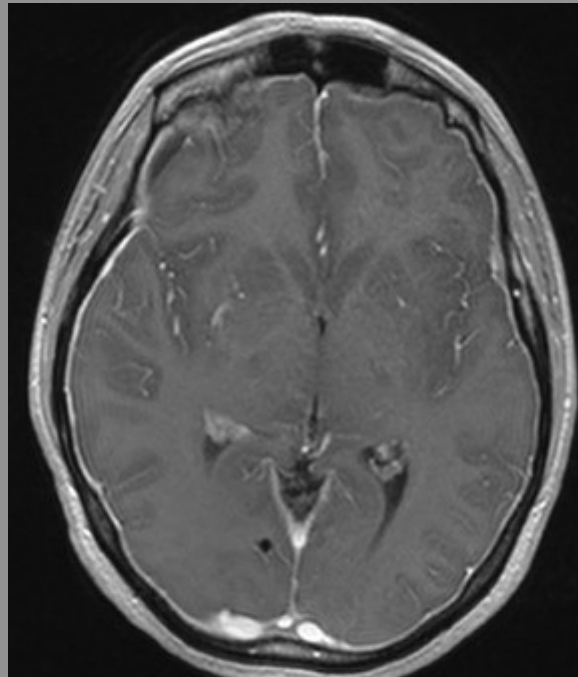
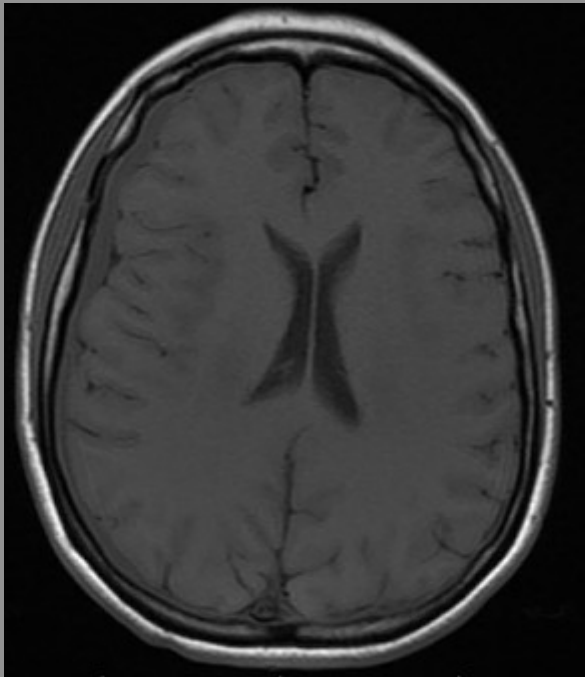
TDM
15 / 12



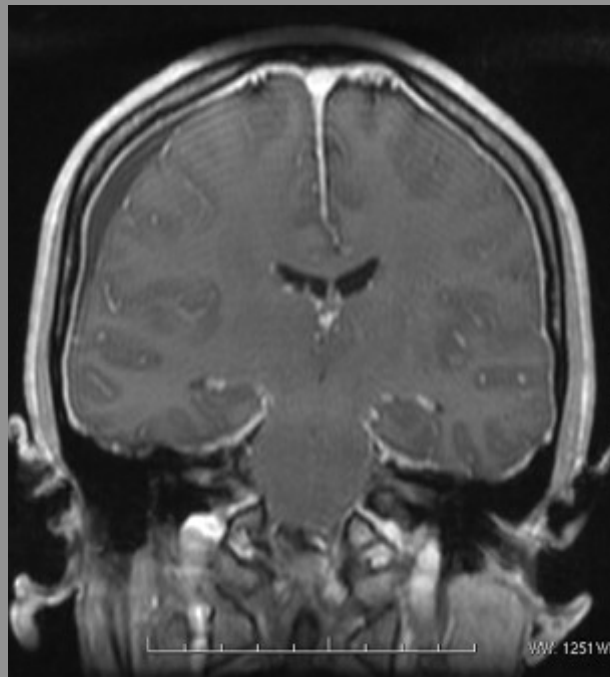
- Diagnostic d' HSD chronique
- Patiente vue par un neurologue qui conseille une IRM sans urgence







Syndrôme d' hypotension intra-crânienne



Hypotension intra-crânienne

Pression LCS < 60 mm H₂O

Chute:- de pression

- de volume

Baisse de production ou fuite:

- Iatrogène / ponction

- Valve

- Post-traumatique

- Spontanée: rocher, diverticule, gaine

Signes radiologiques

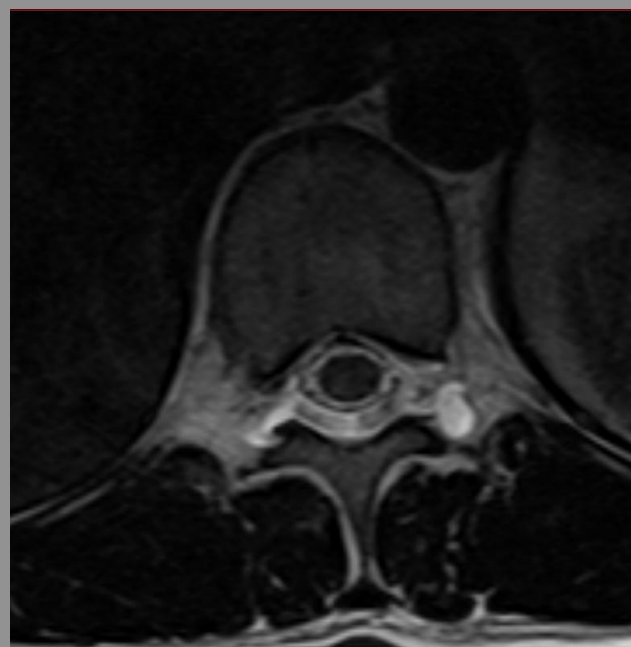
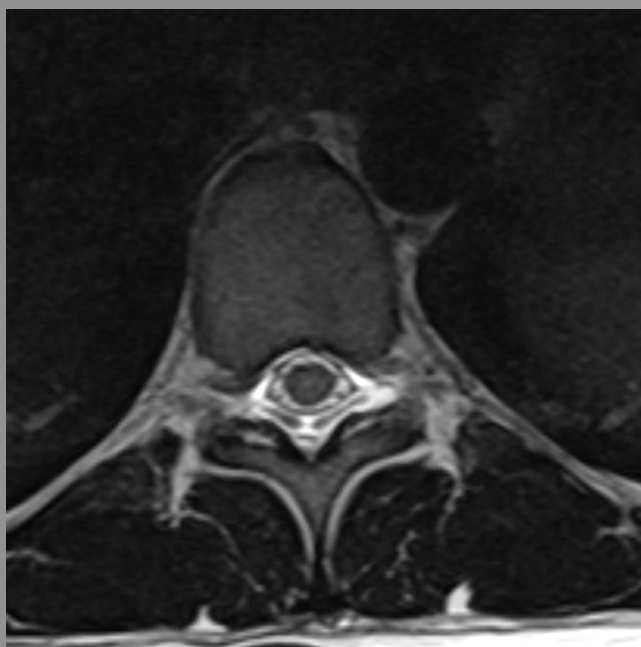
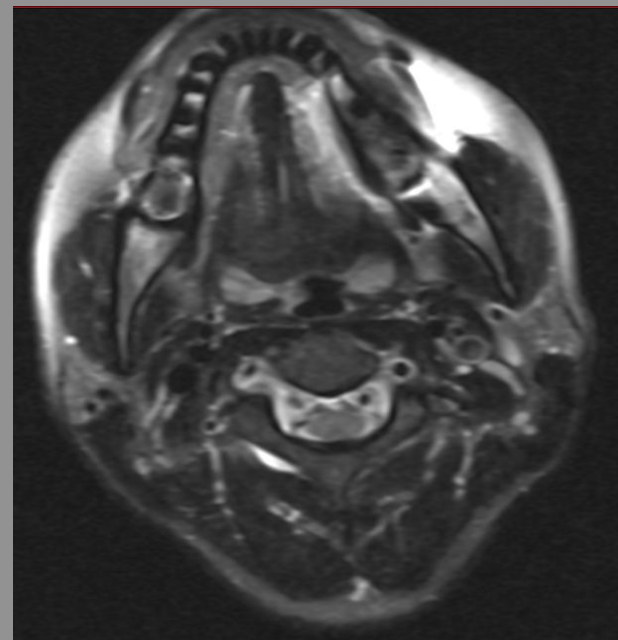
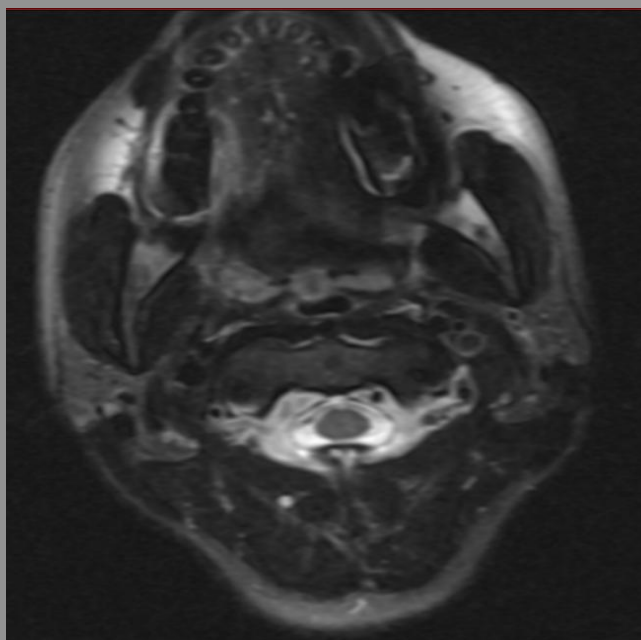
- Abaissement amygdalien
- Prise de contraste méningée
- Collections sous-durales
- Dilatation des plexus veineux péri rachidiens
- Collections péri médullaires et des parties molles (C1 / C2 ++++)

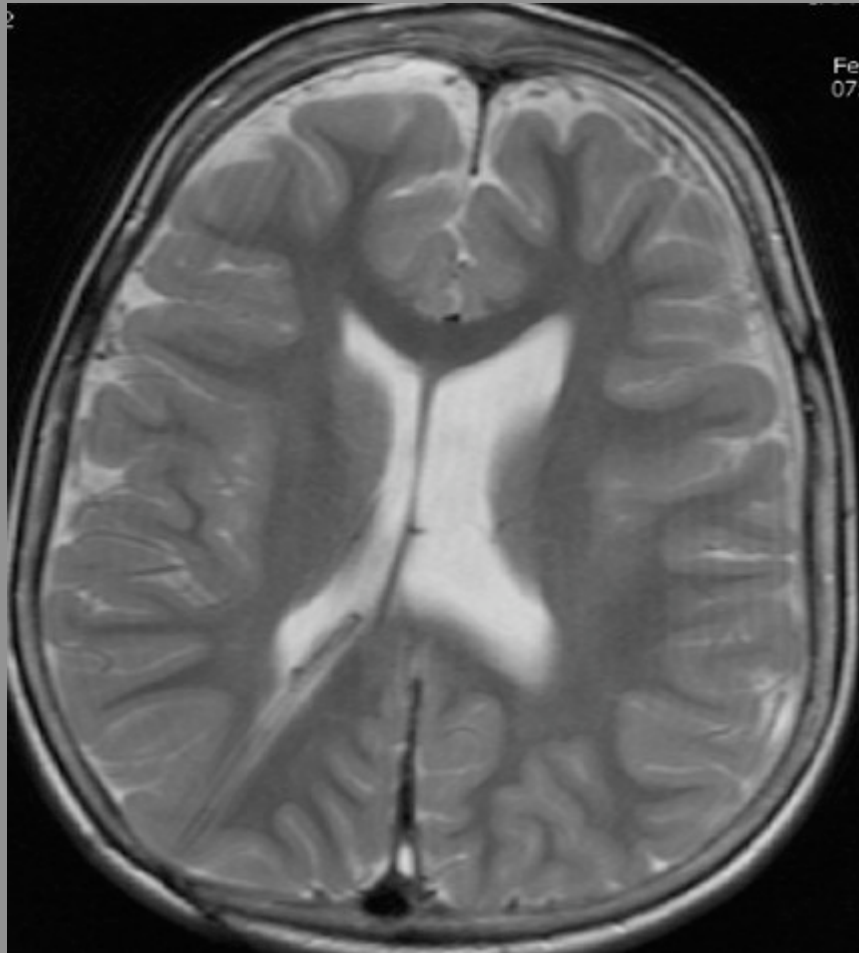
Clinique

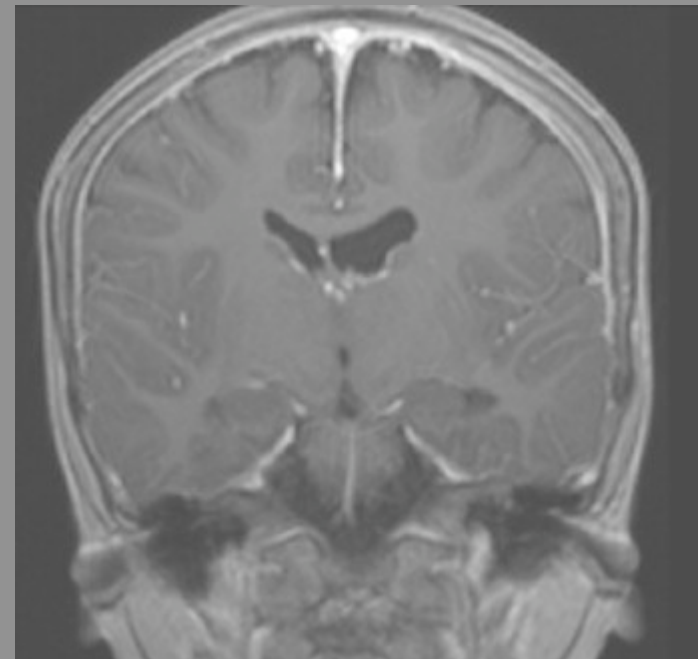
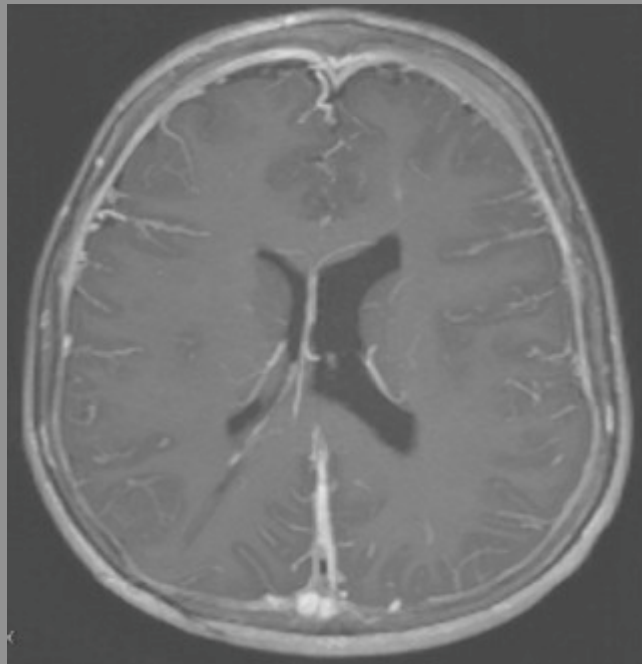
- Céphalées orthostatiques
- Nausées, vomissements, diplopie
- rachialgies

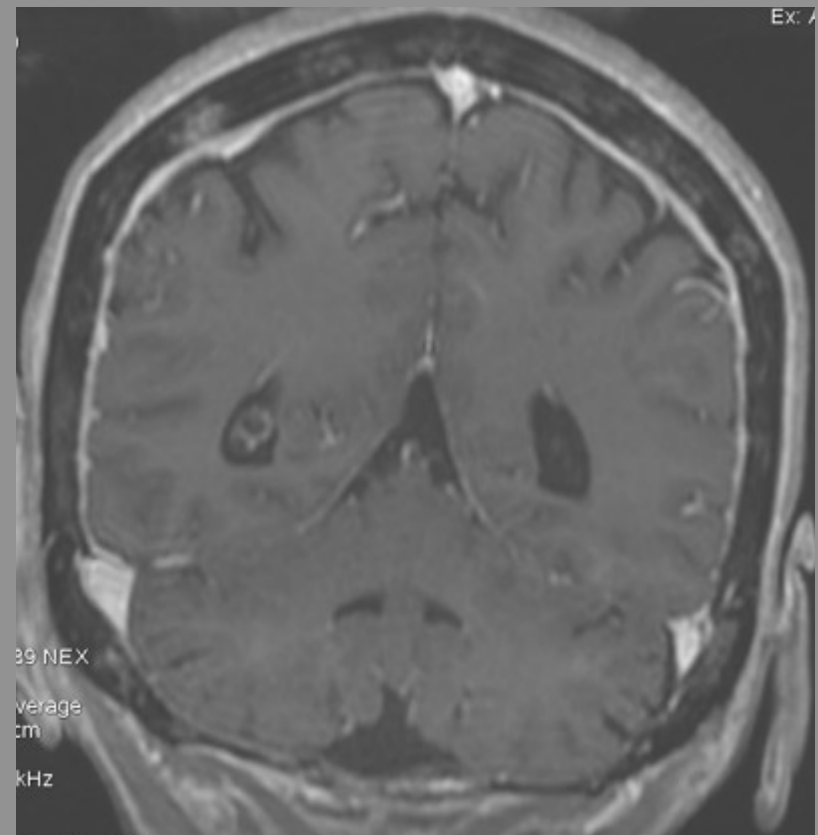
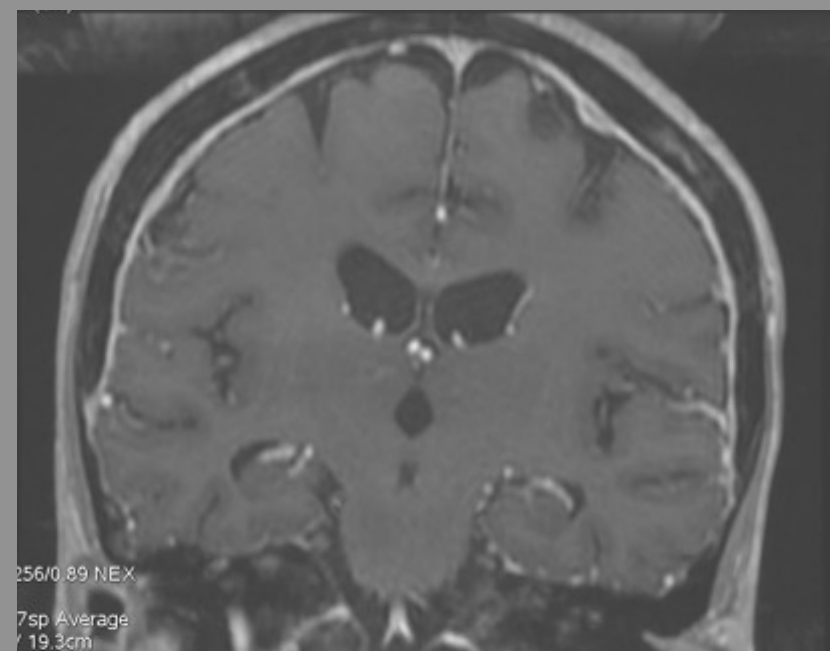






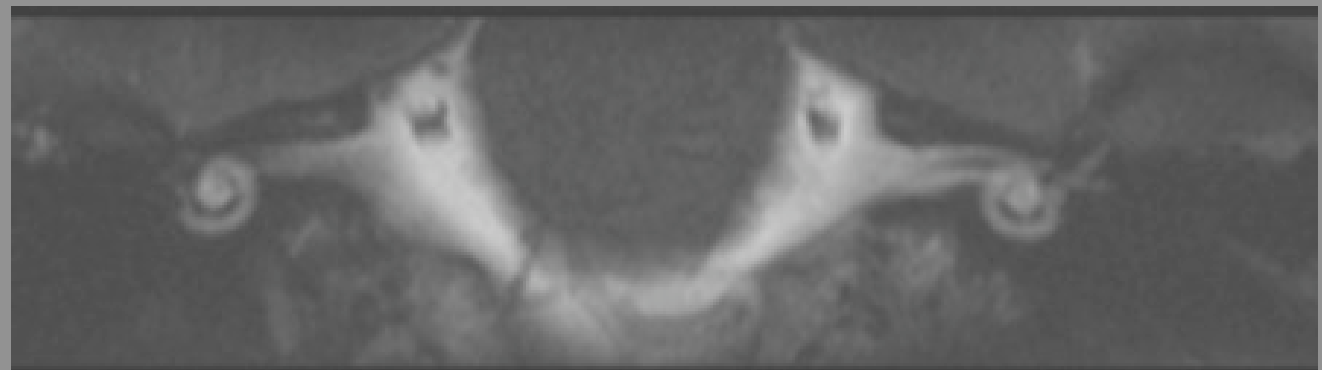


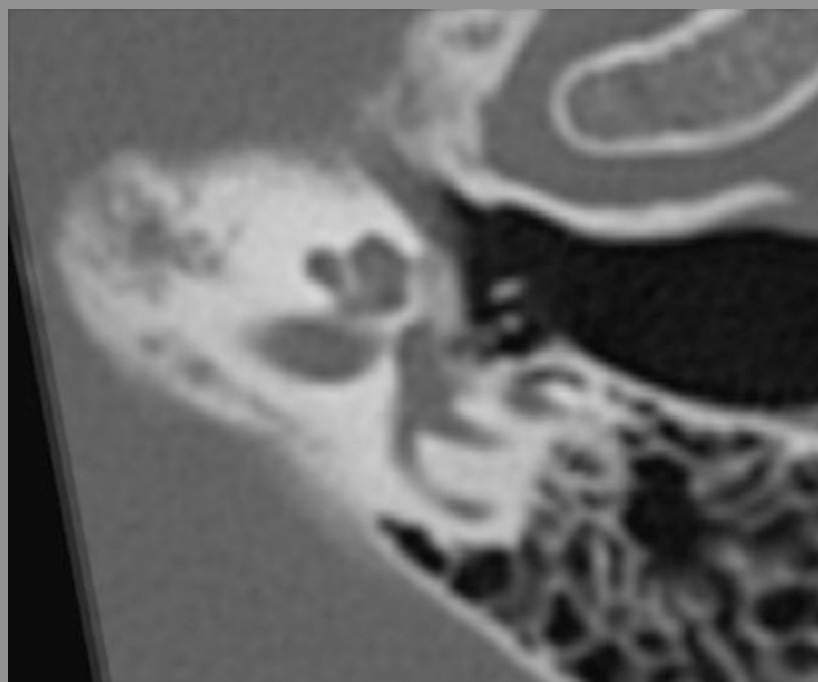
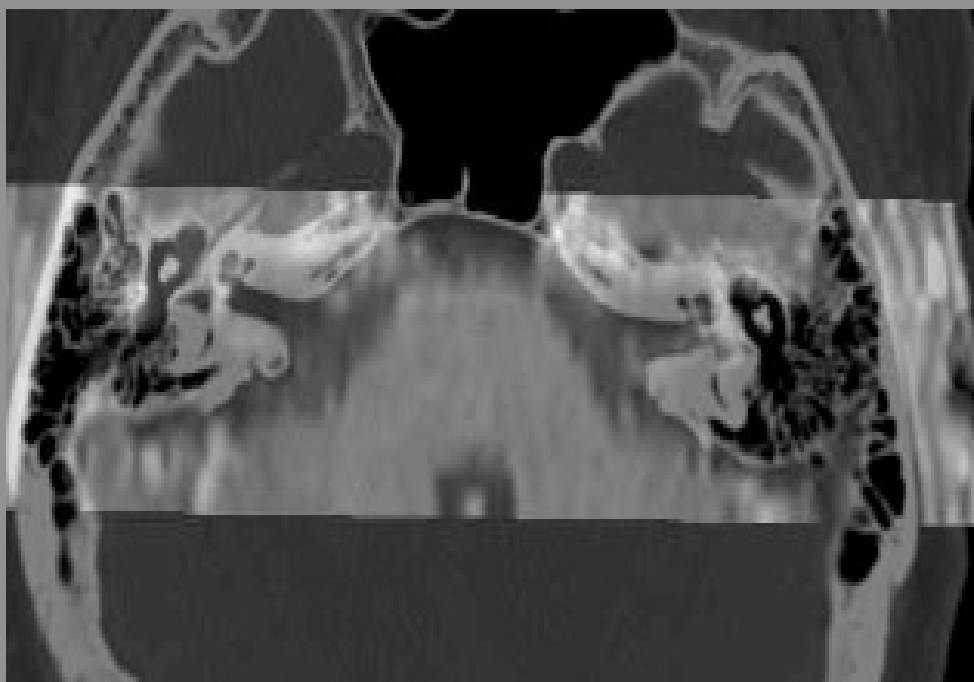
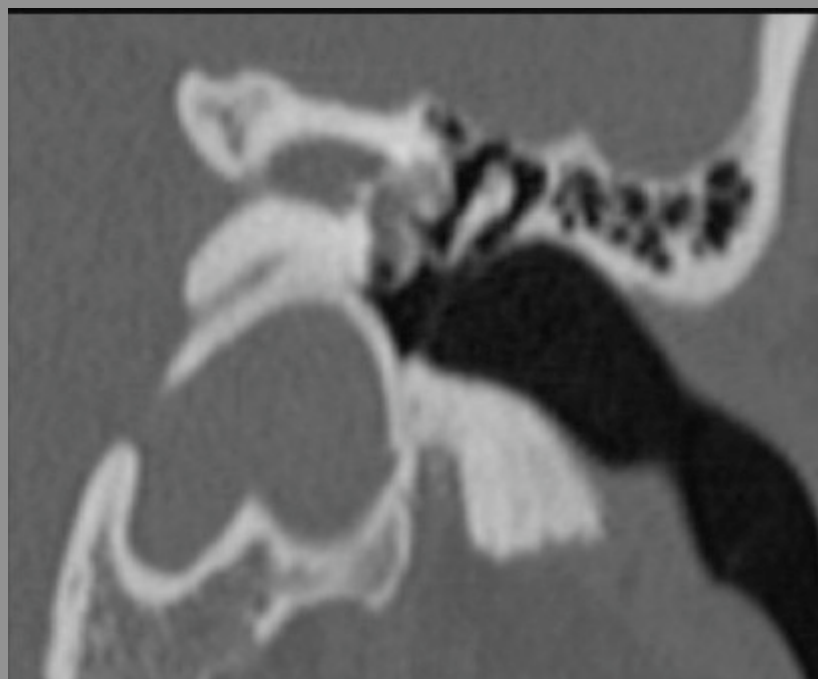
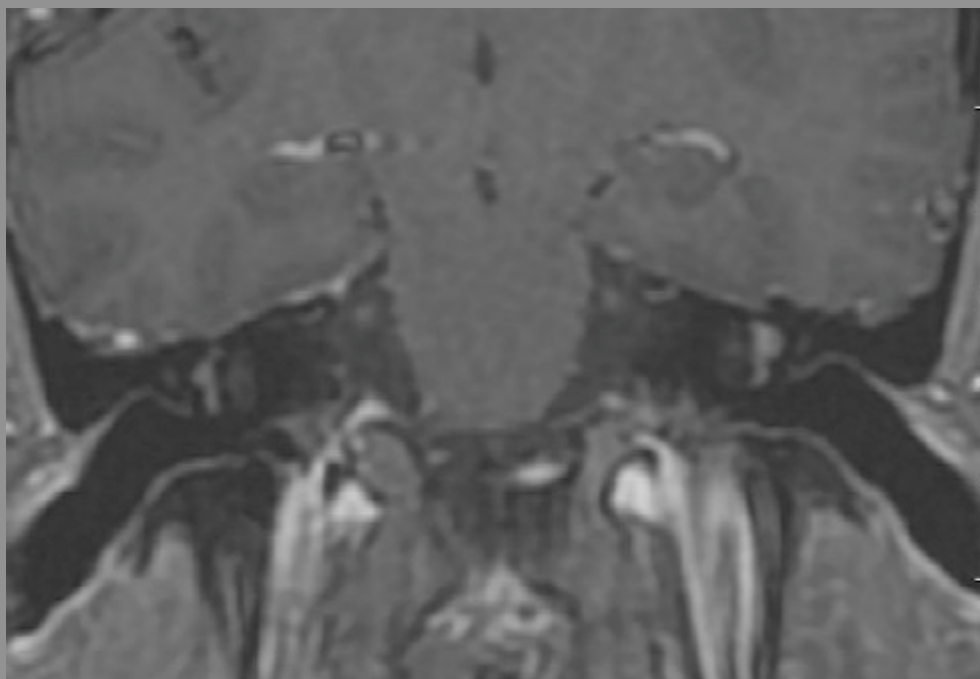




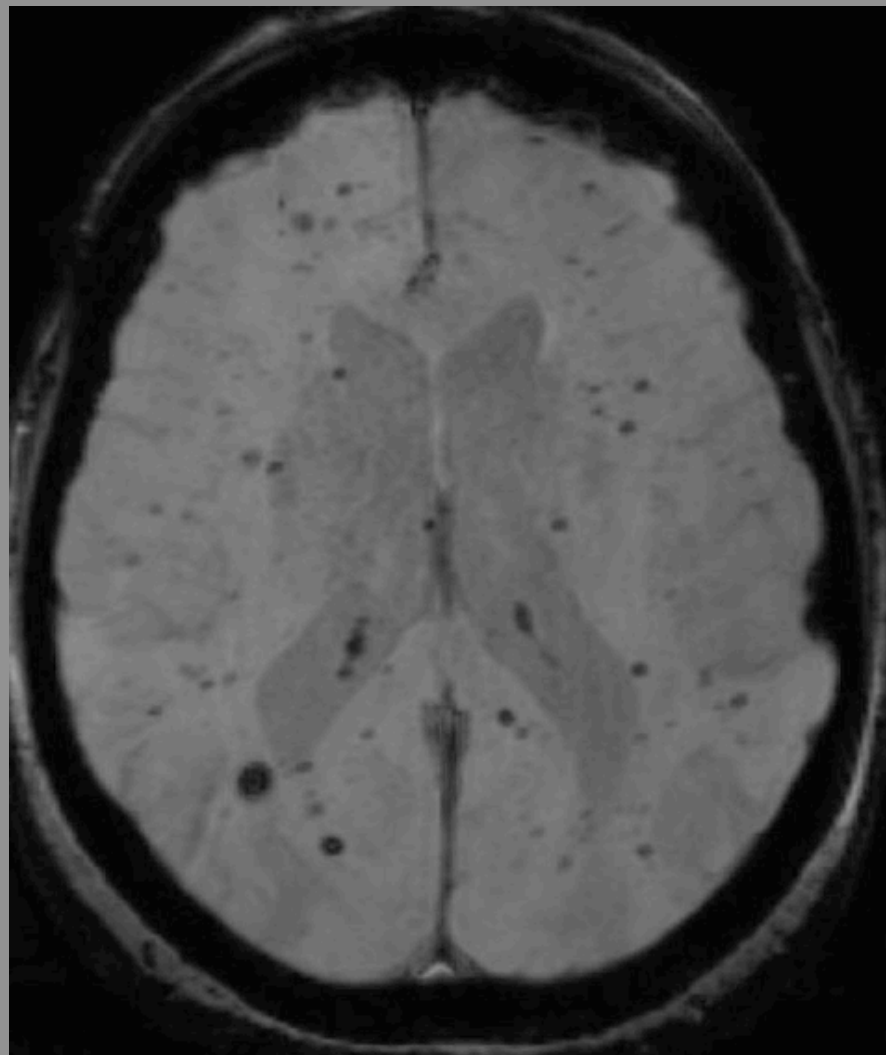
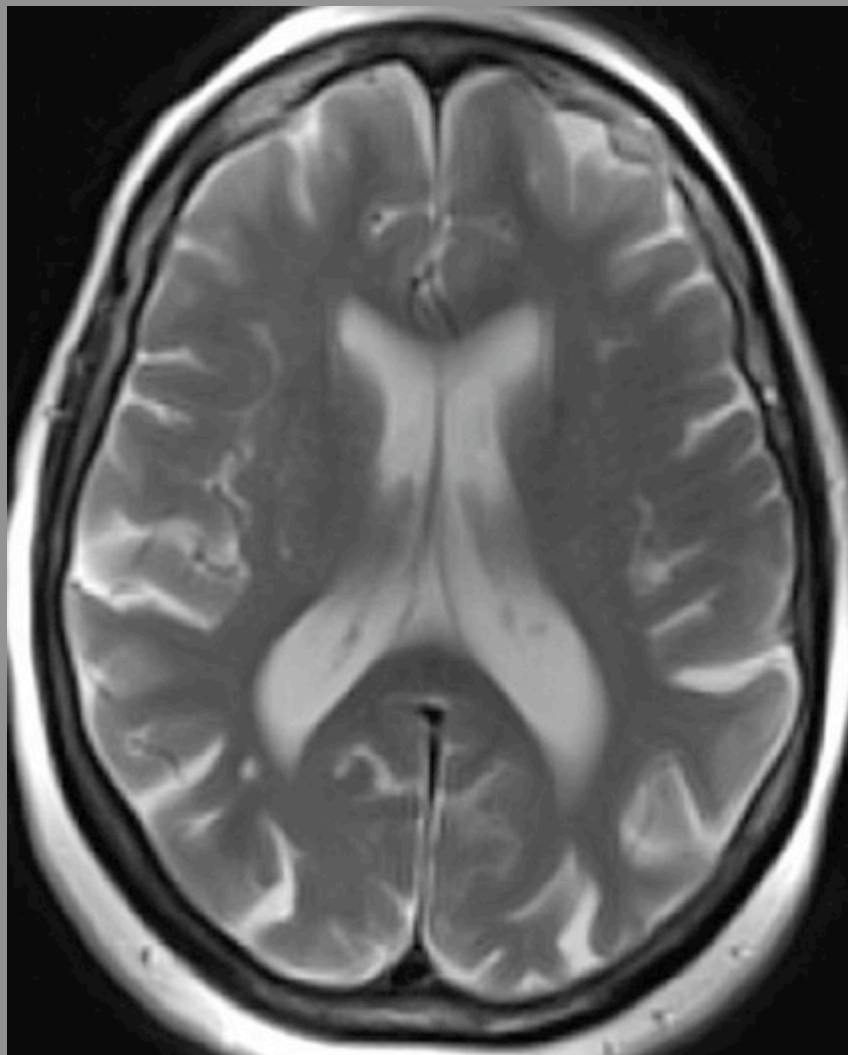


- 57 ans surdit 
- Atteinte PEA





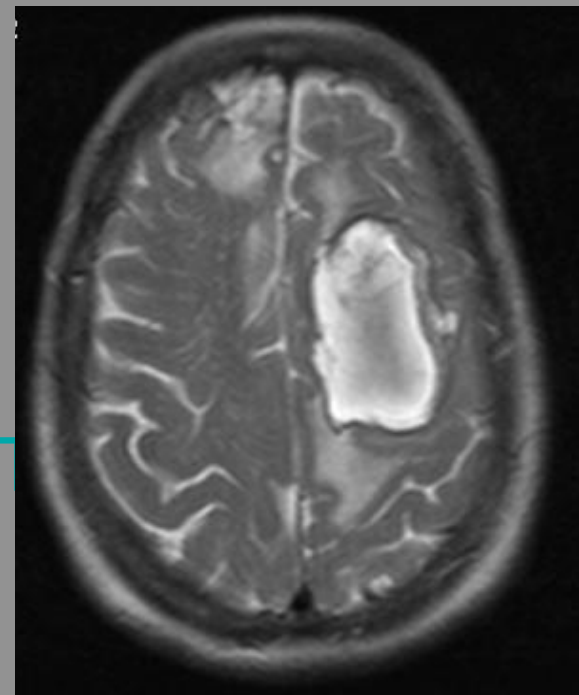
77 ans atteinte cognitive



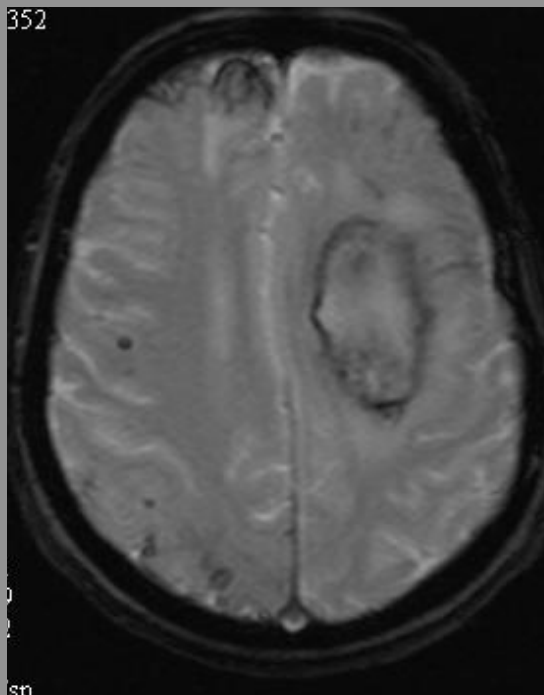
T1



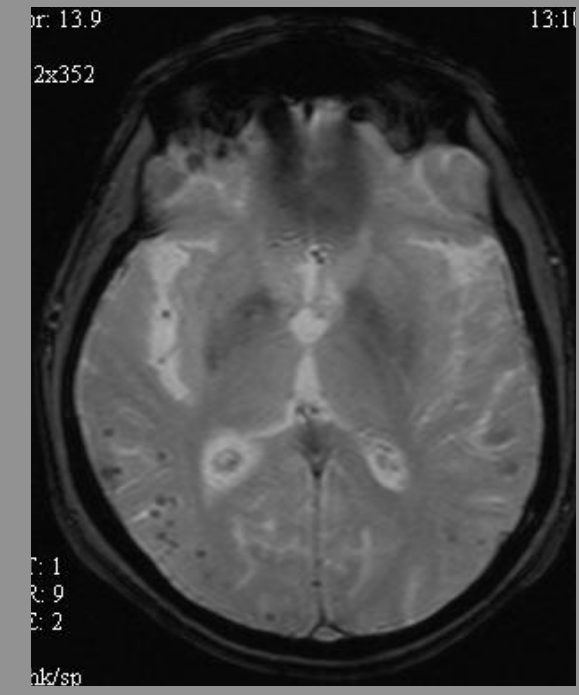
T2

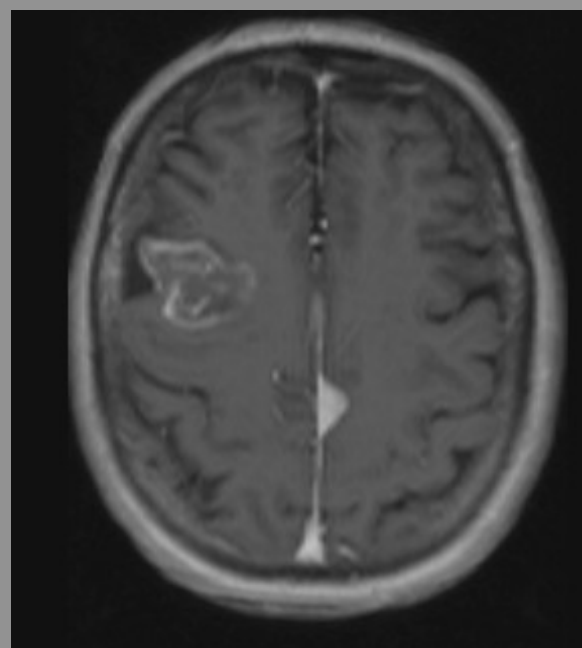
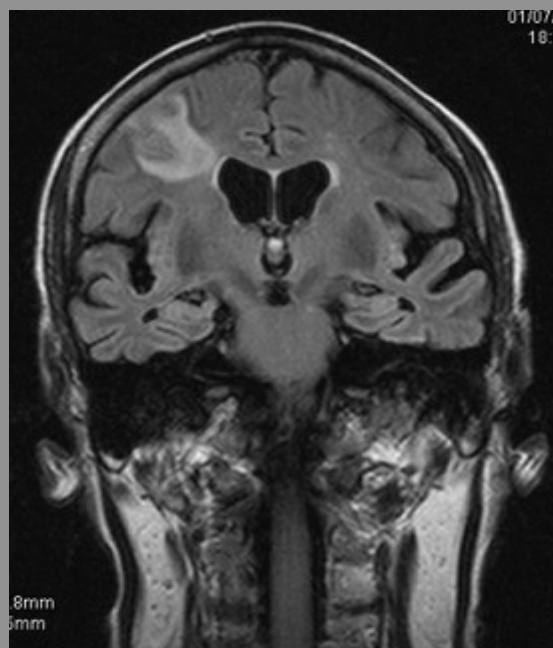
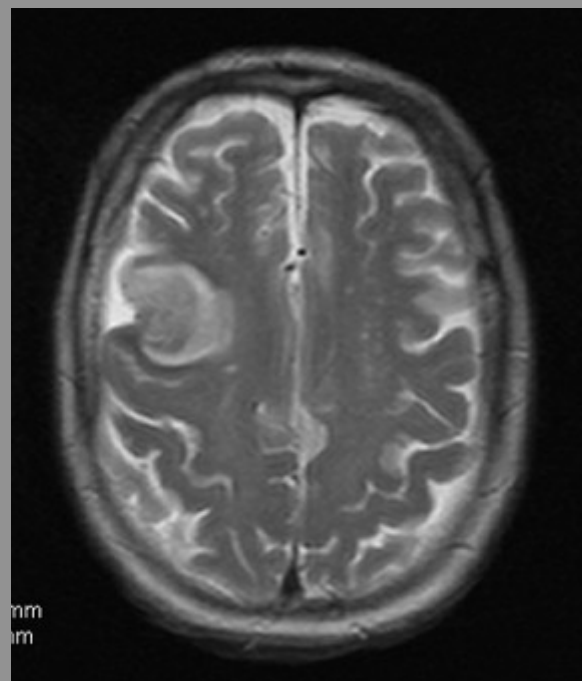
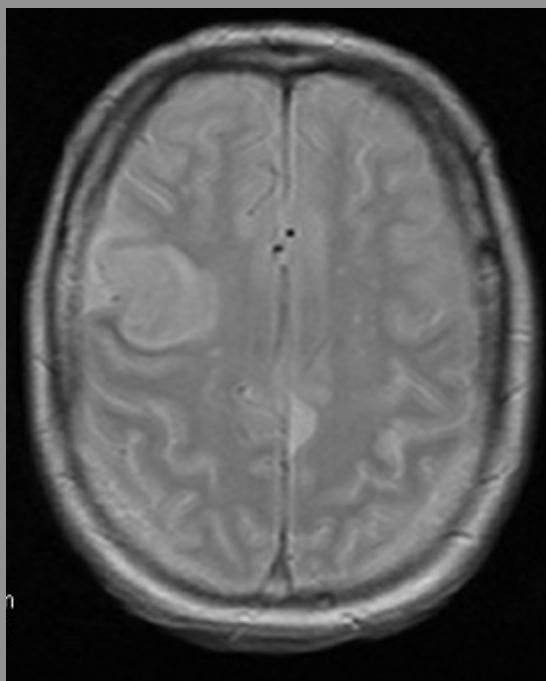


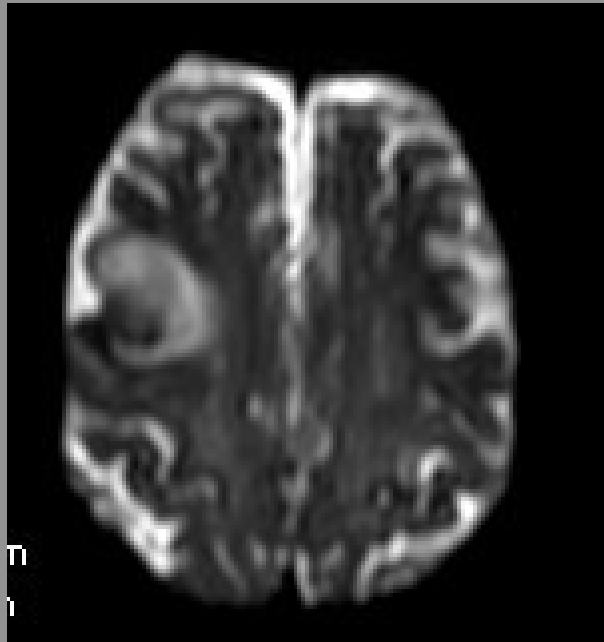
T2*



T2*



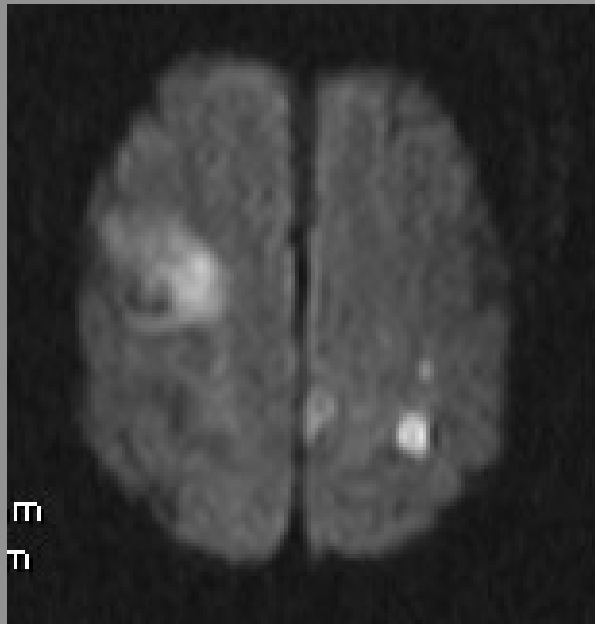
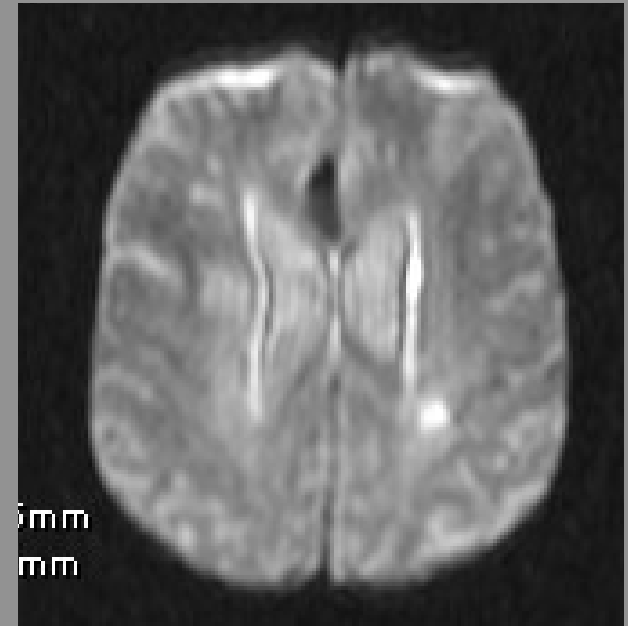




B0

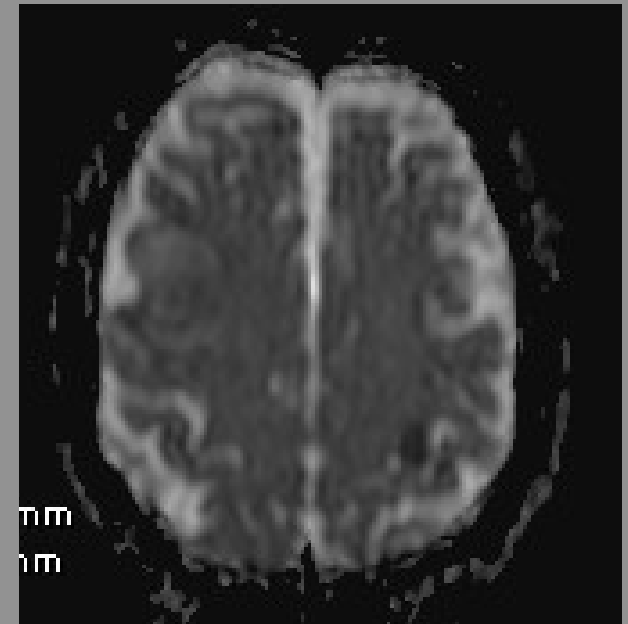
DWI

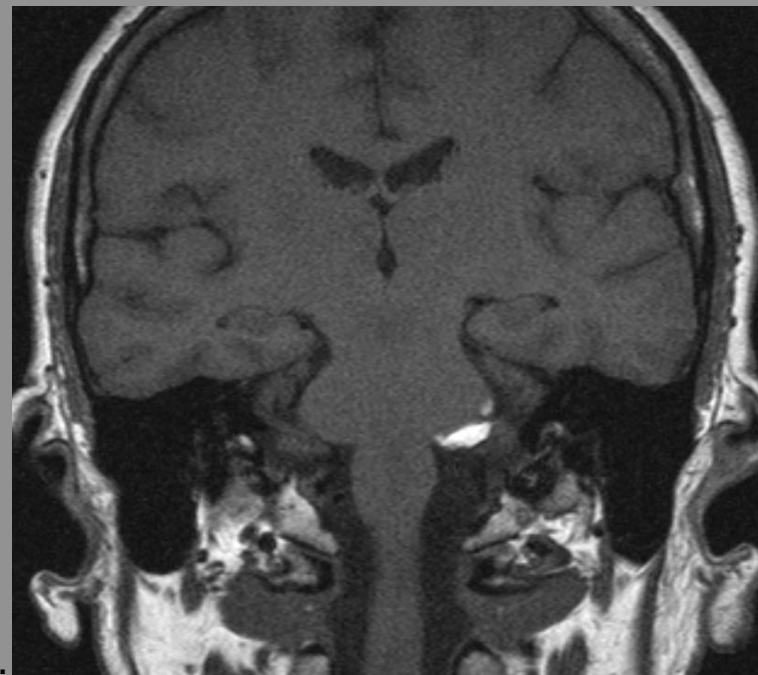
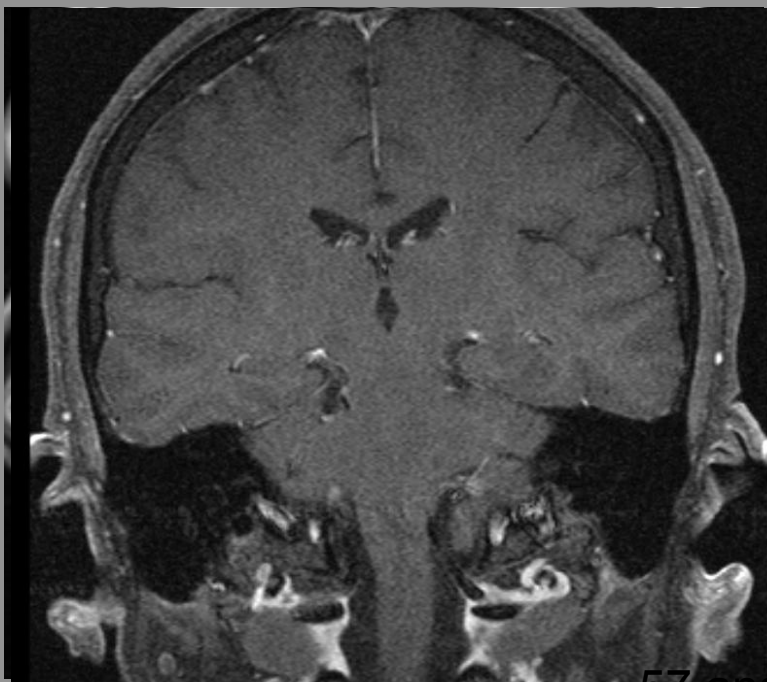
B500



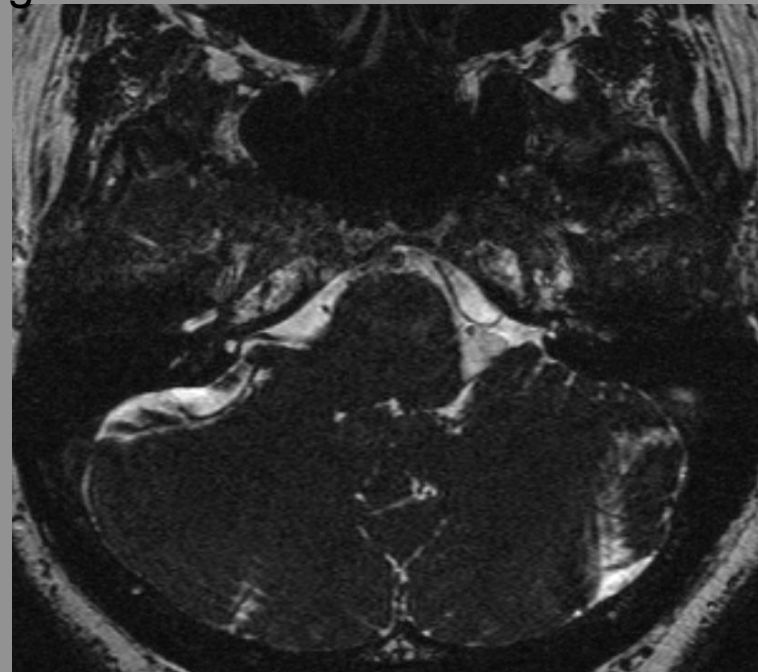
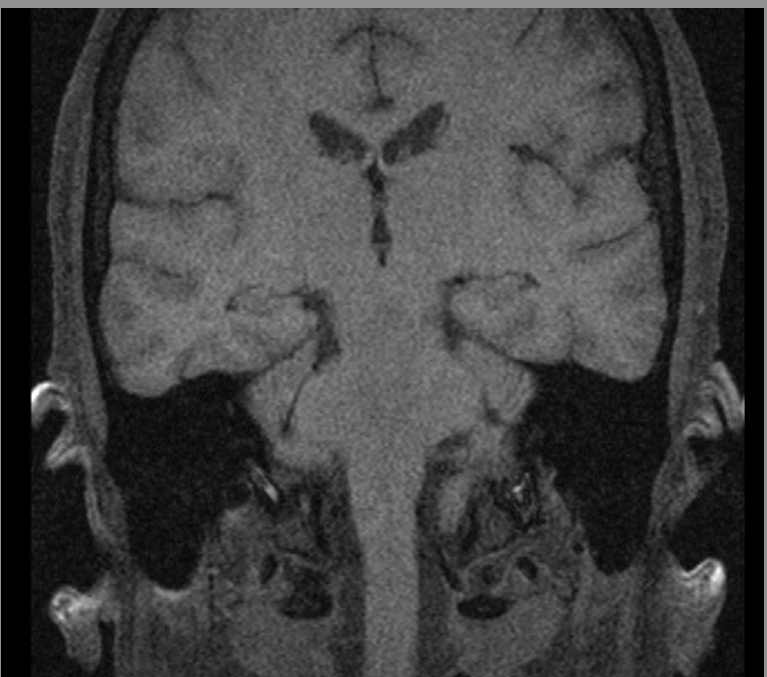
B1000

ADC

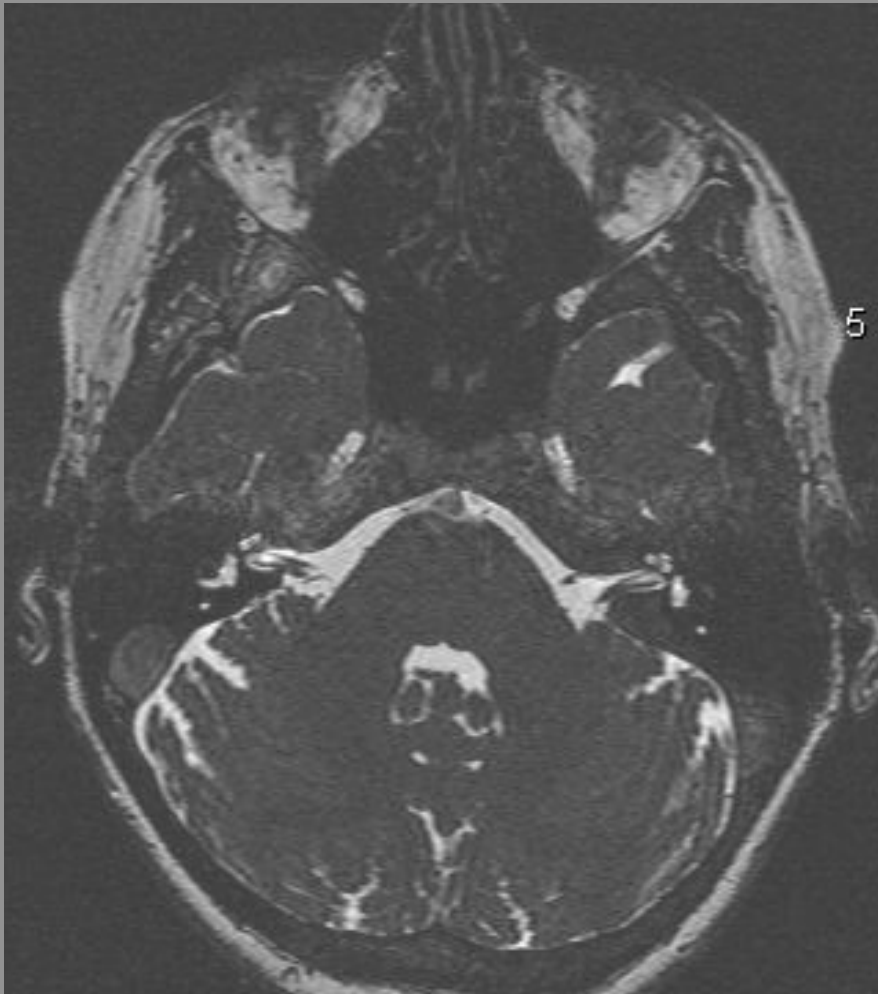




57 ans vertiges

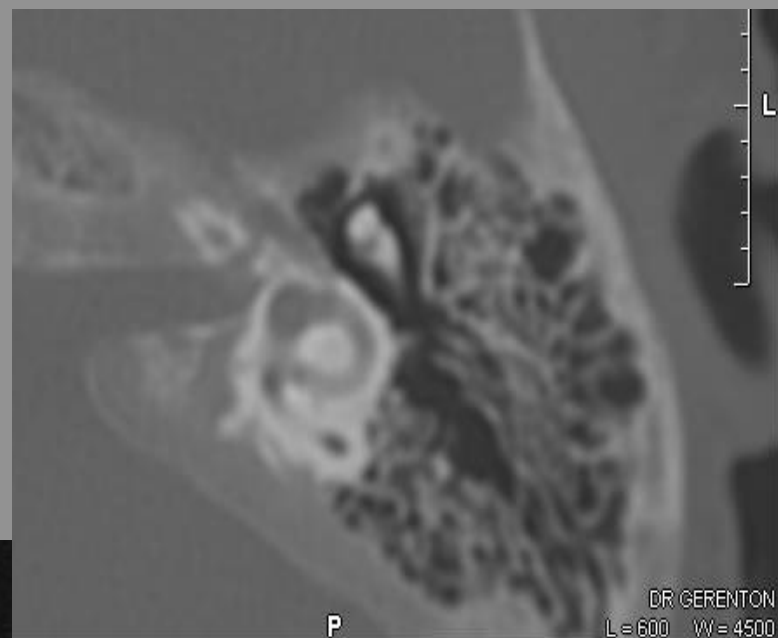
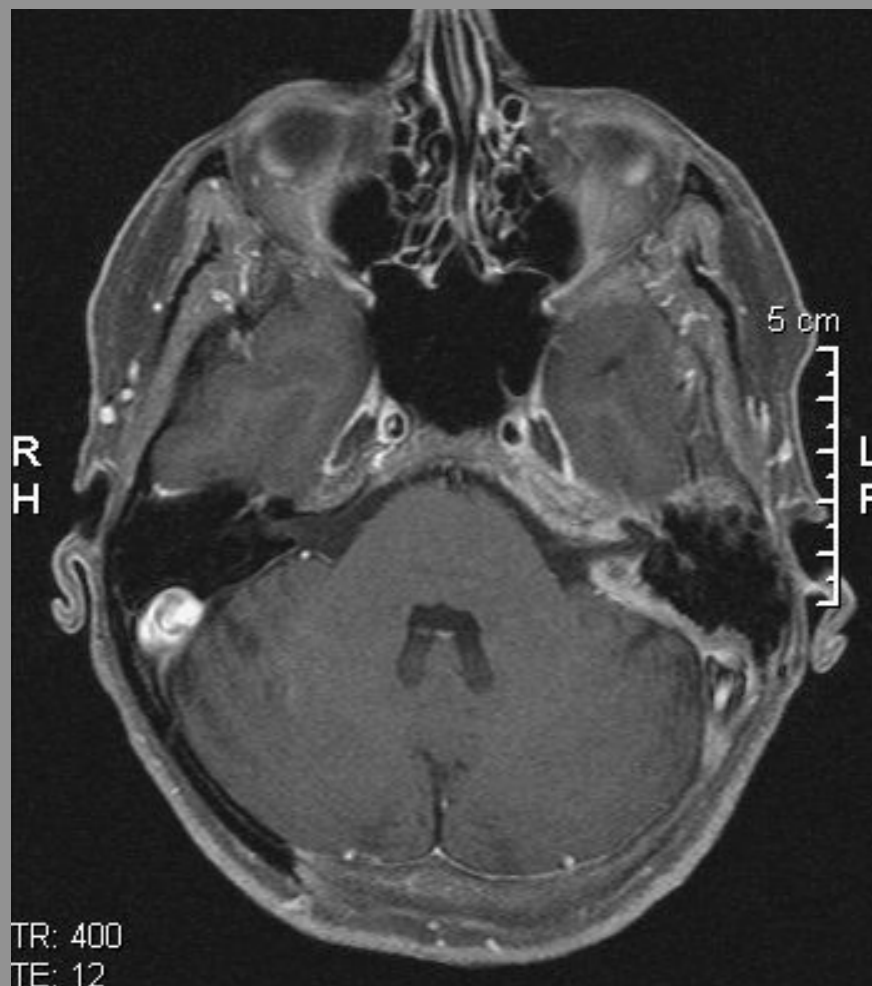


SURDITE GAUCHE RETROCOCHLEAIRE



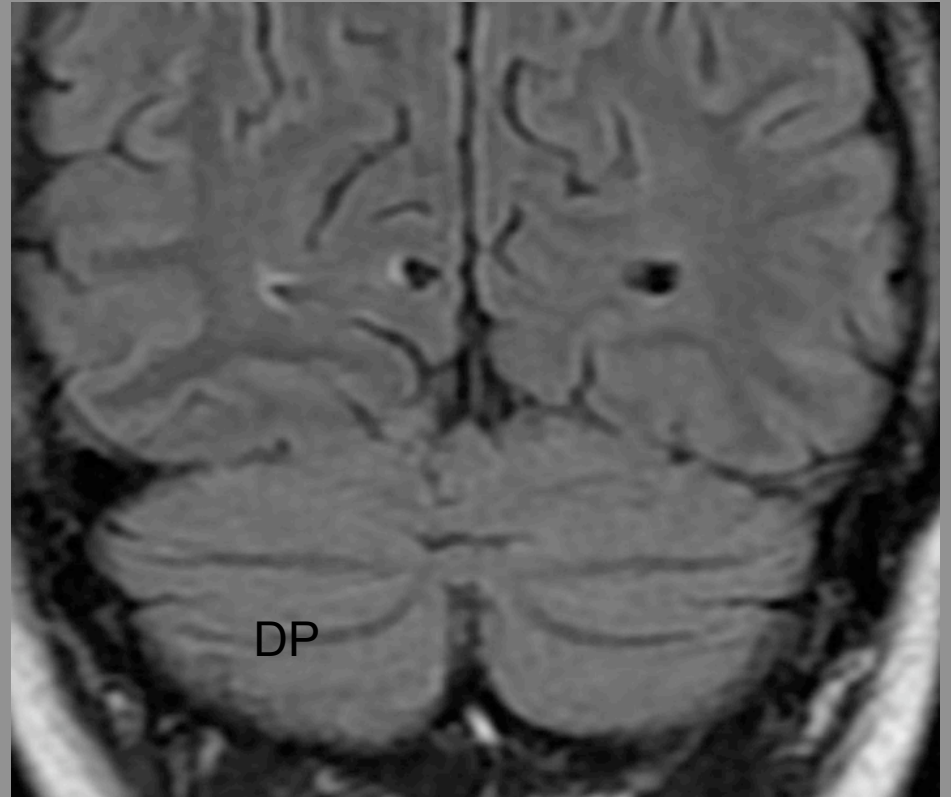
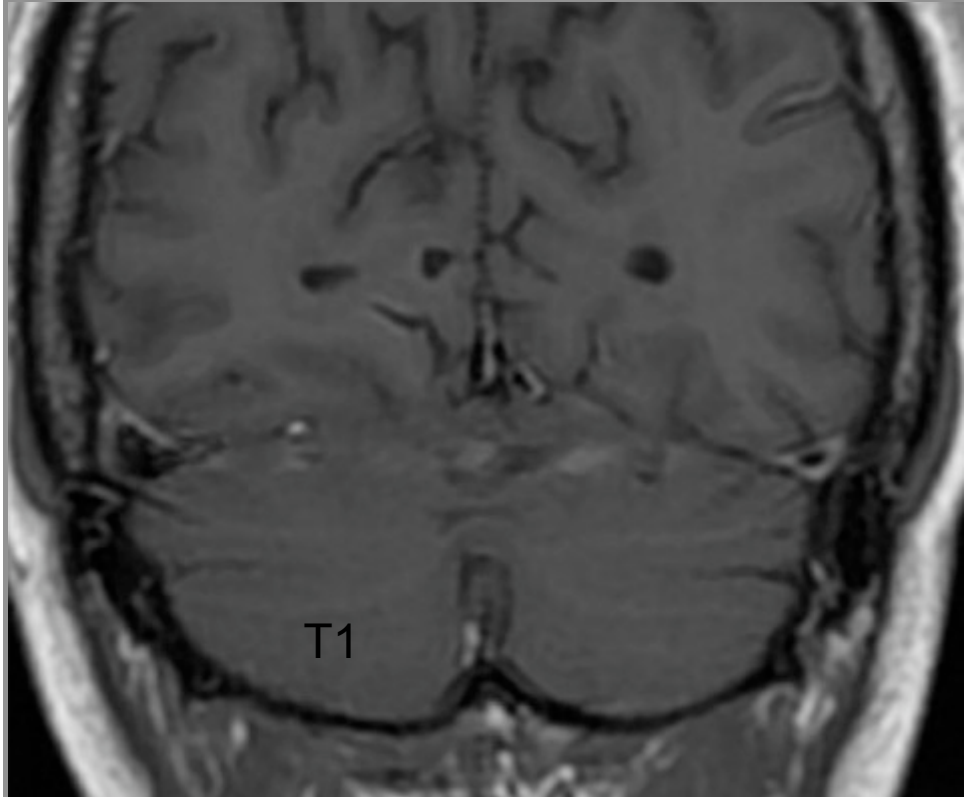
57 Ans surdité G





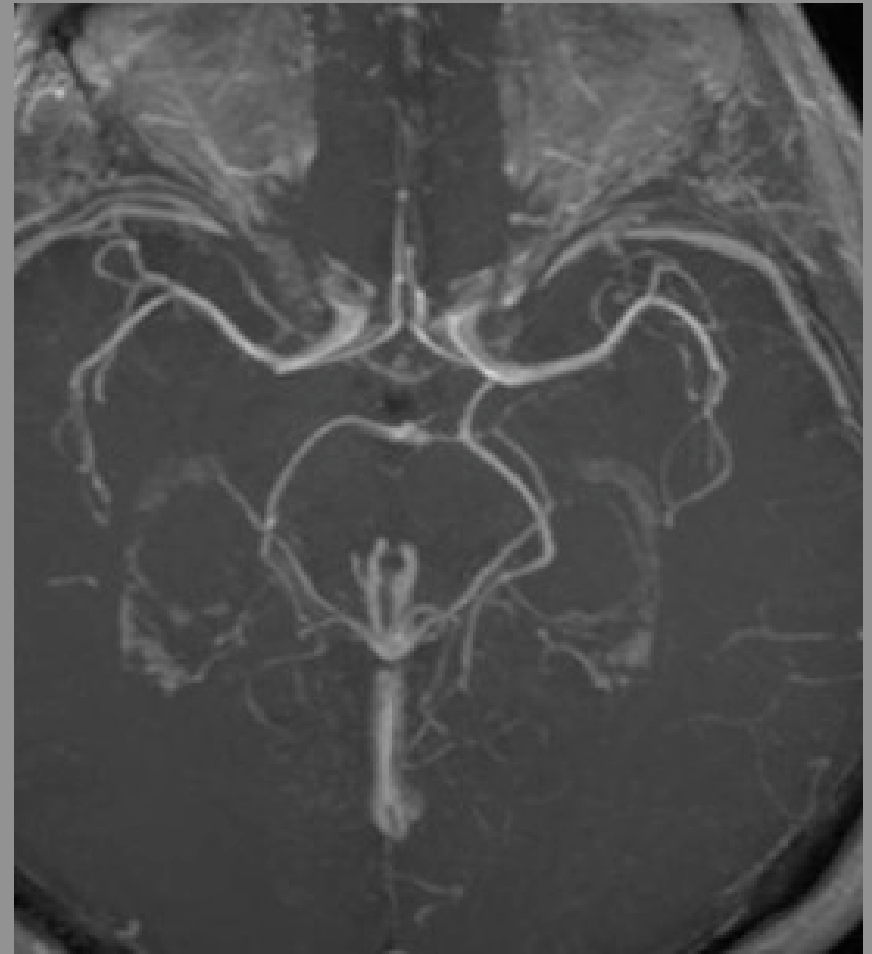
CAS NUMERO 10

- Patient de 57 ans sportif
- Hémianopsie latérale homonyme G
- IRM en urgence au CH d' A.. normale
- Contrôle à la demande du neurologue





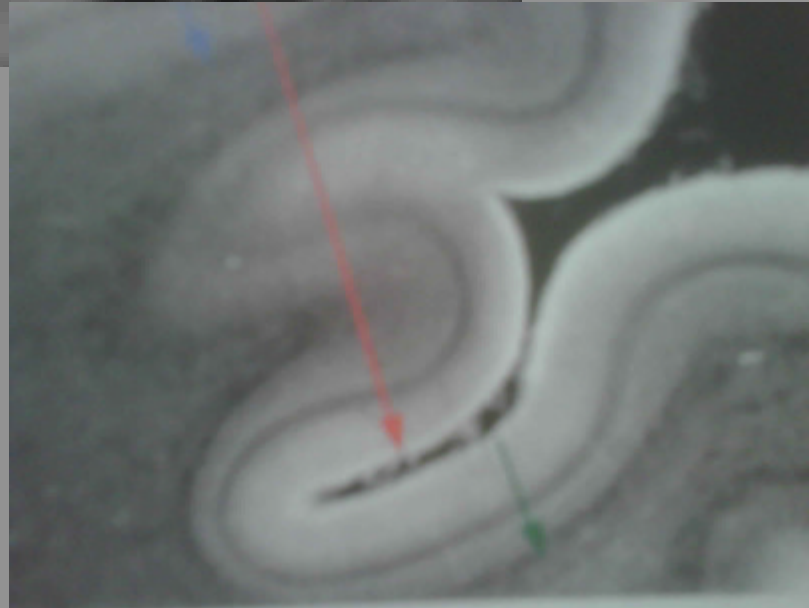
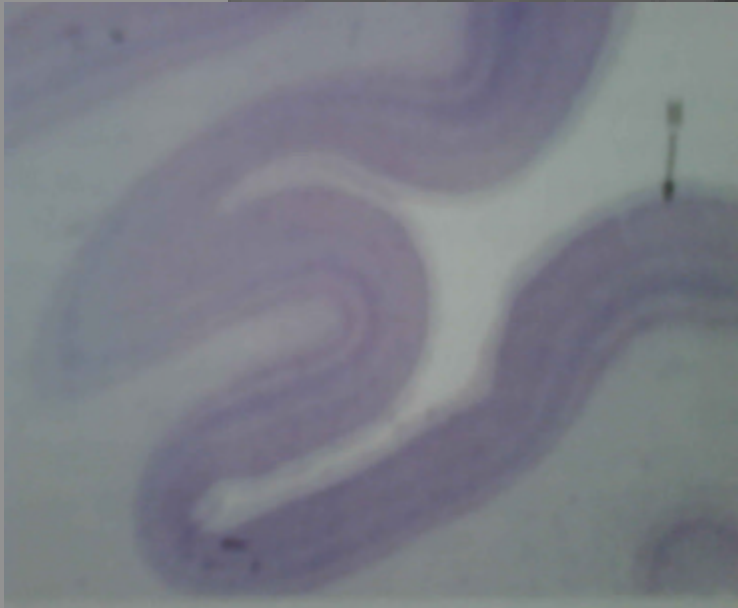
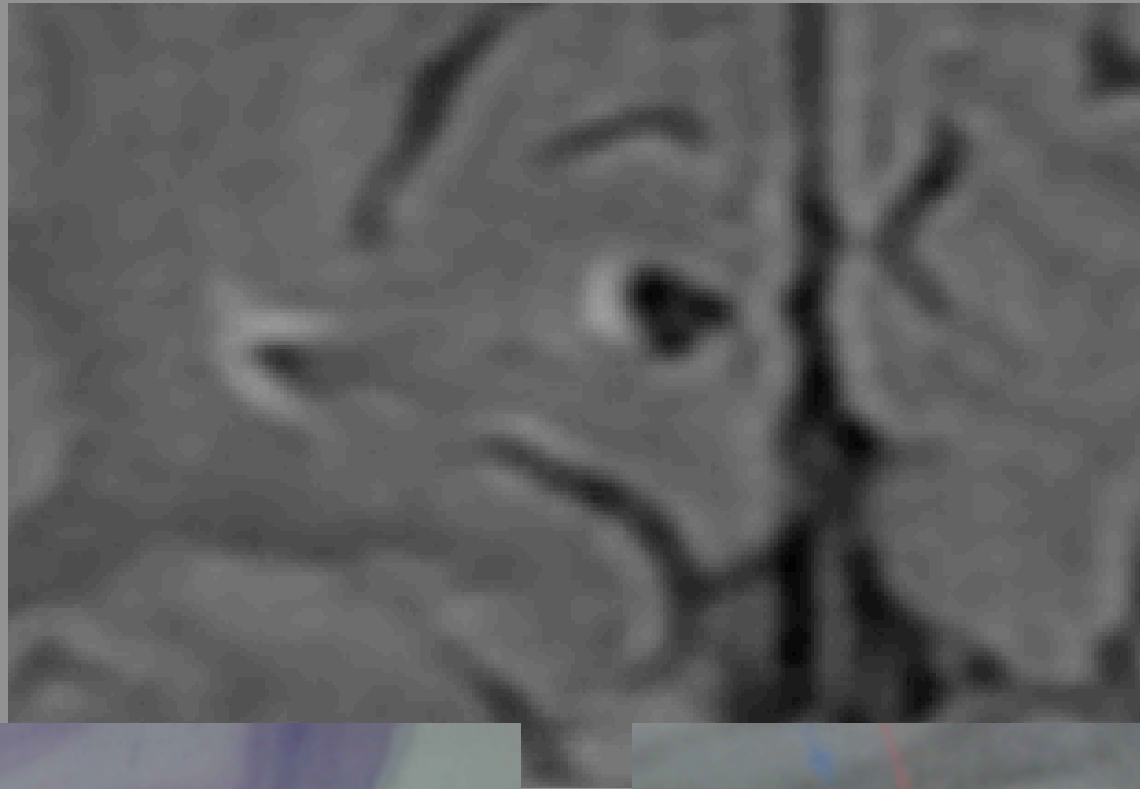
TOF



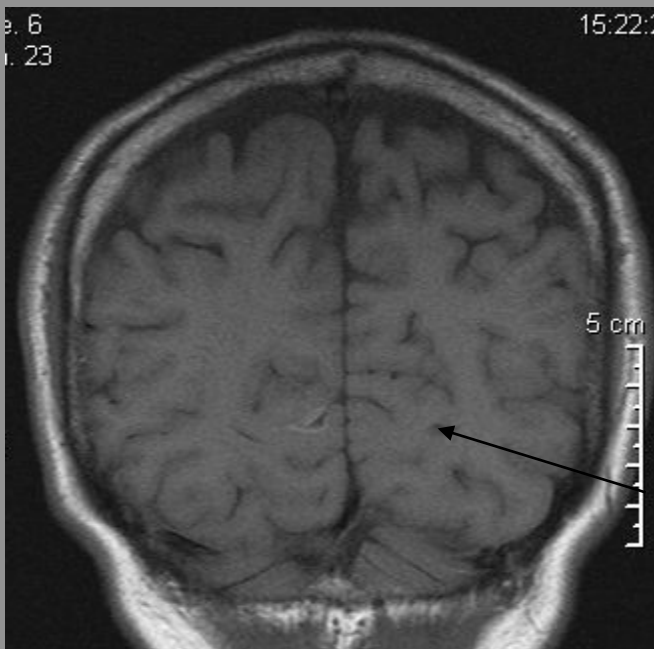
T1 gd MIP

Nécrose corticale laminaire

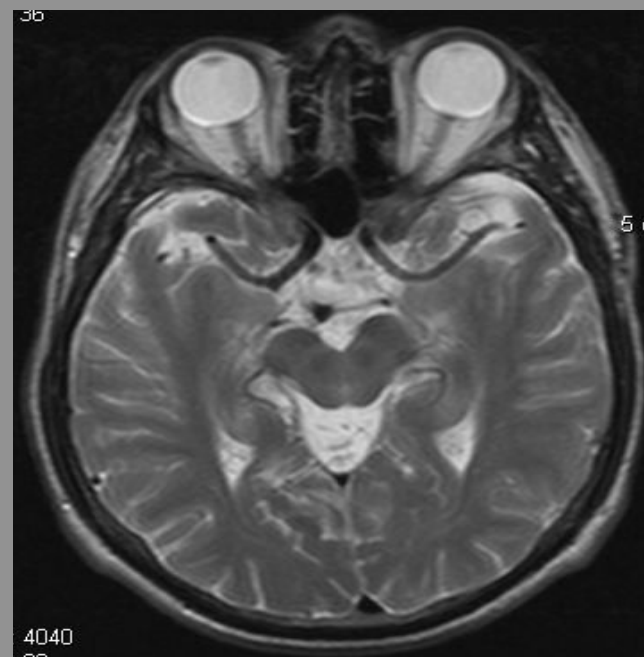
- Atteinte des couches corticales profondes des territoires distaux les plus sensibles à l'anoxie . Complique une ischémie cérébrale classique.
- Aspect typique d'hypersignal T1 gyriforme +++ (de J15 à 2ans parfois), hypersignal T2 et FLAIR.
- Parfois discrète rupture de la BHE.



T1



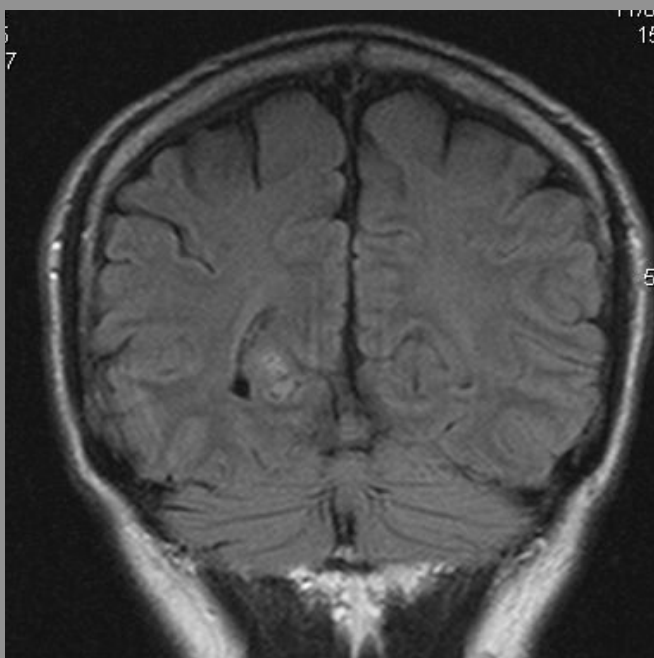
T2



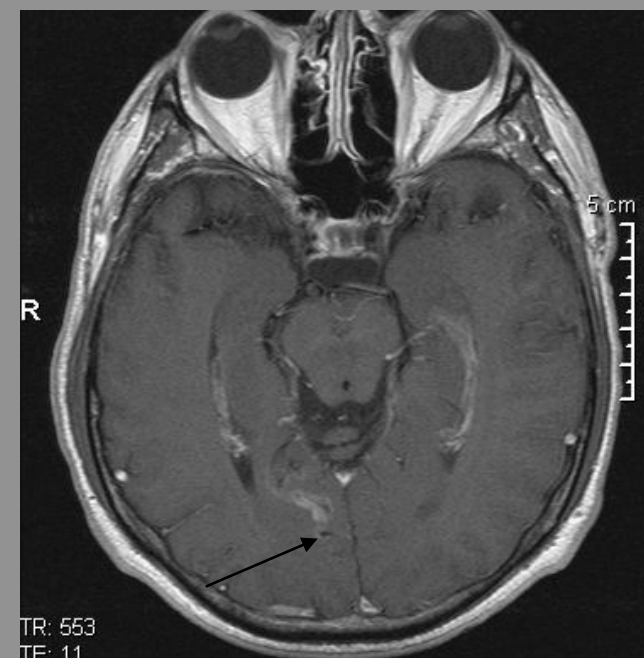
52 ans HLH G

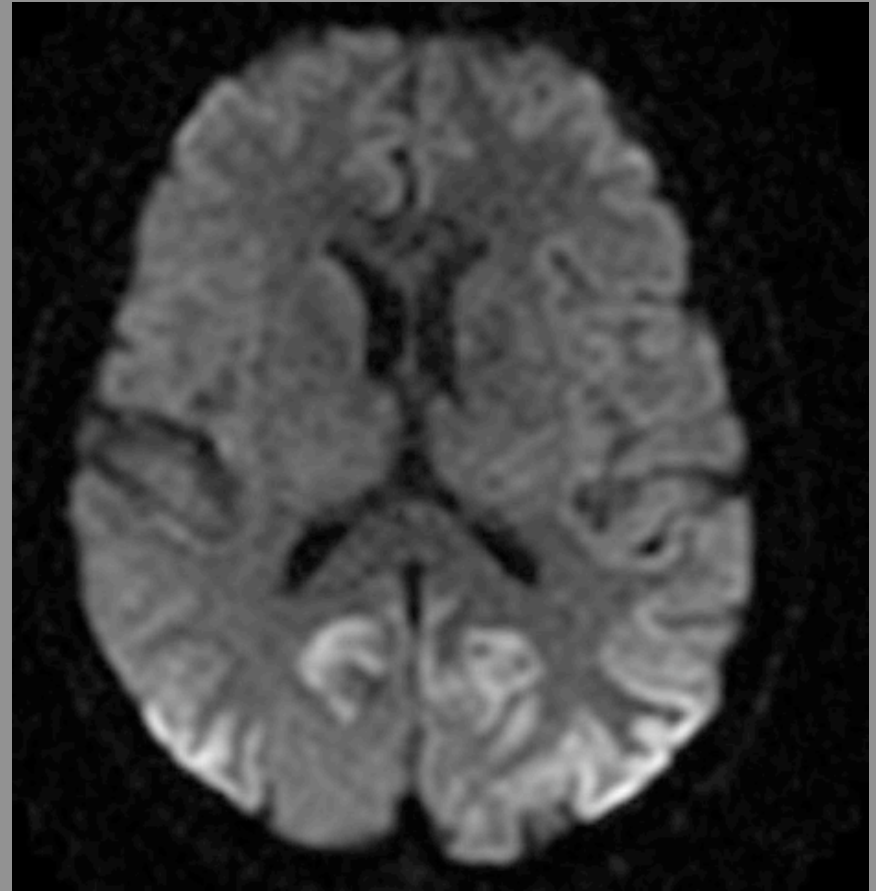
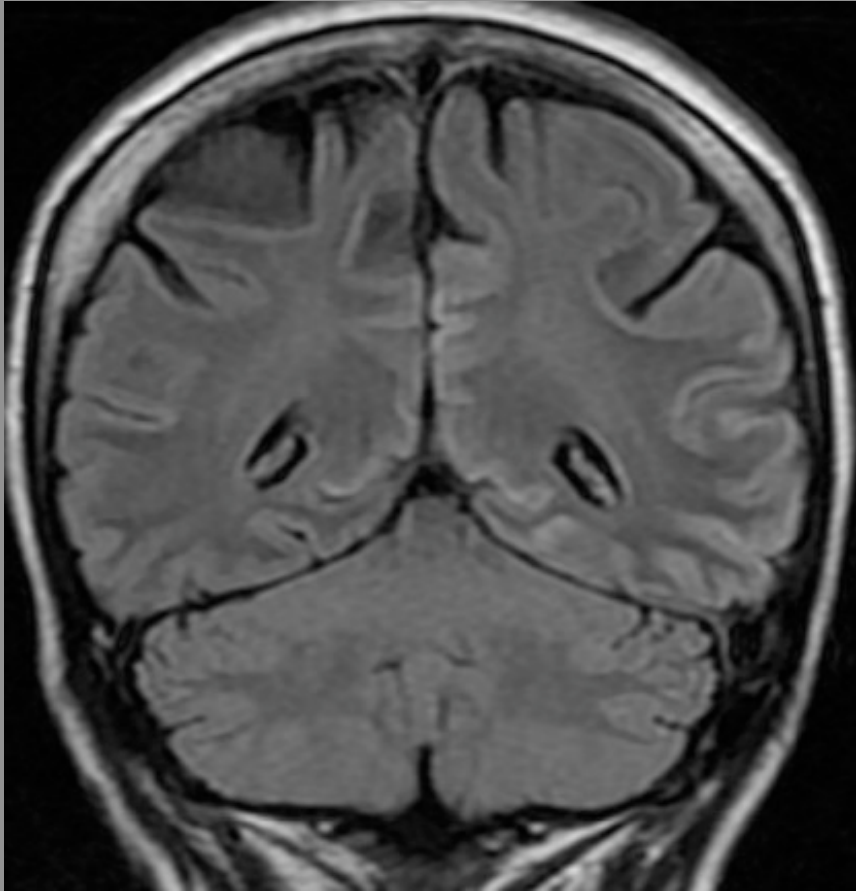
Nécrose corticale lammaire

FLAIR



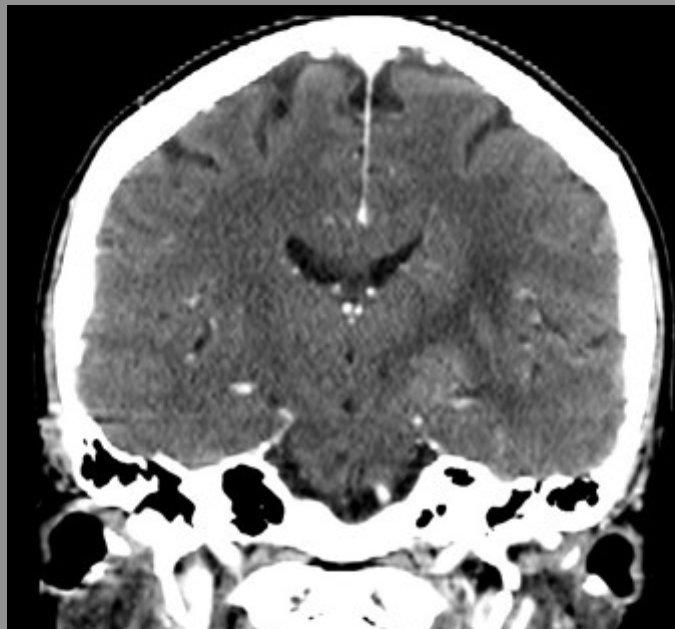
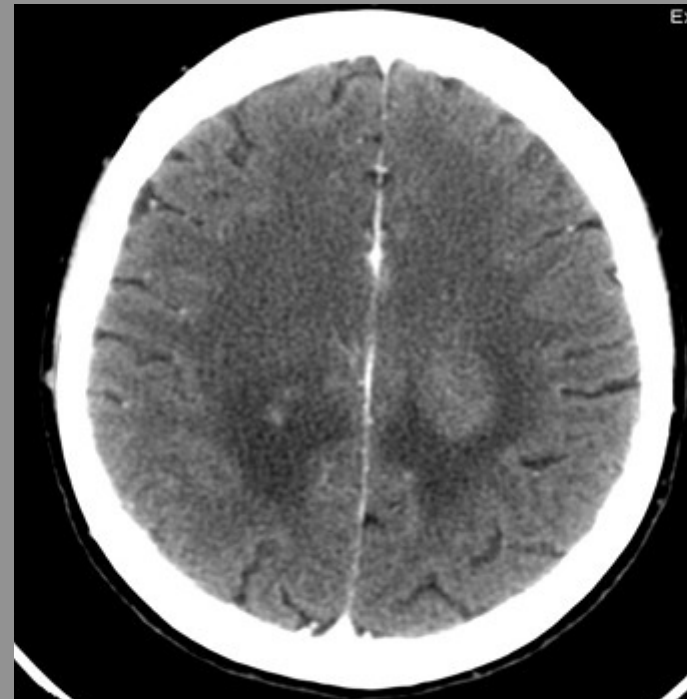
T1Gado





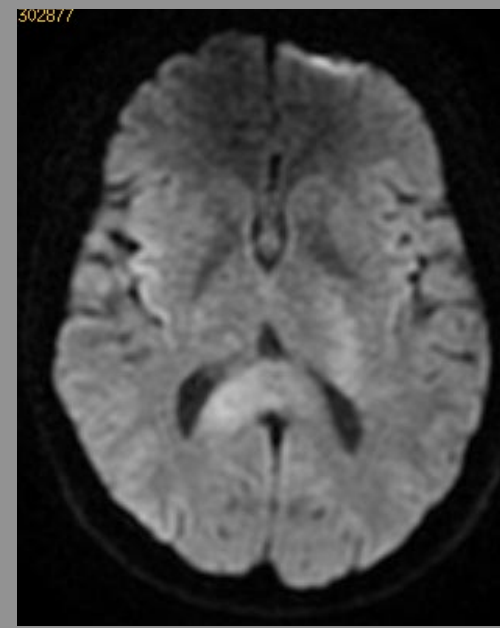
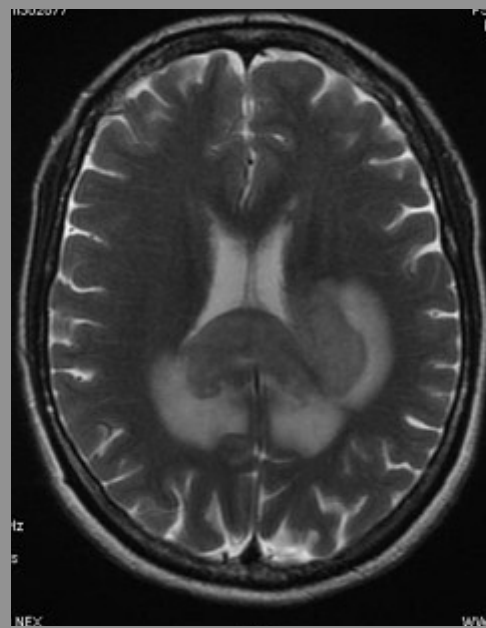
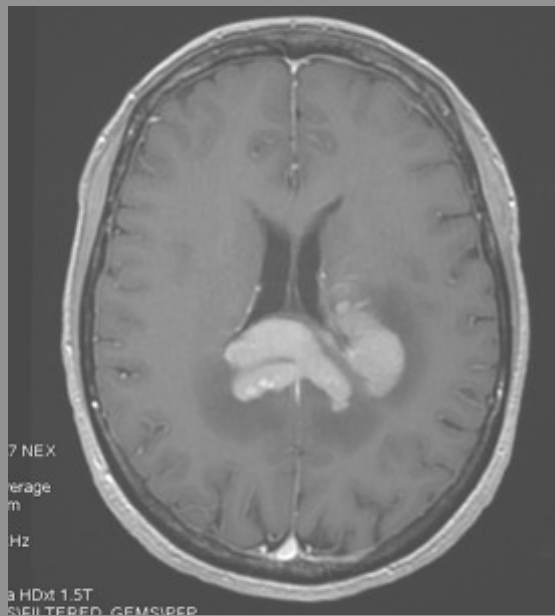
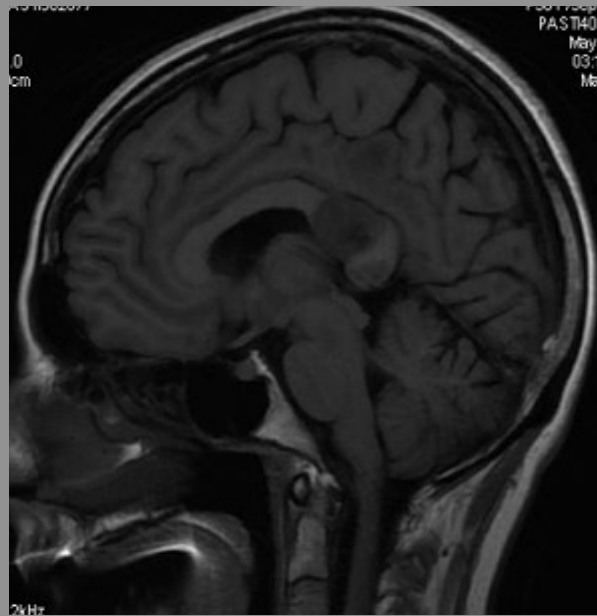
CAS

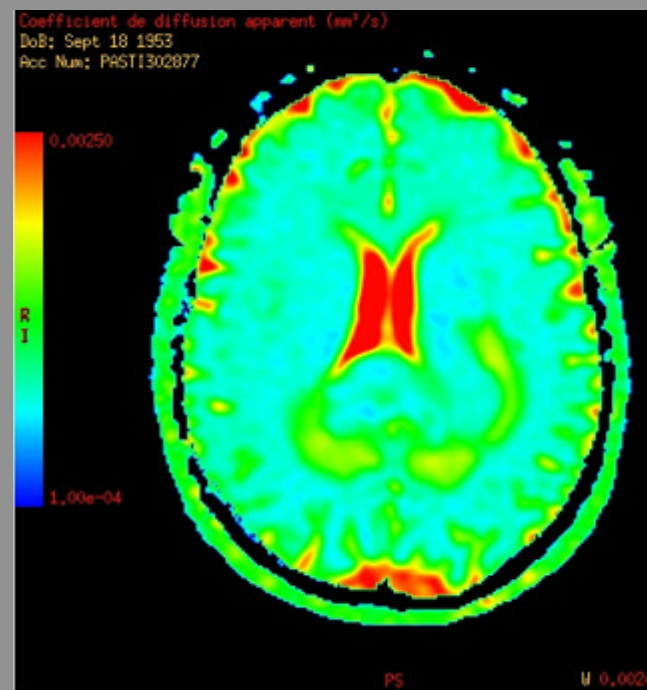
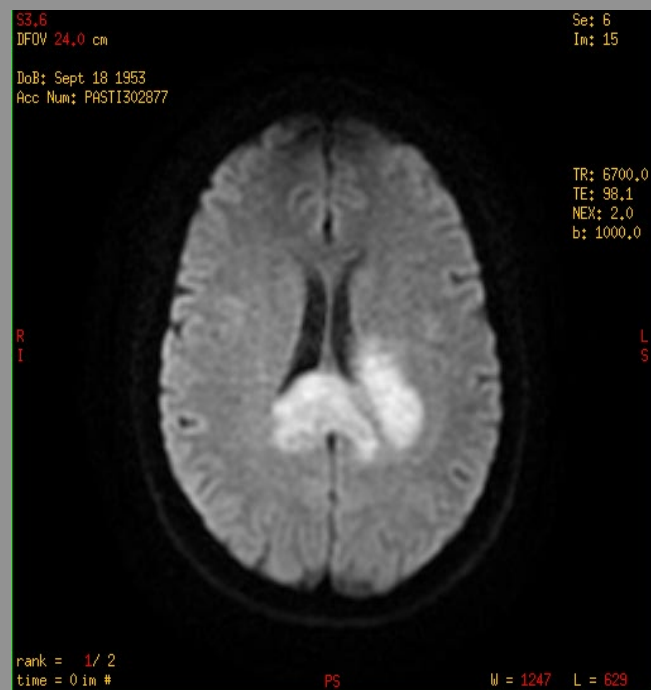
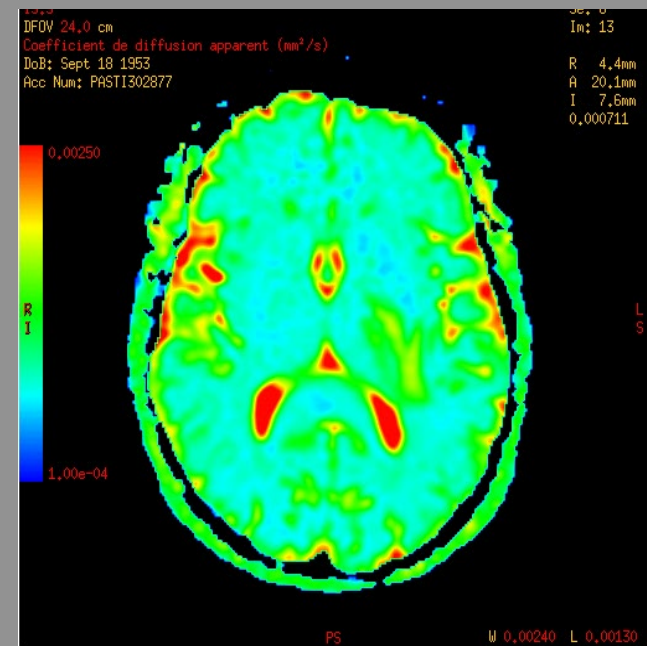
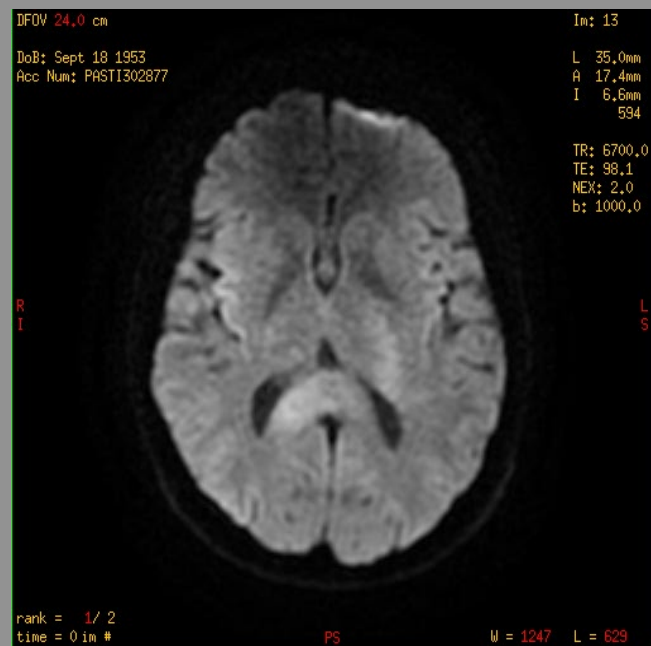
- Femme de 56 ans
- Vertiges, céphalées, troubles de la vision et de la marche
- Bilan TDM



CR Scanner

- Deux localisations NGC et para-ventriculaires
- Suspicion de métastases IRM





Chute de l'ADC et syndrome tumoral

Évoquer :

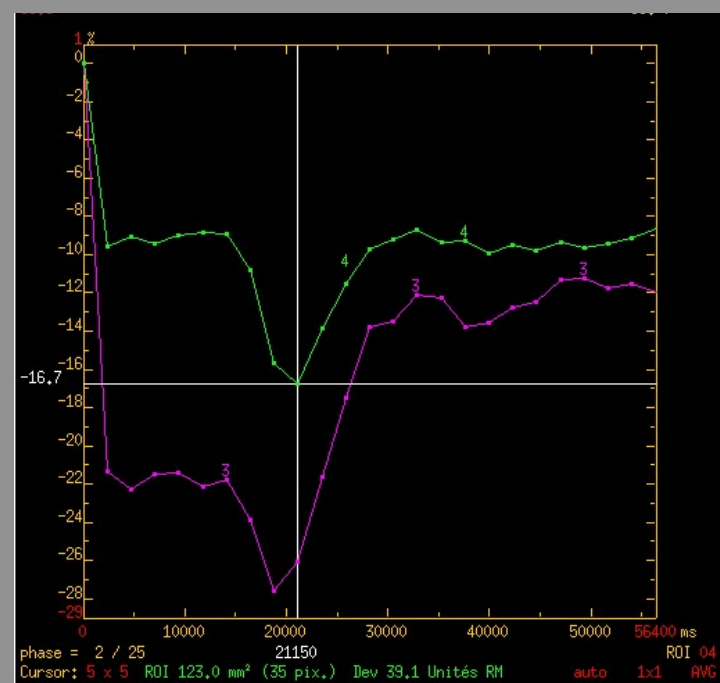
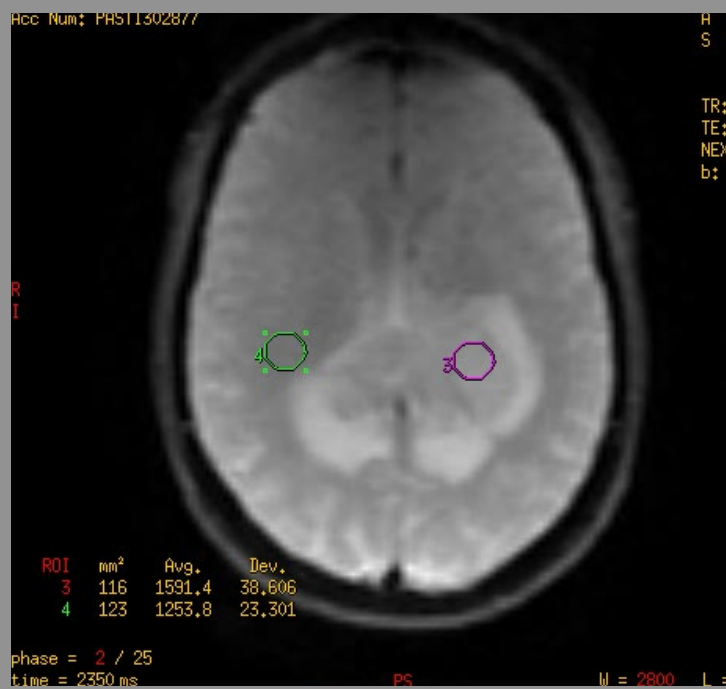
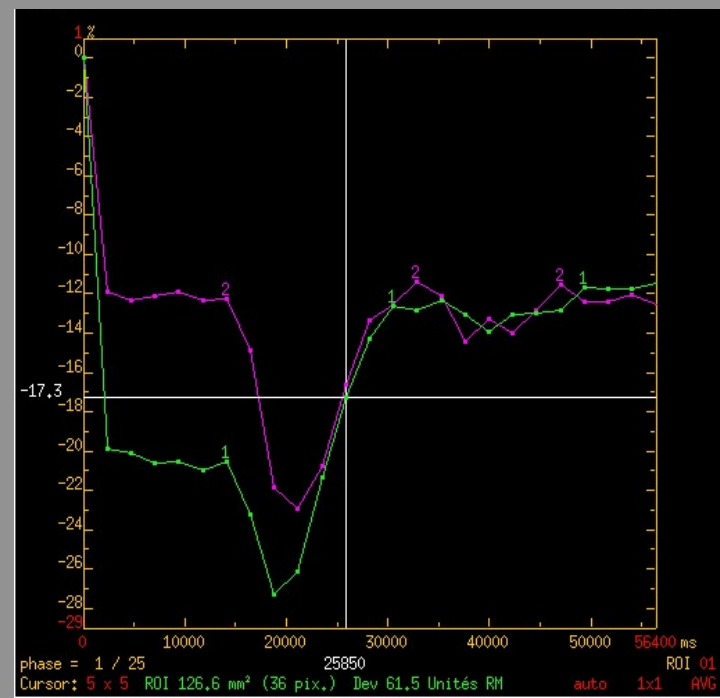
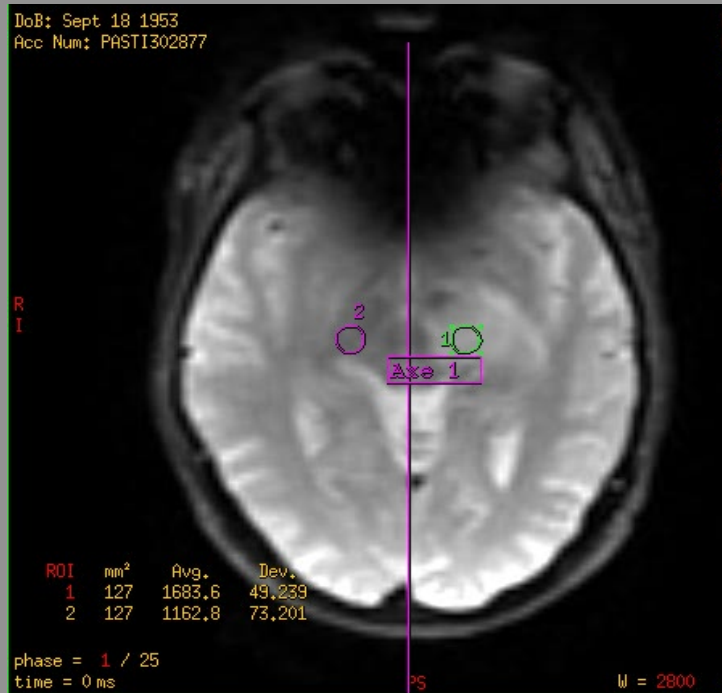
- Kyste épidermoïde
- Méningiome grade 2 / 3
- Lymphomes
- DNET
- Zone tumorale calcique ou hémorragique



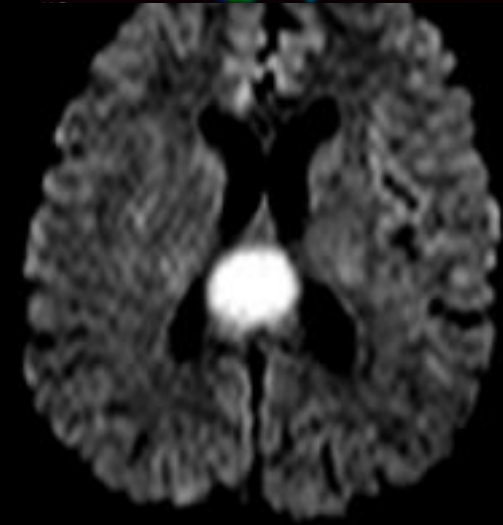
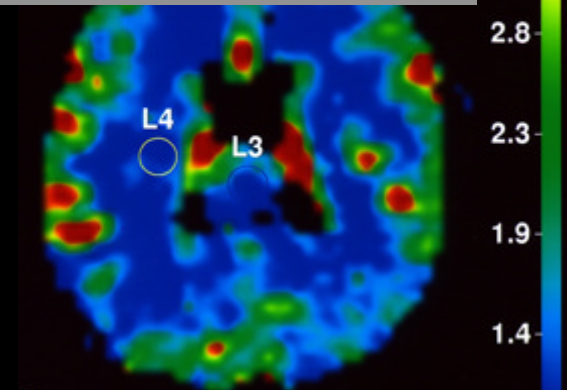
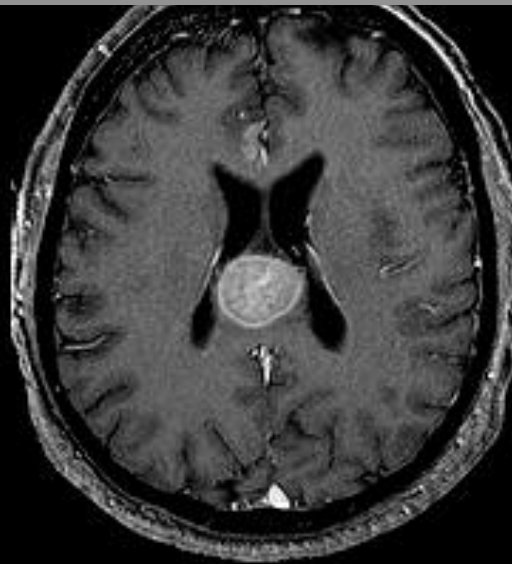
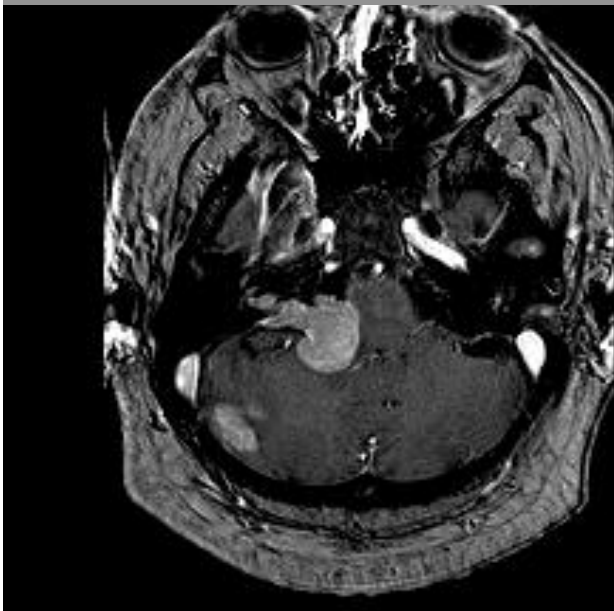
Pathologie tumorale

Critères histologiques de malignité des tumeurs gliales Daumas-Duport:

- atypies cellulaires
- présence de mitoses
- hyper vascularisation
- nécrose

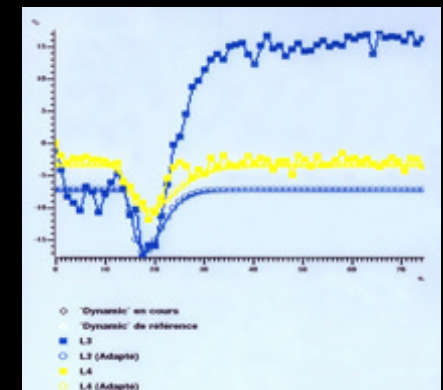


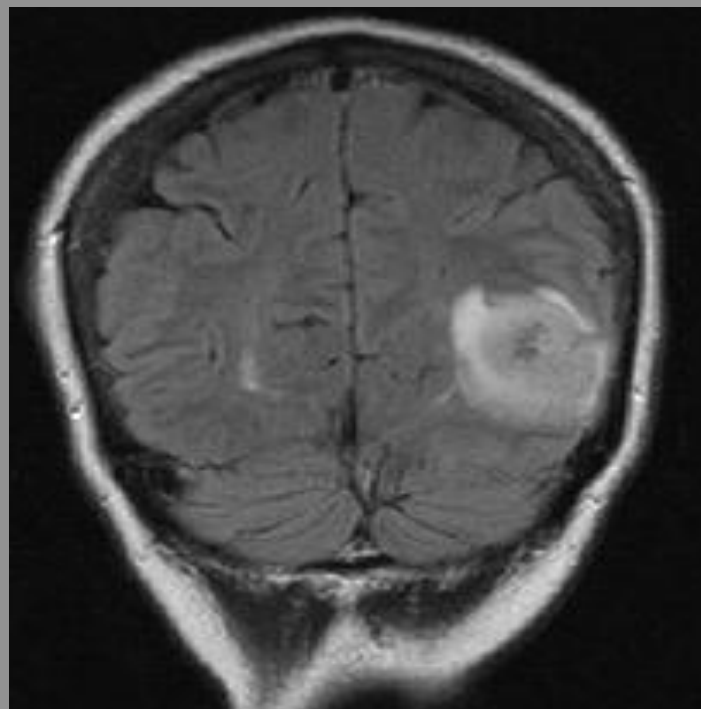
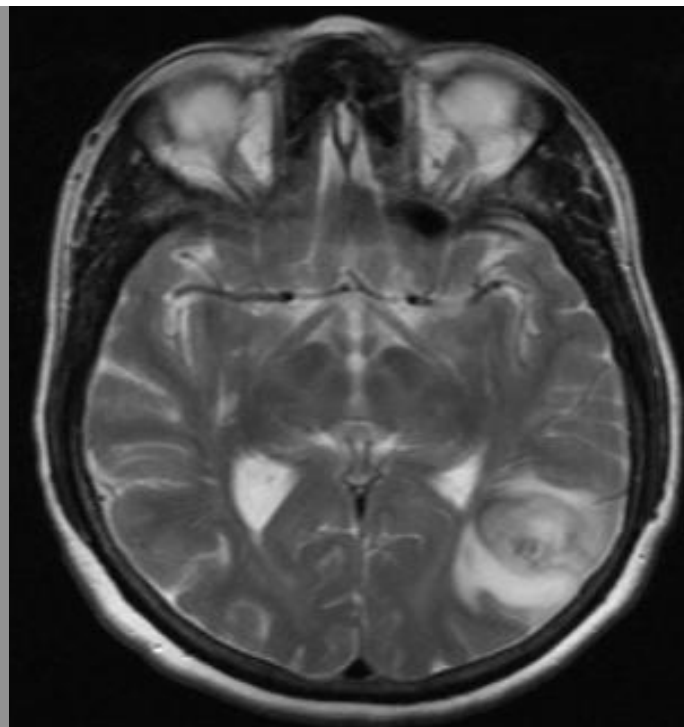
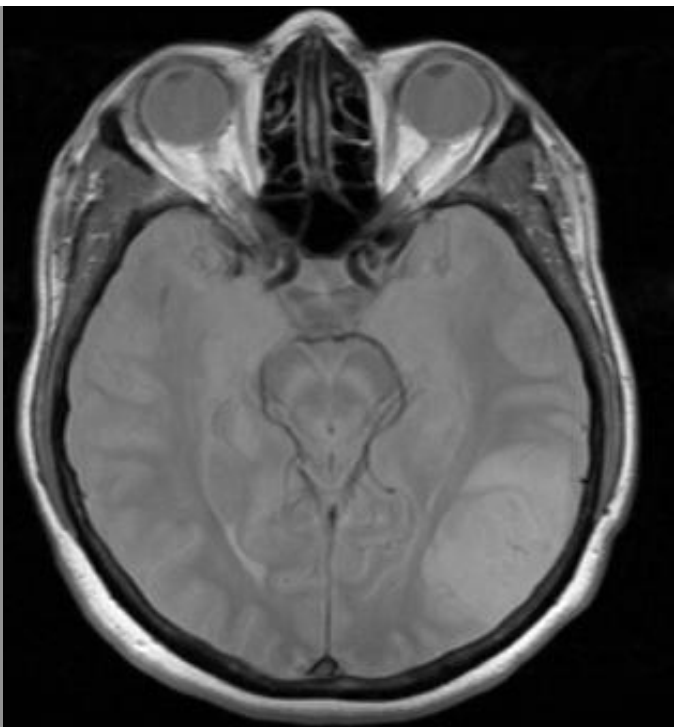
Lymphome cérébral primitif multifocal à grandes cellules

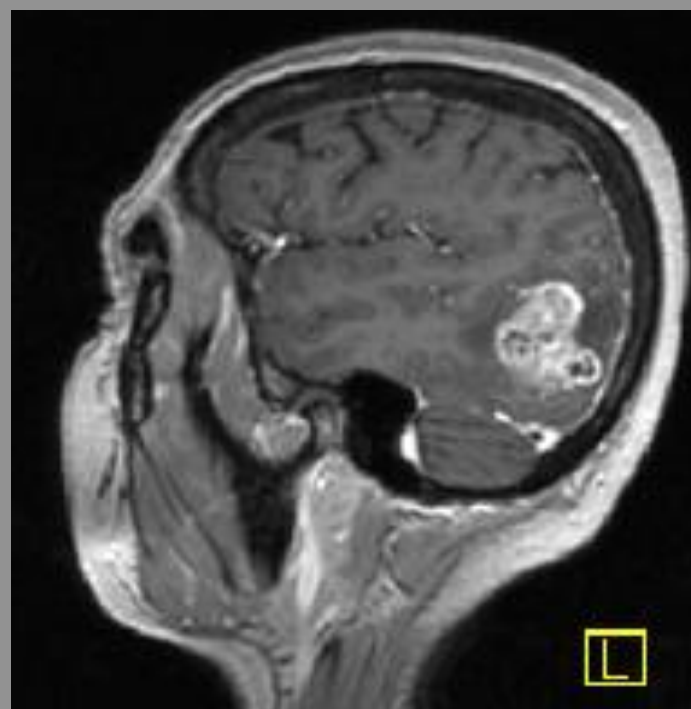
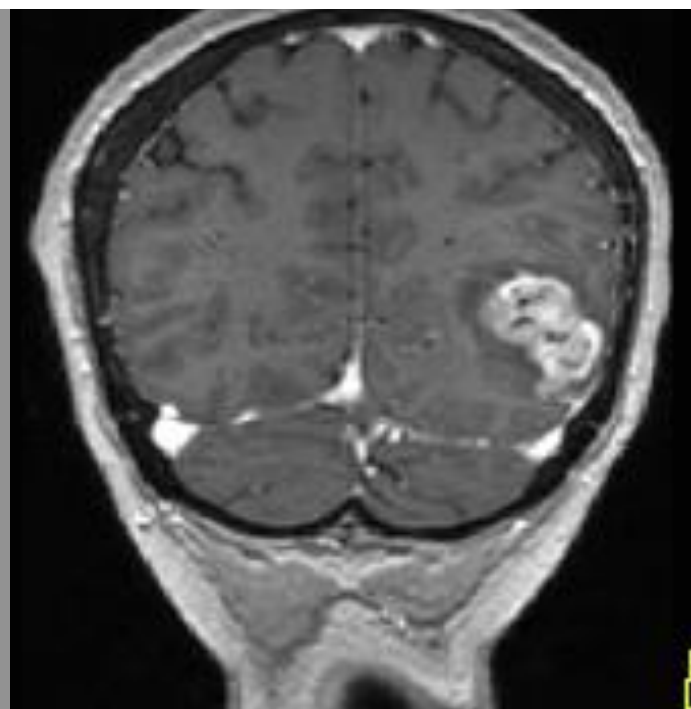
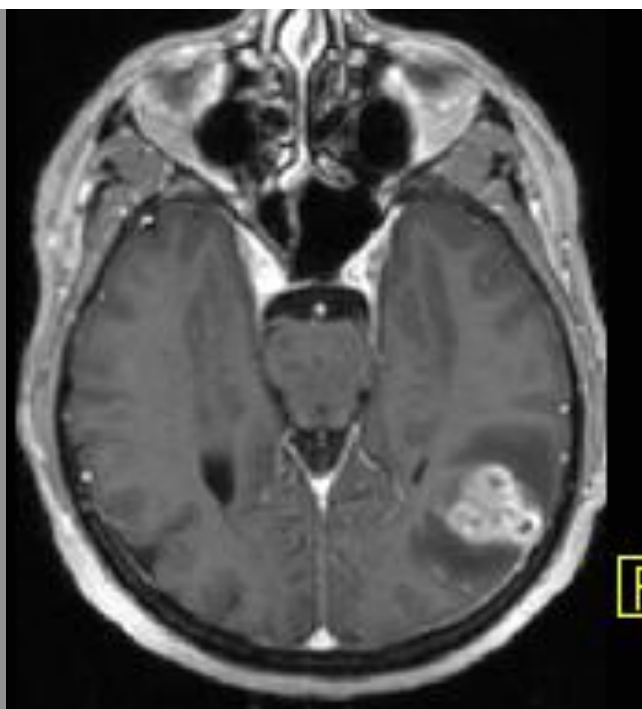


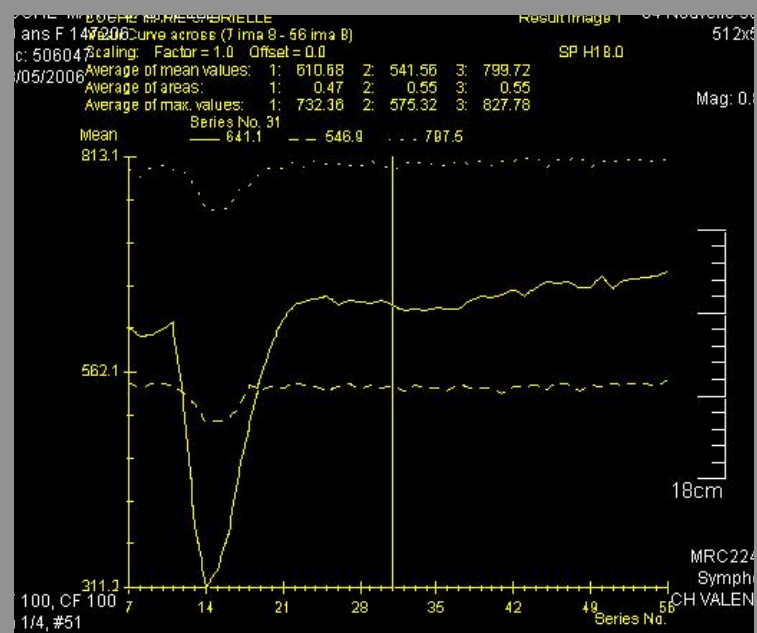
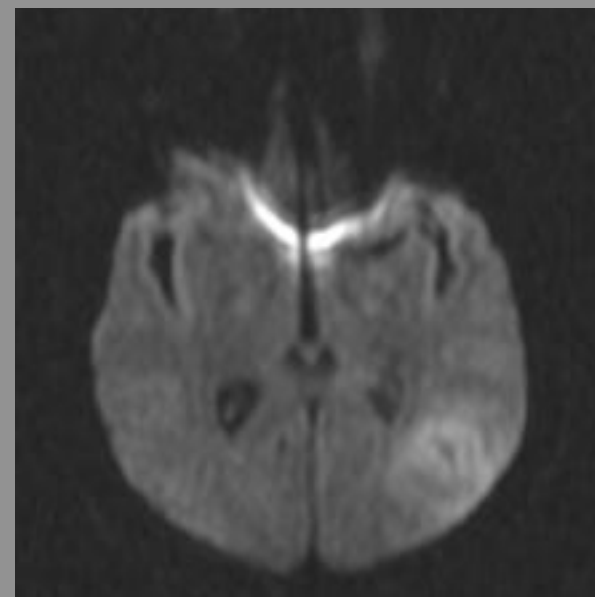
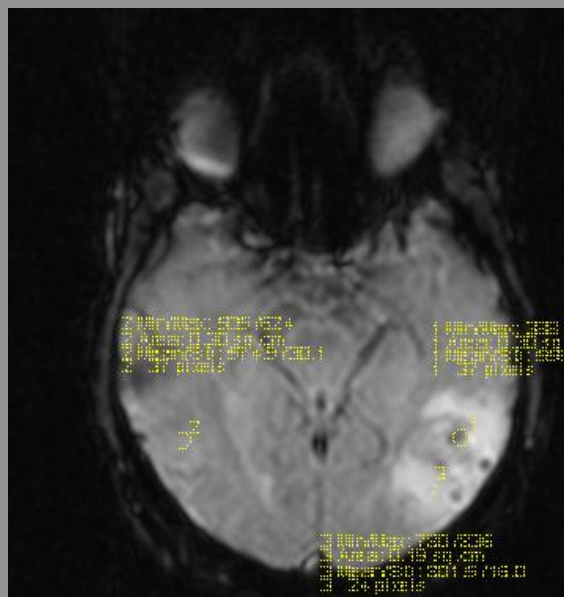
Hypercellularité

- Homme de 57 ans, devant être opéré d'un schwannome de l'acoustique,
- Aggravation des troubles de l'audition et apparition de céphalées la veille de l'intervention
- IRM réalisée en urgence

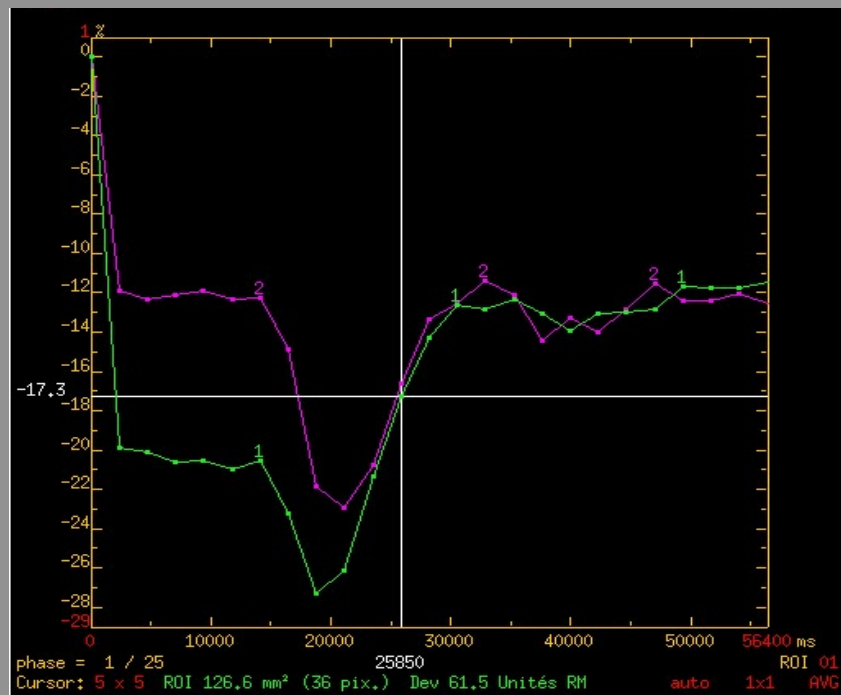




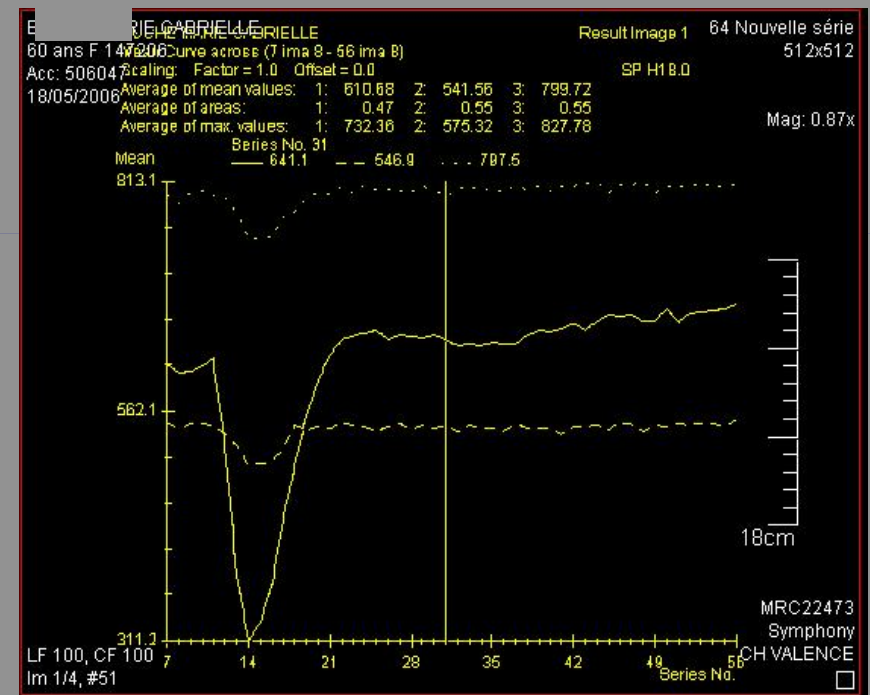




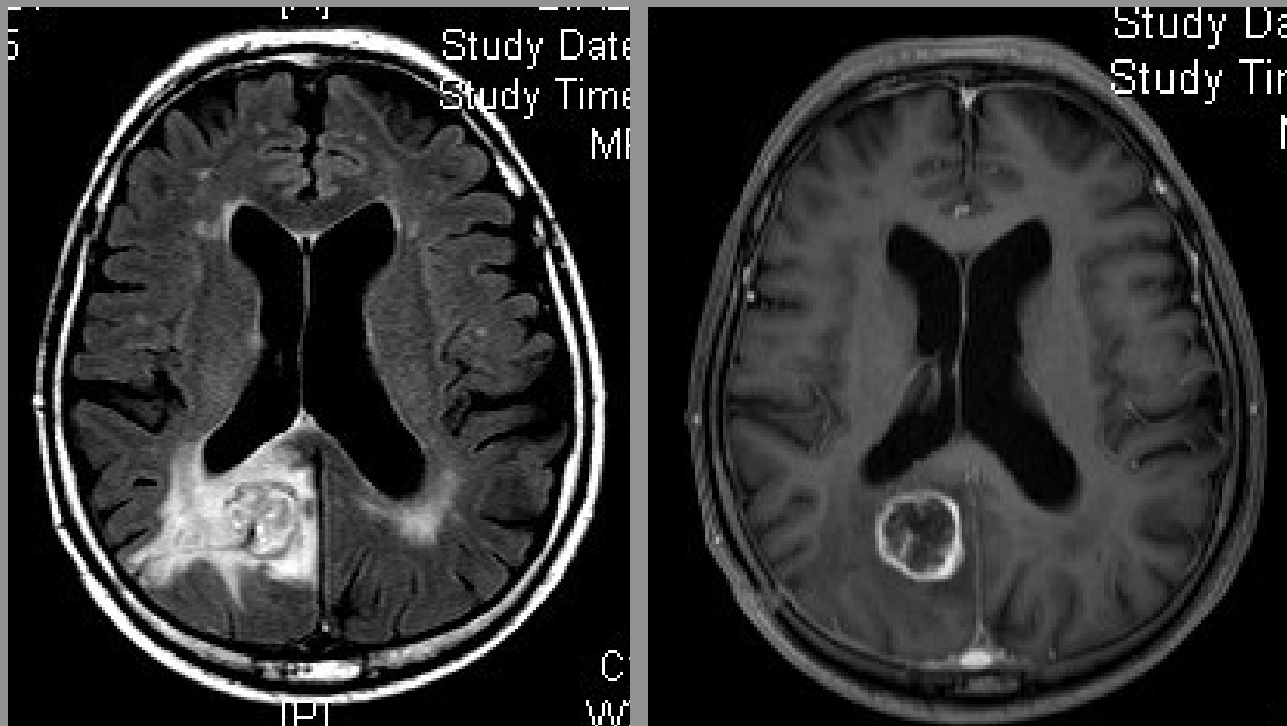
Lymphome

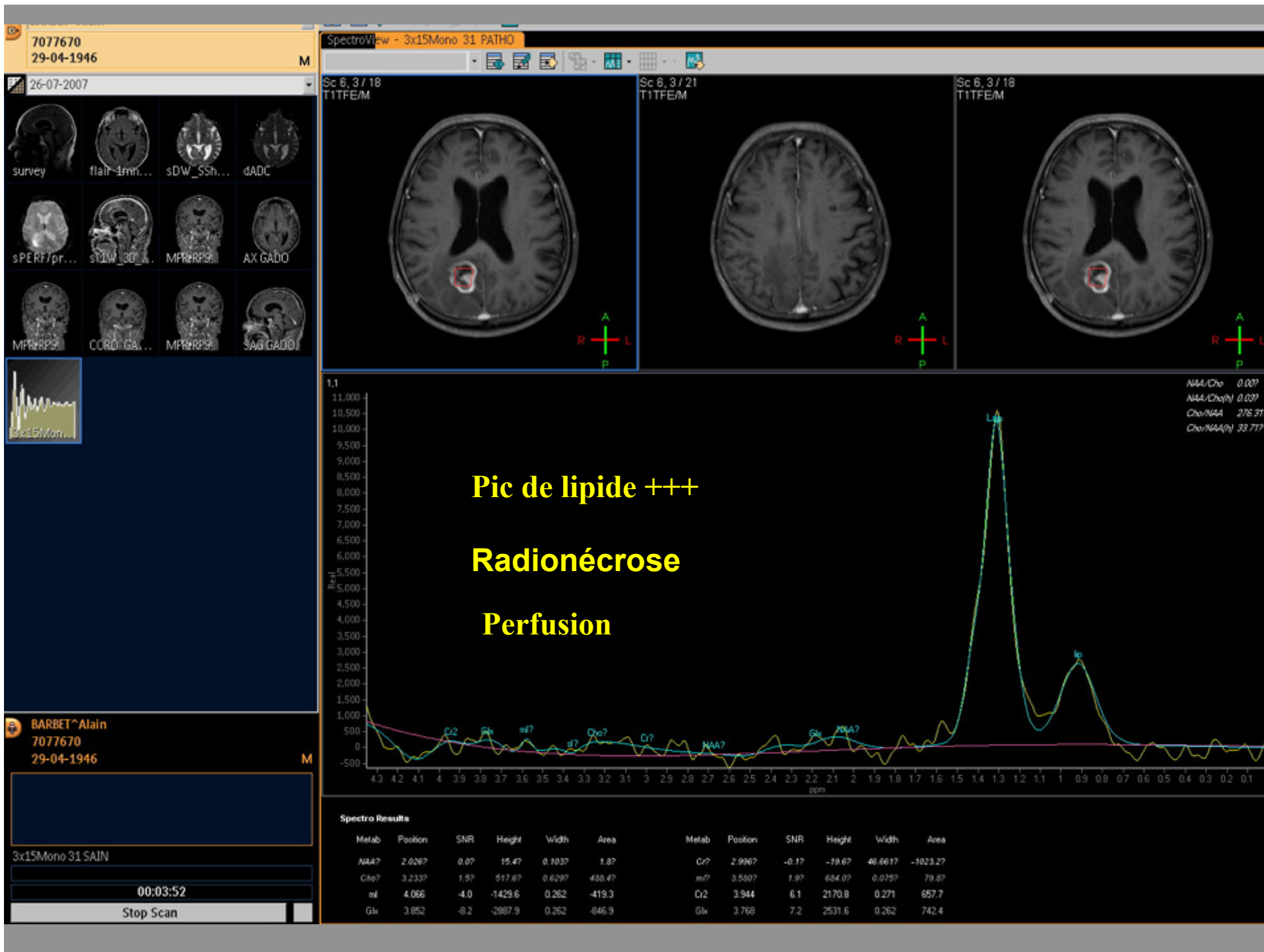


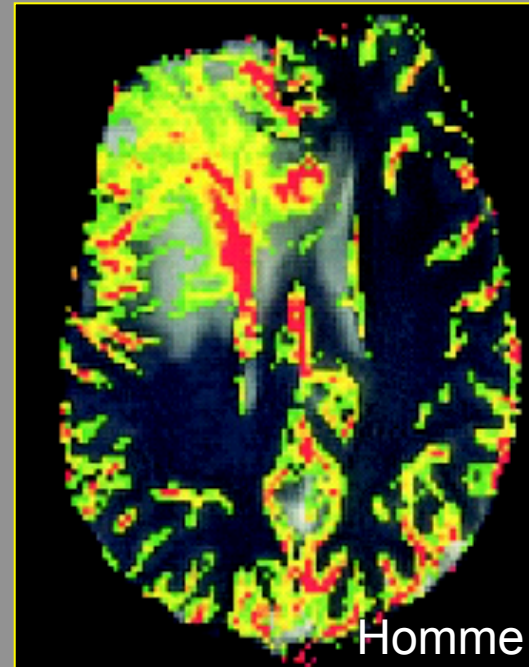
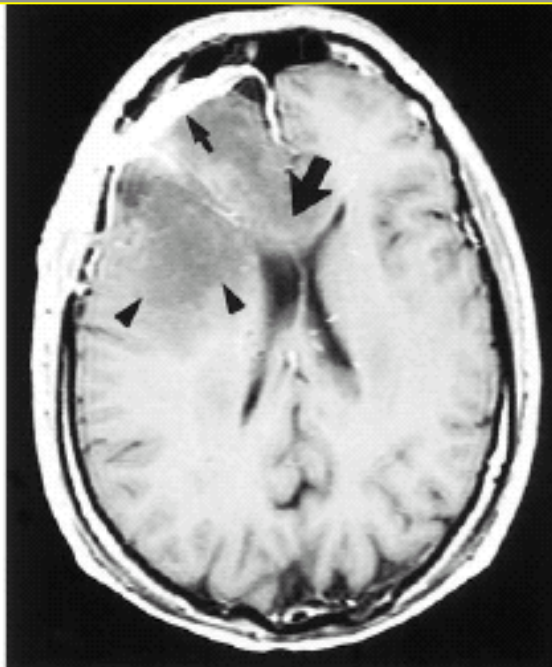
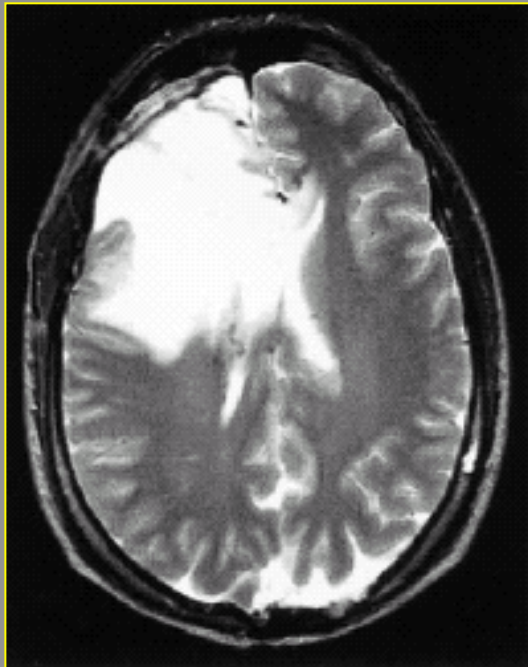
Tumeur gliale



- Homme de 62 ans,
- Radio-chimiothérapie (Temodal) pour un glioblastome.
- Réapparition d'une lésion nécrotique faisant craindre une récurrence.
- Bilan IRM complémentaire

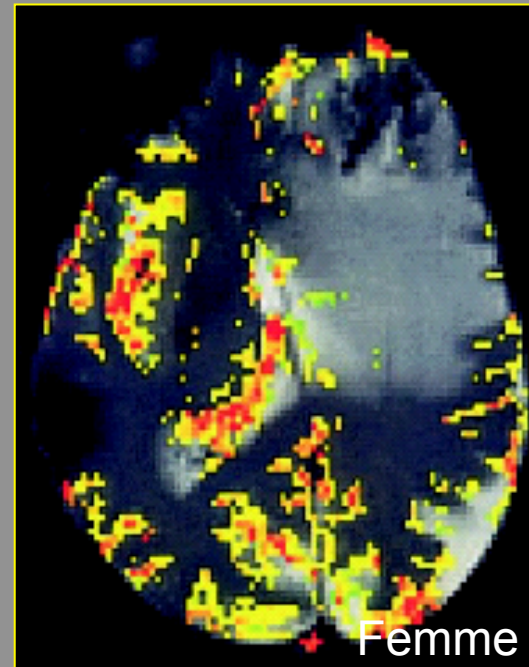
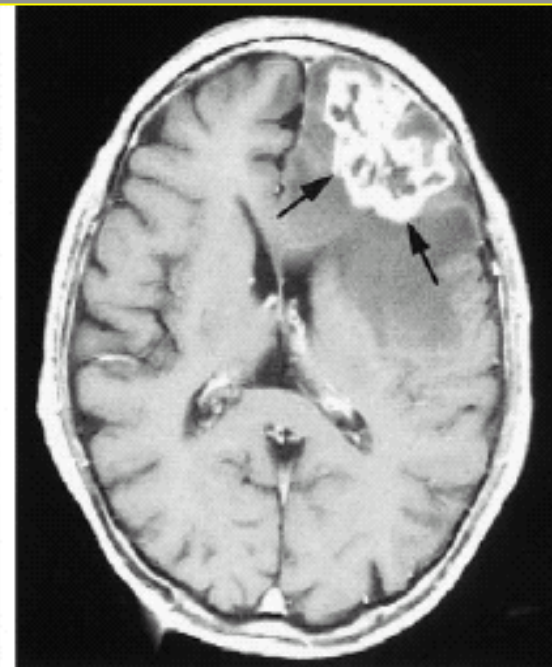






GBM

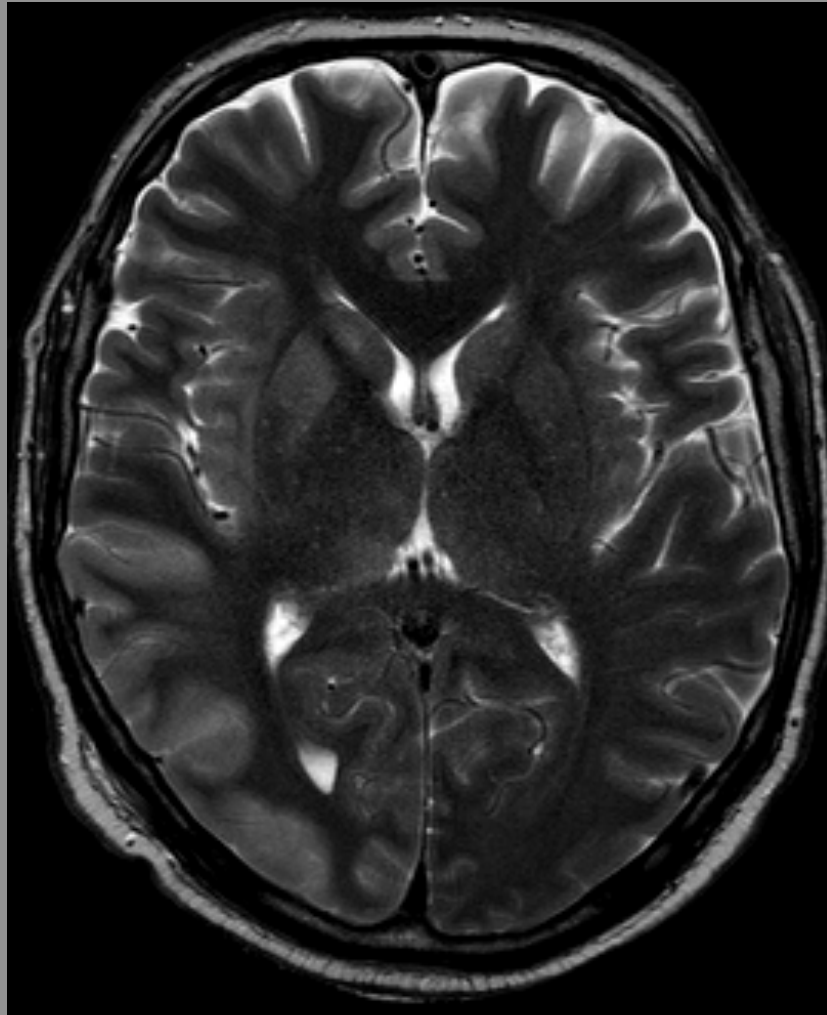
Homme de 72 ans .

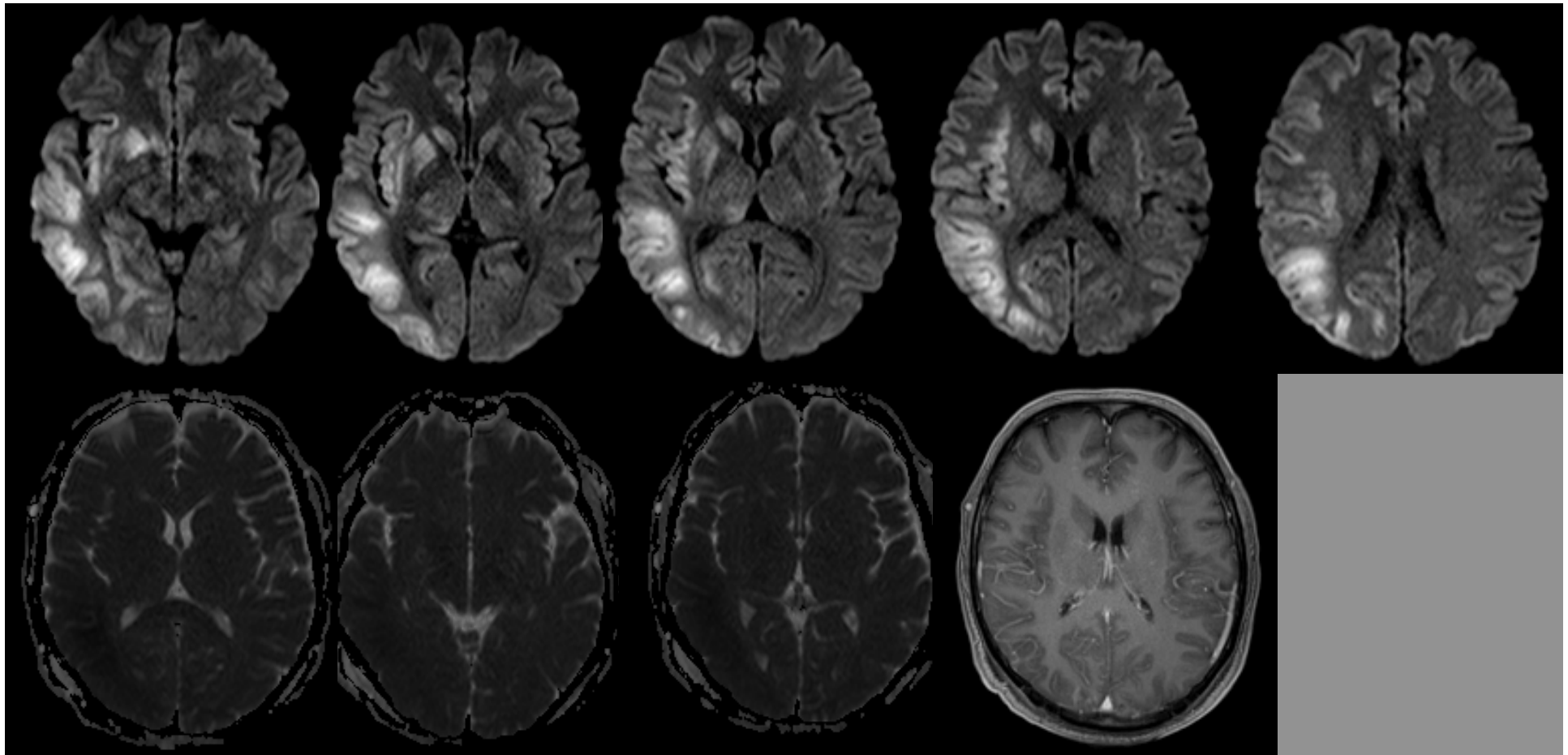


RxN

Femme de 82 ans .

- Homme de 55 ans, ATCD de LLC acutisé (Richter)
- choc septique. Etat de mal depuis 5 jours, Absence de réveil.
- IRM demandée en urgence.

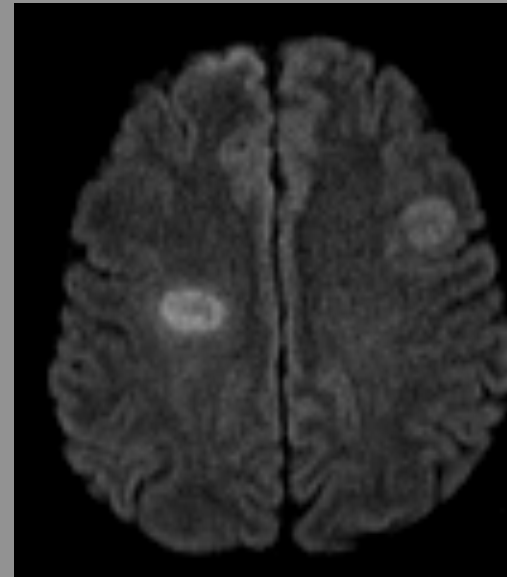
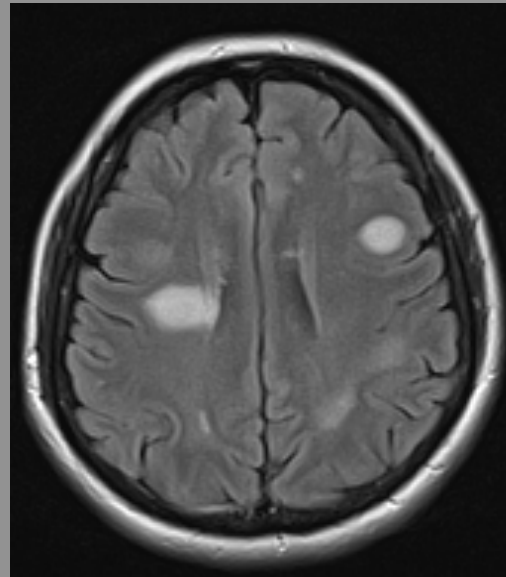
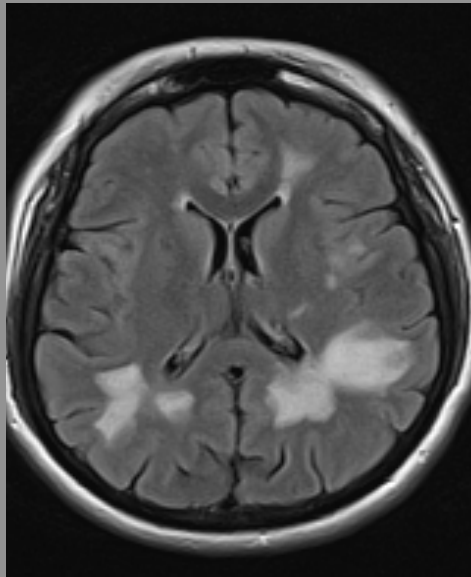
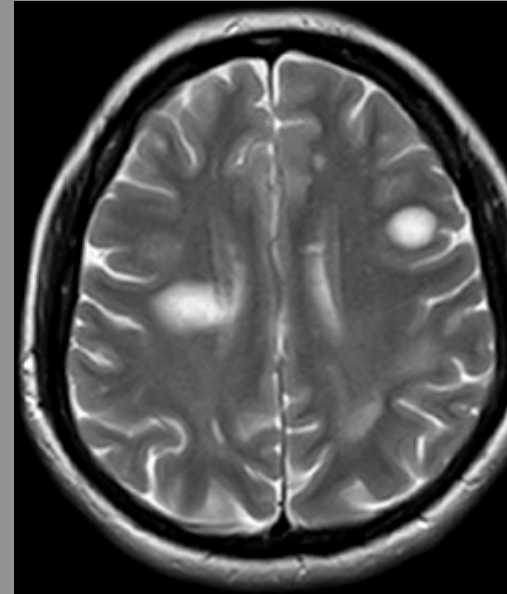
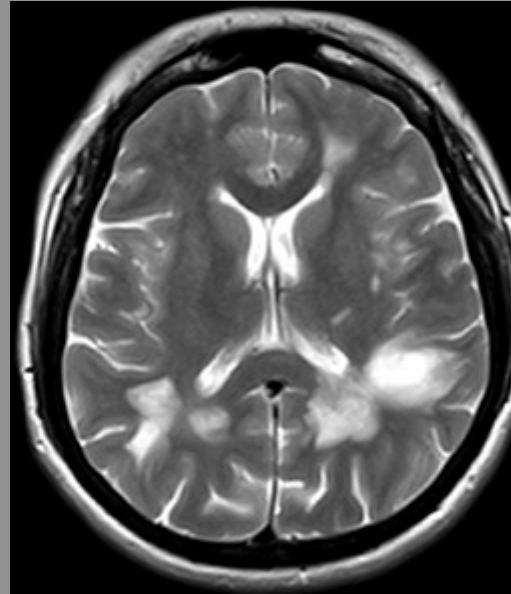


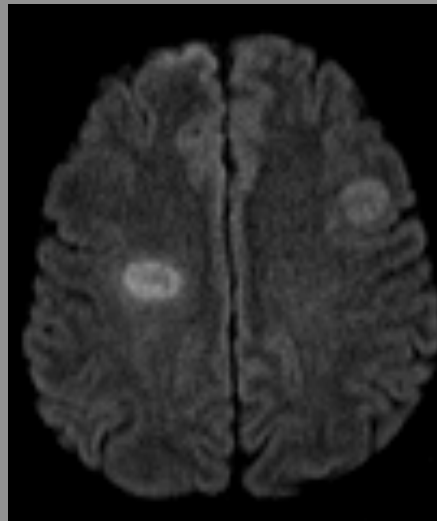
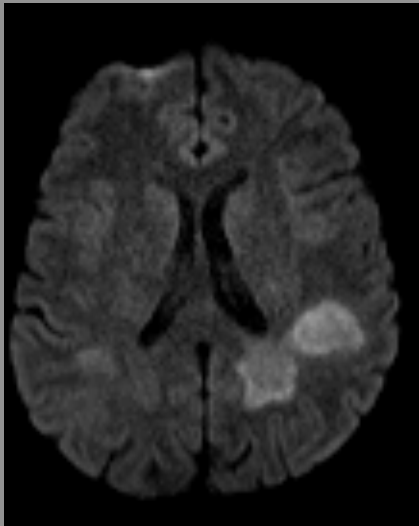


Quel diagnostic doit être évoqué

- Encéphalite limbique
- Sclérose en plaques corticale
- Gliomatose cérébrale
- **État de mal convulsif**
- Maladie de Creutzfeldt-Jacob

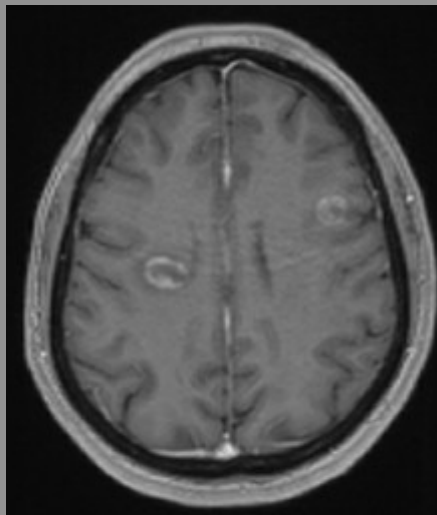
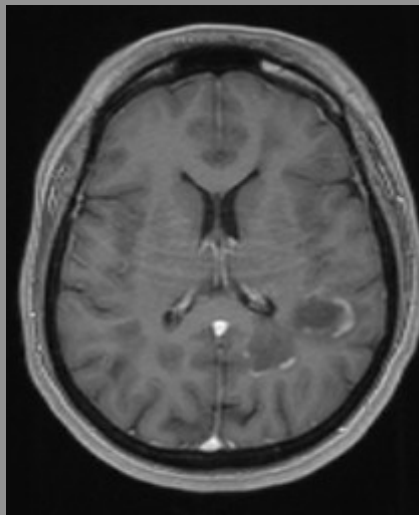
- Femme de 38 ans, 3 enfants, aide soignante
- aphasie depuis plusieurs jours
- douleur dentaire





Quelles diagnostics peuvent être évoqués

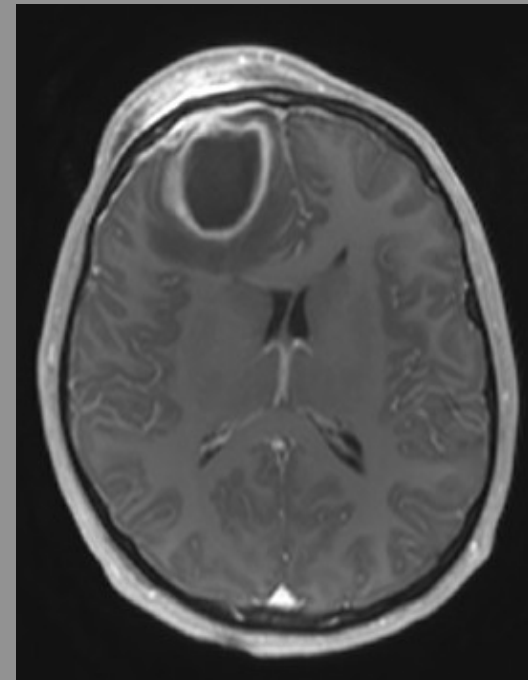
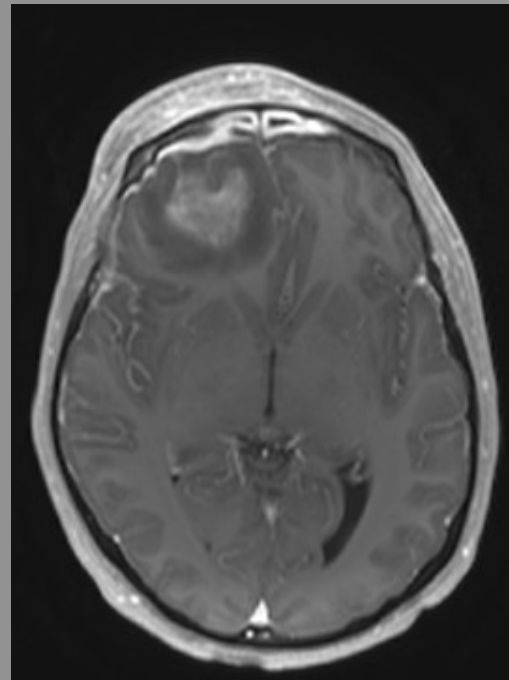
- Métastases
- Abscès multiples
- Lymphome multifocal
- Encéphalite
- ADEM



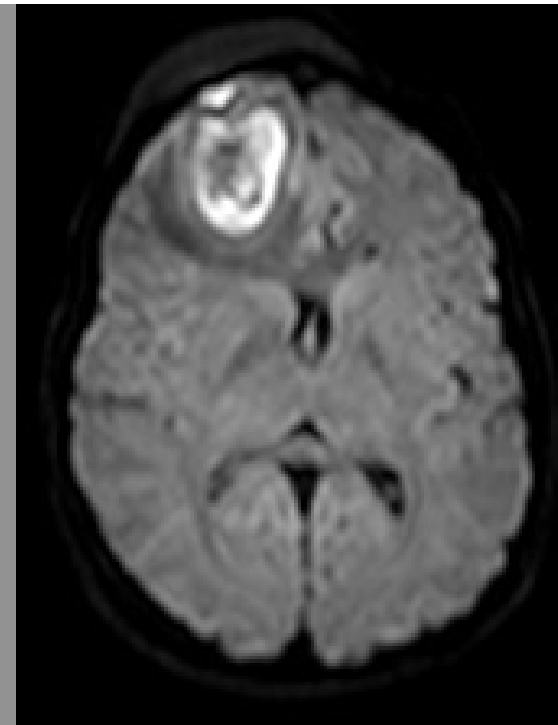
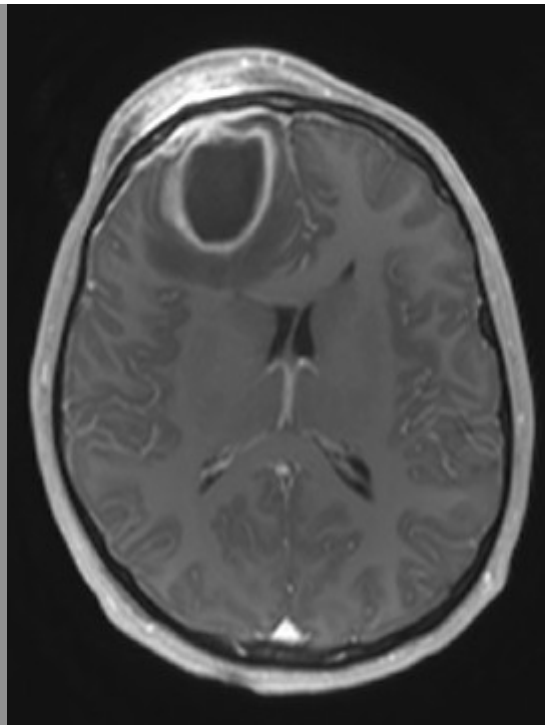
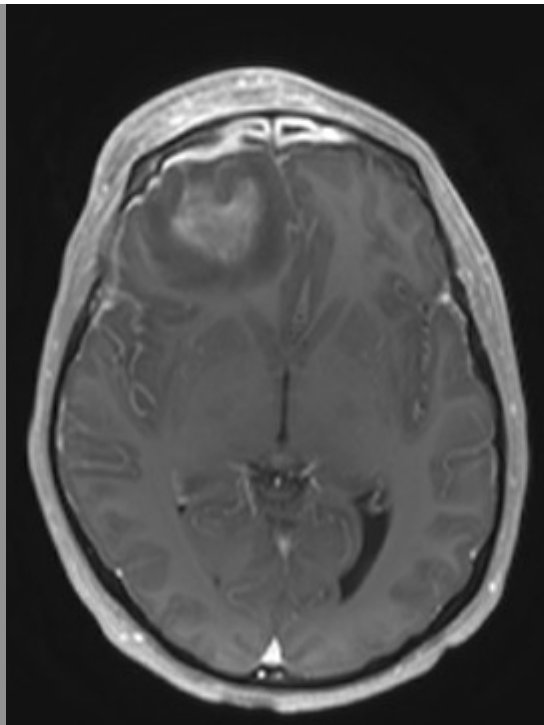
Au bout d'un mois, le nouveau contrôle IRM montre la disparition de toutes les lésions sans traitement, quel est le diagnostic retenu

- Métastases
- Abscès multiples
- Lymphome multifocal
- Encéphalite
- ADEM

- Homme, 28 ans
- TC sévère il y a une semaine
- Découverte d'un processus expansif au scanner
- bilan IRM

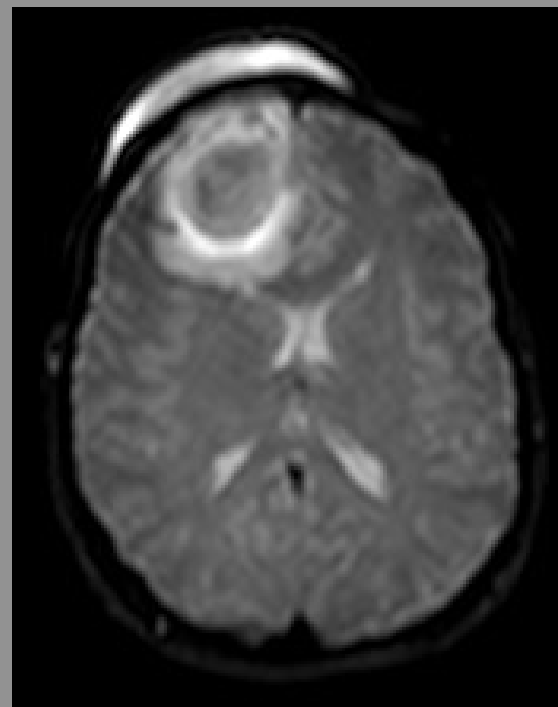


Quelle est la séquence indispensable au diagnostic ? DIFFUSION

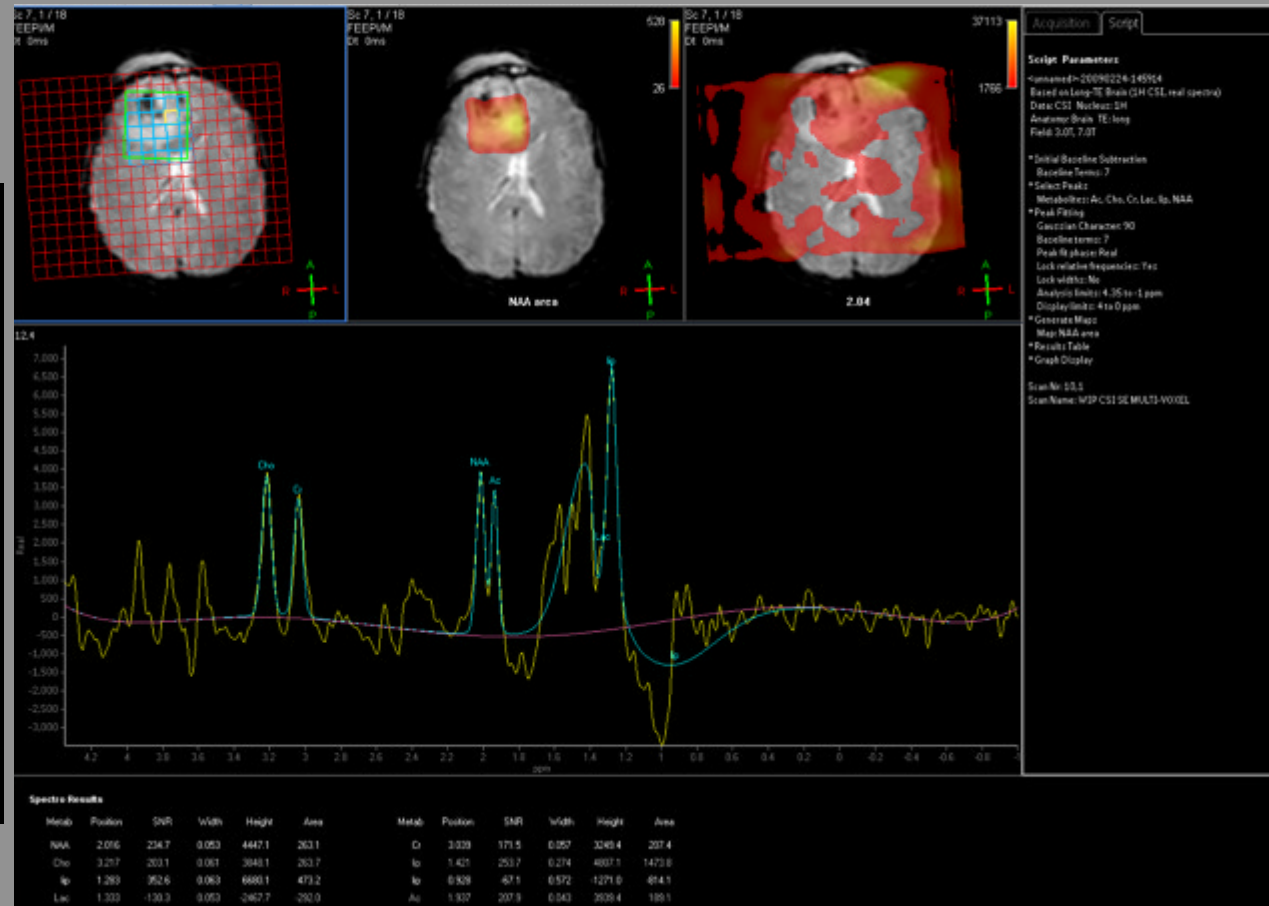
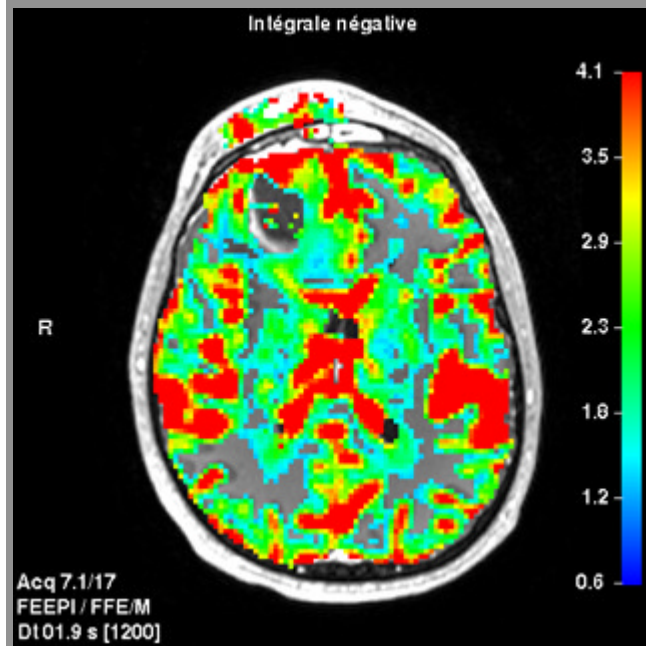


Quel diagnostic retenez vous ?

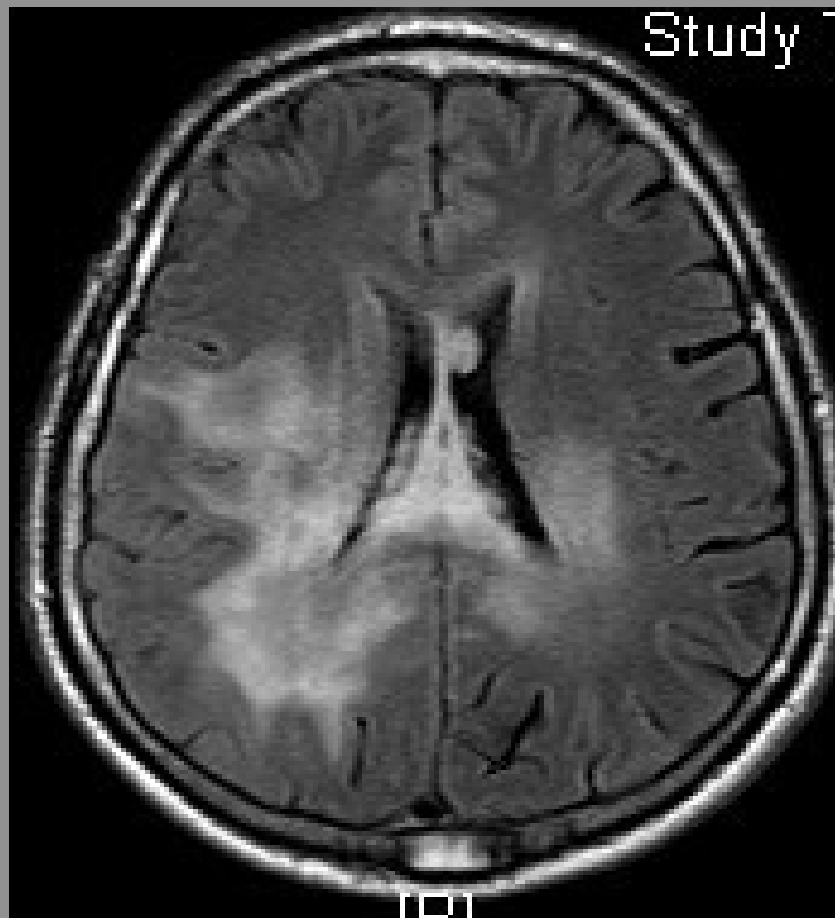
ABCES



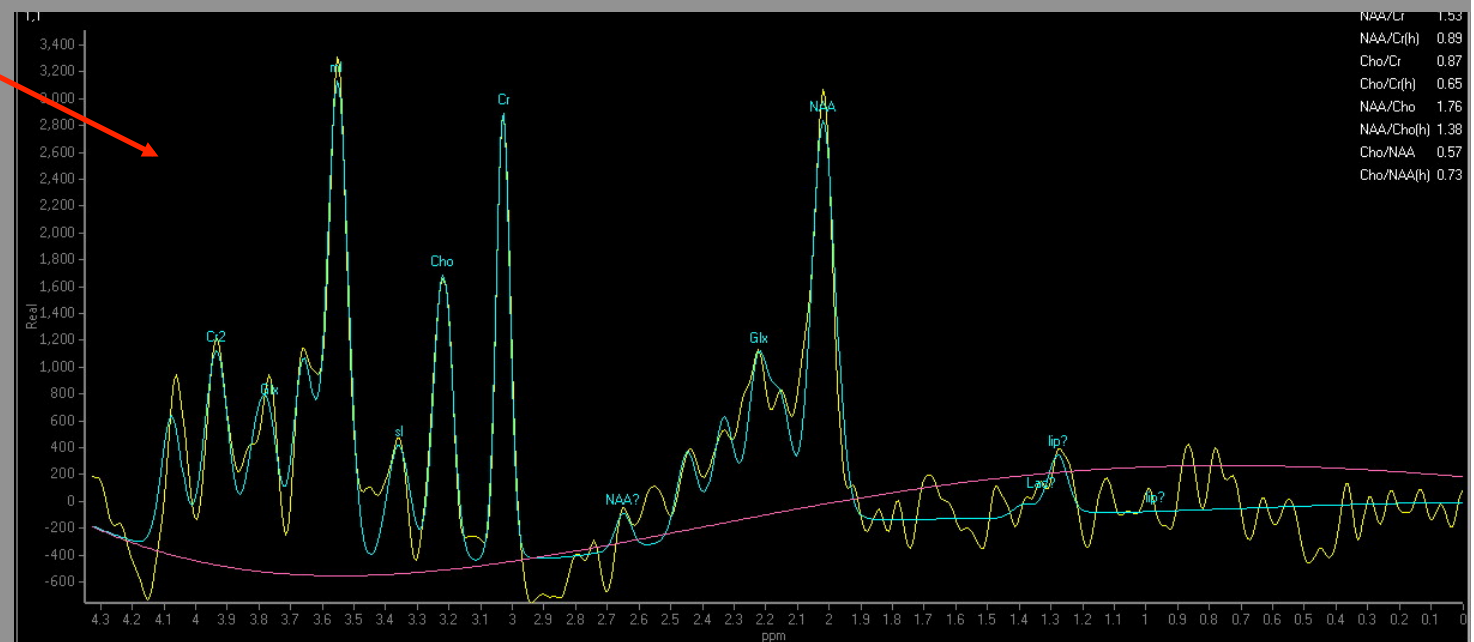
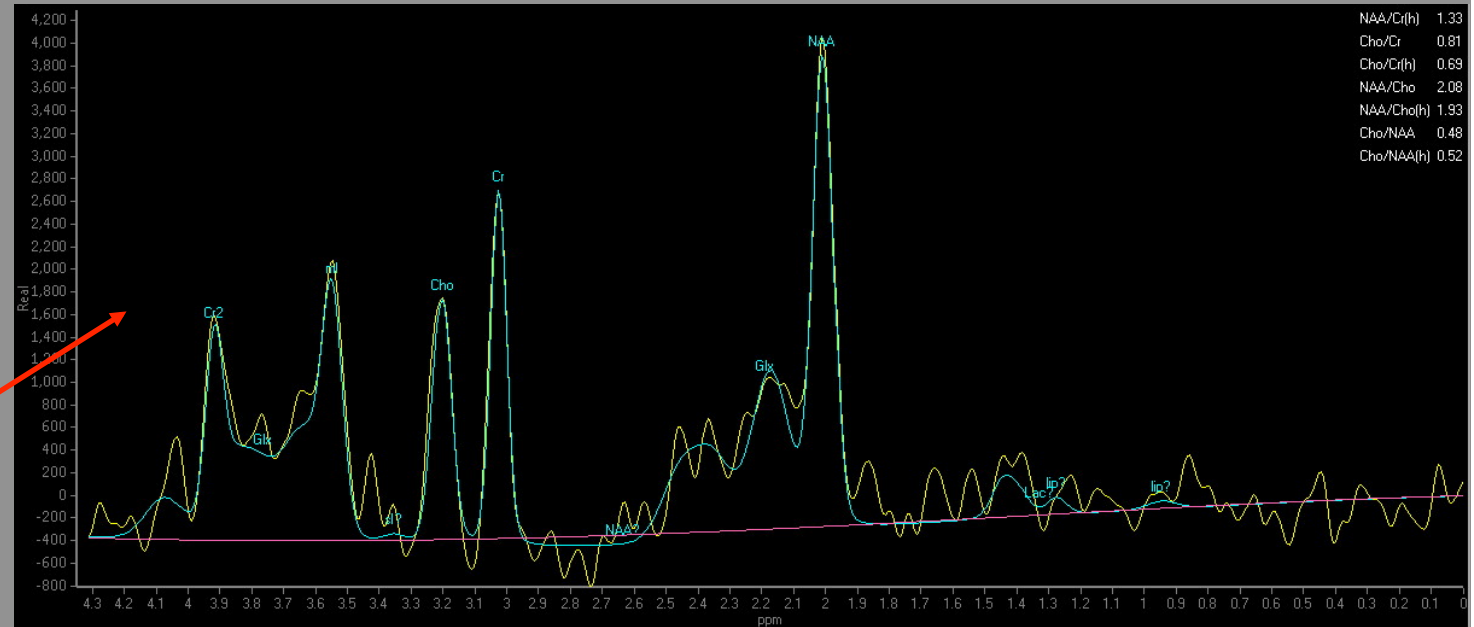
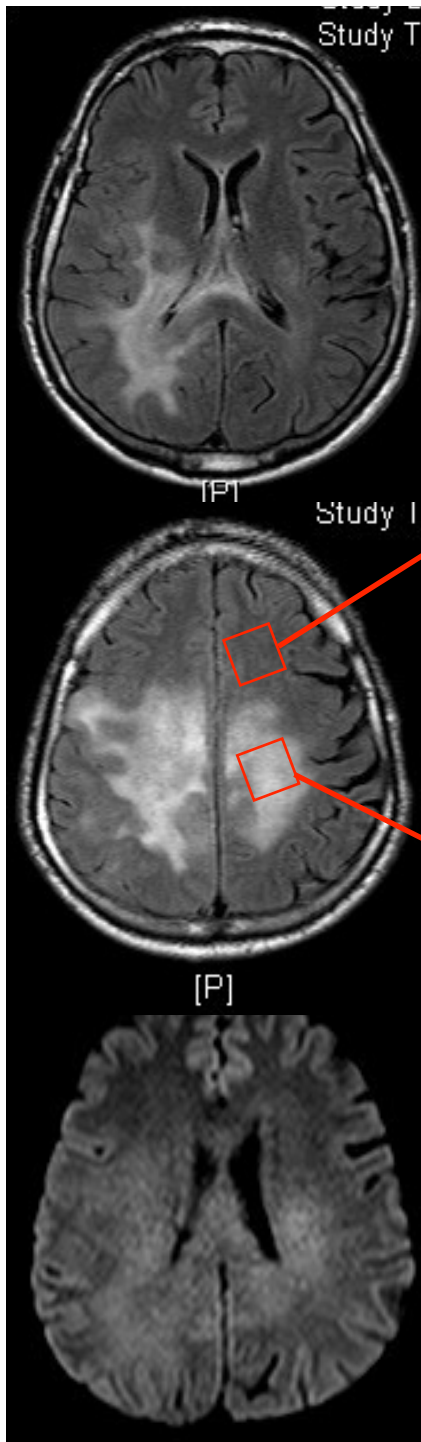
Abcès frontal suite à une brèche ostéoméningée



- Homme de 64 ans
- Deux crise d'épilepsie.

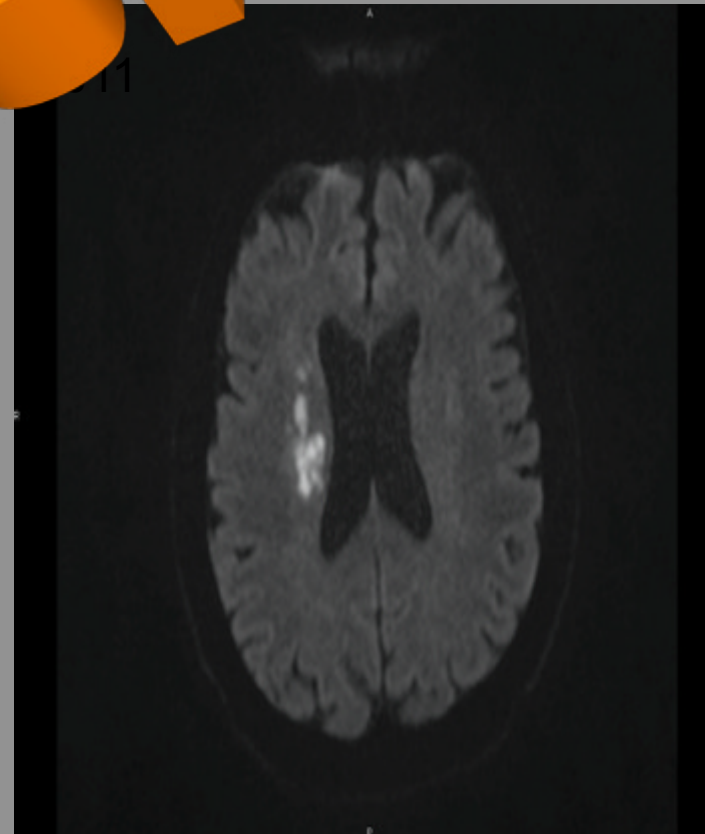
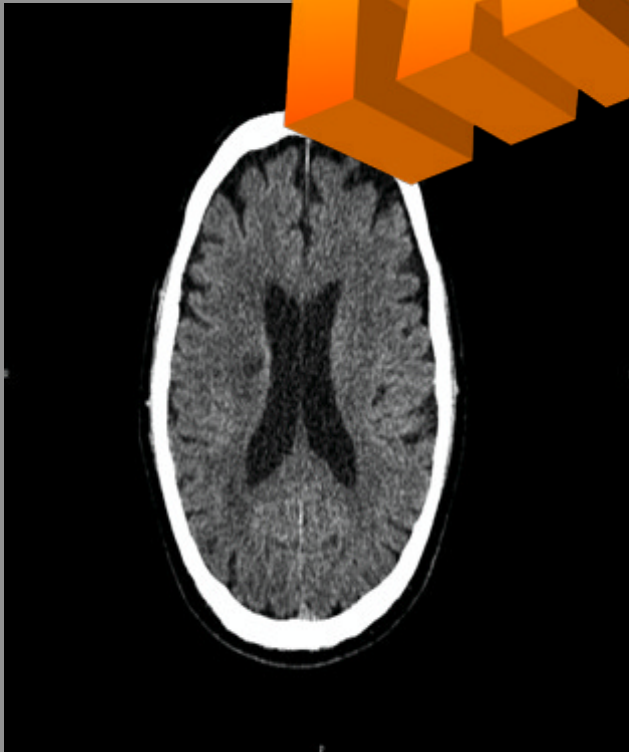


Gliomatose cérébrale



CAS n°1

FAST

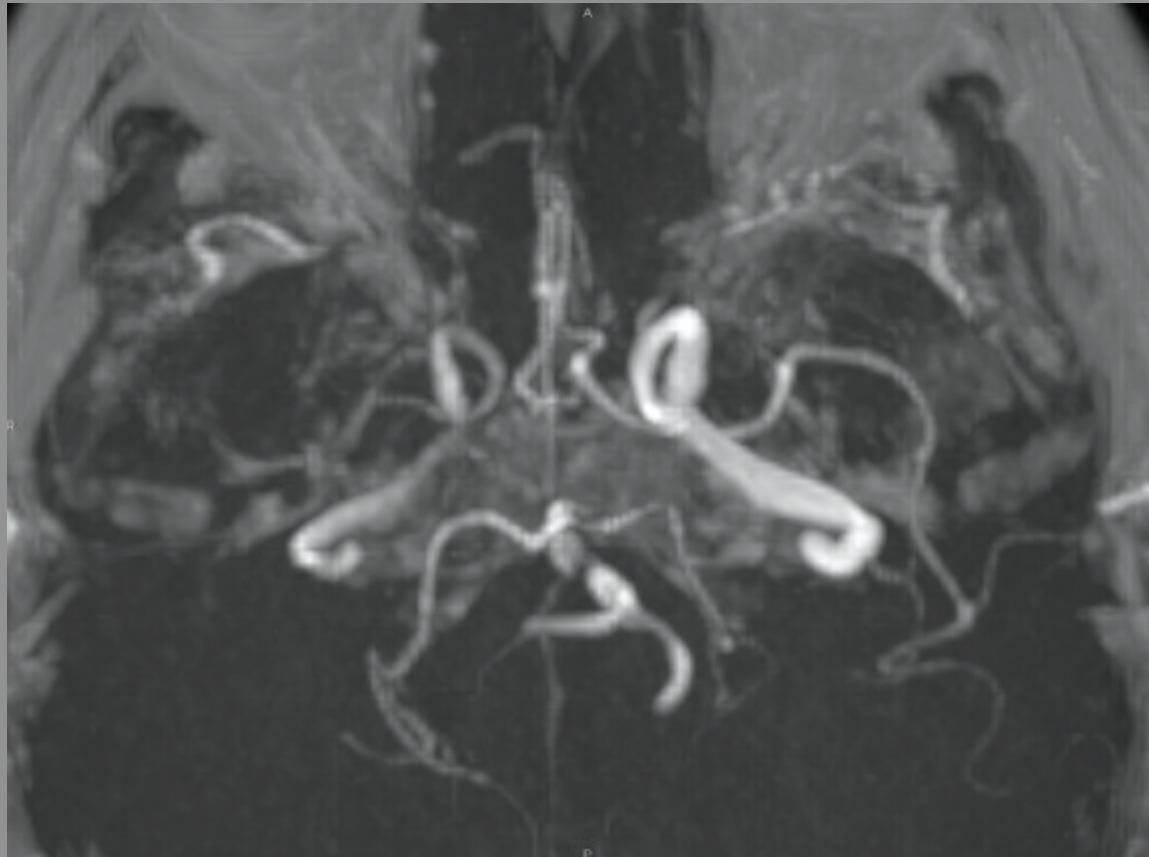


ANAES 2009:

« Réaliser une imagerie en extrême urgence autant que possible par IRM »

- En cas d'AIT, le risque de récurrence est élevé: 10 à 30% seront suivi d'un AIC dans les 90j (2,5 à 5% dans les 48H!! & 5 à 10% dans le mois!!)
- En cas d'AIC: fort risque d'aggravation dans les 48 1ères heures

Séquence supplémentaire?

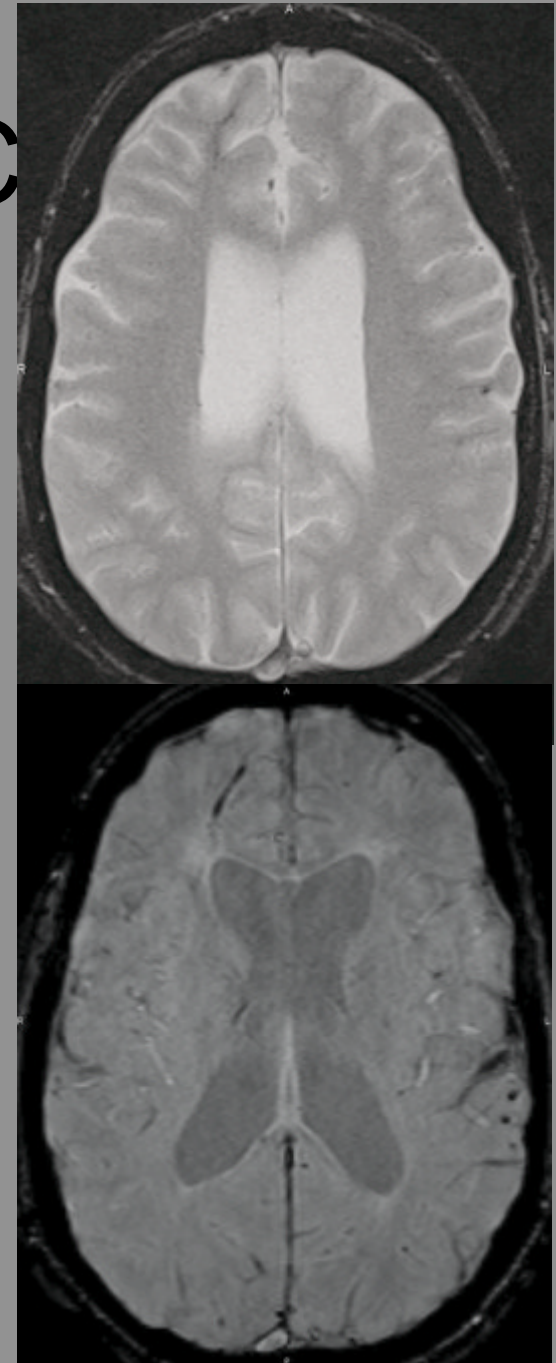


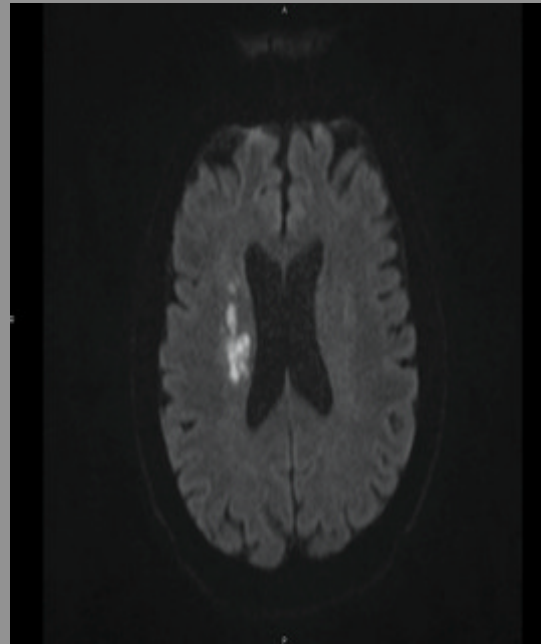
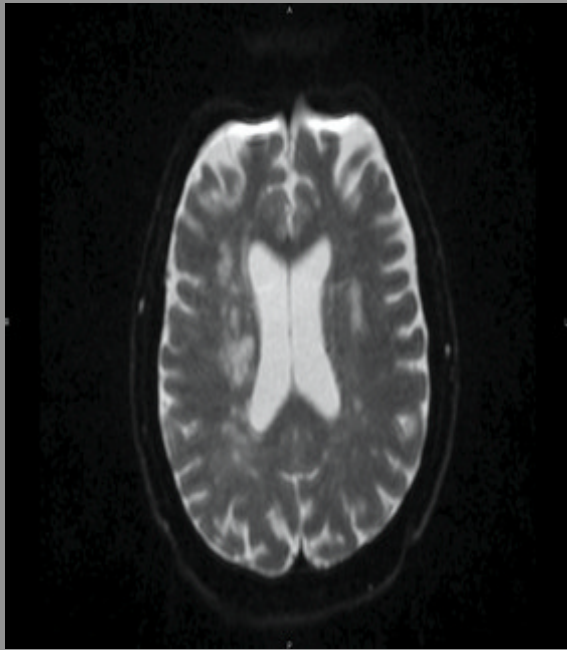
-> Unité Neuro-Vasculaire

Traitement par KARDEGIC et PLAVIX
Origine cardio-embolique suspectée
Contrôle ARM dans 4 mois

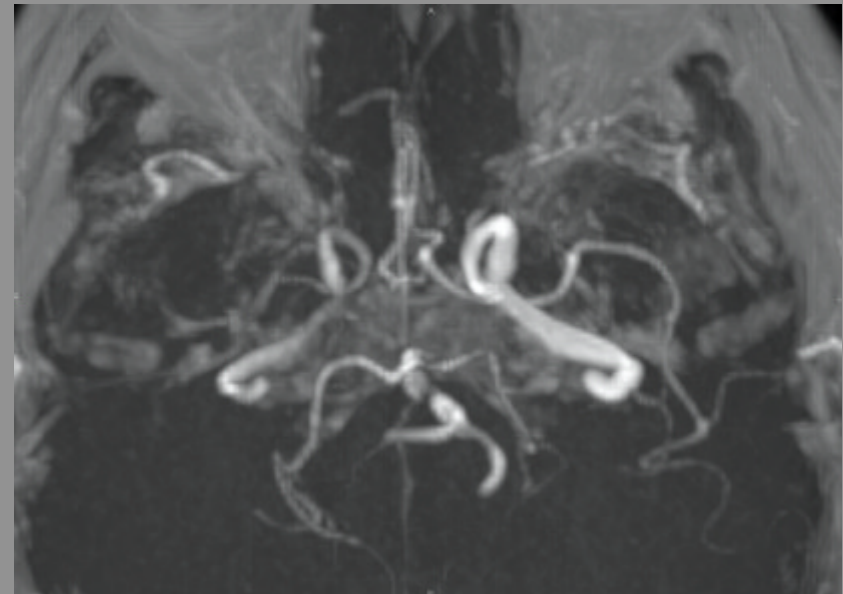
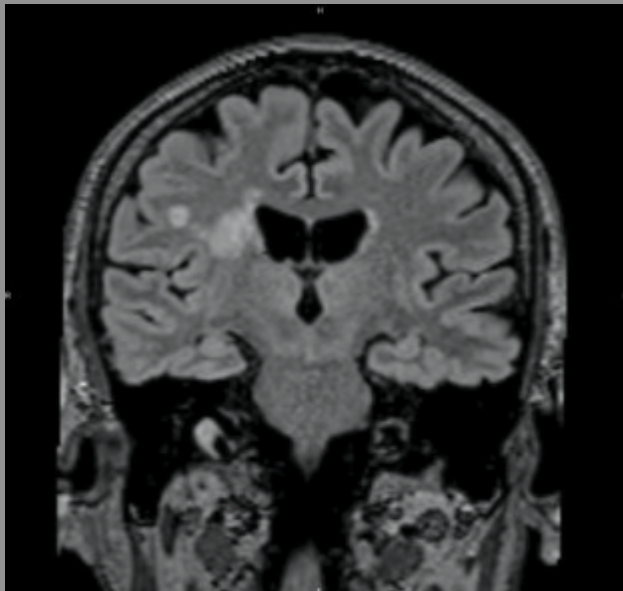
Protocole AVC

- 3D FLAIR
- ID et ADCm, IP
- Ax T2* et/ou séquence SWI
- Angio-IRM artérielle 3D TOF
- Angio-IRM veineuse (2D PC)
- (angio-MR TSA)

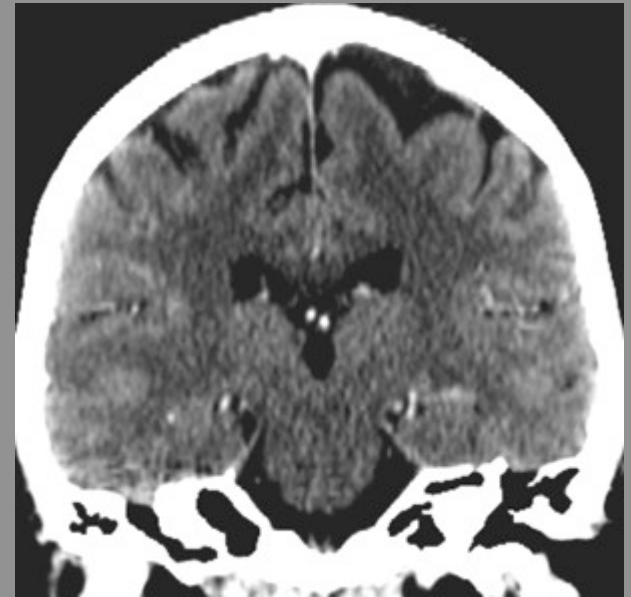
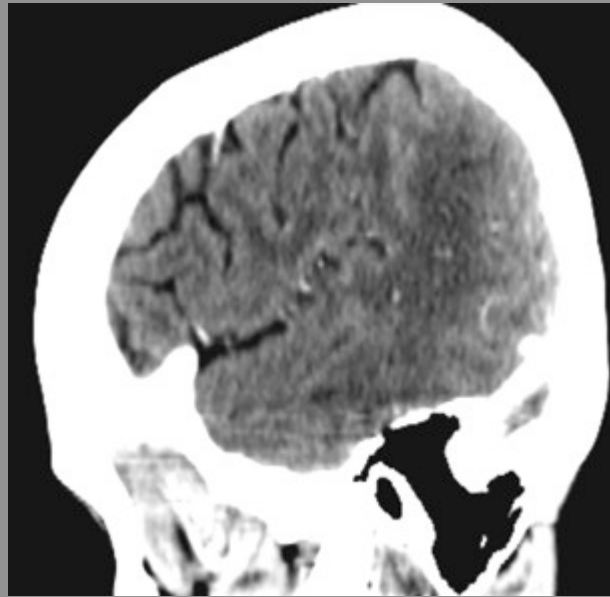
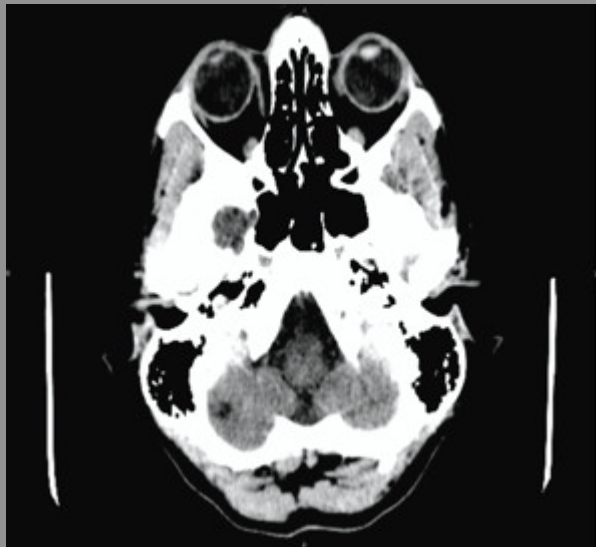


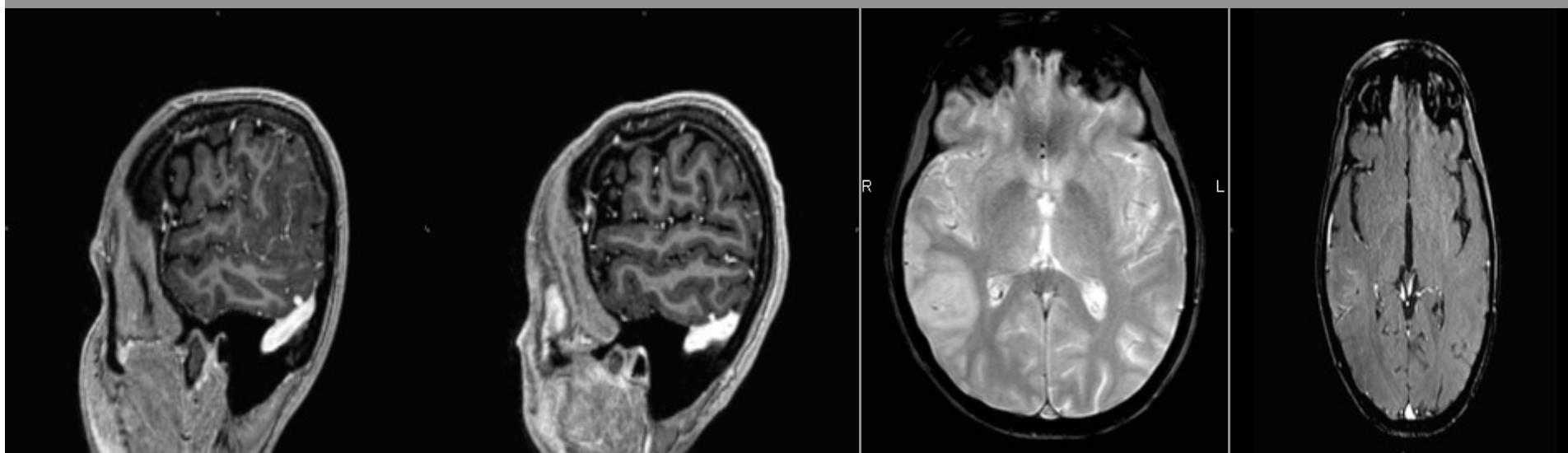
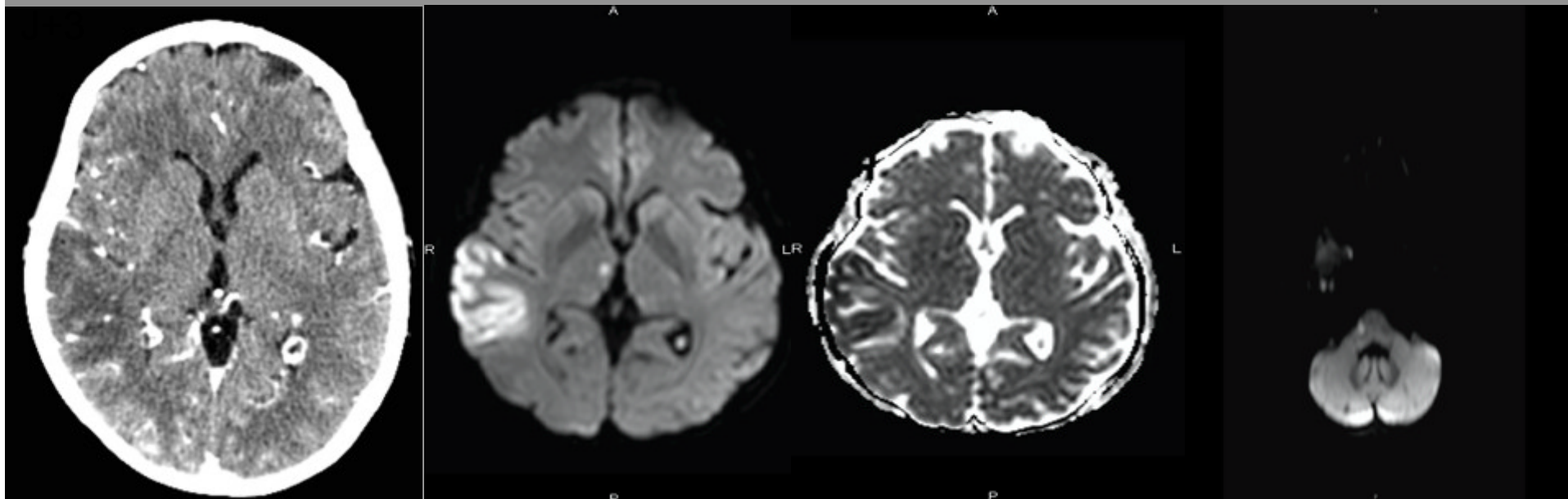


Origine cardio-embolique suspectée Kardegic



CAS 2





Indications de l'IRM dans le cas présent

- Facteurs de risque CV
- Symptomatologie non résolutive
- Anomalie préexistante (lacune)
- Signes précoces d'AIC au scanner:
 - 1/ dédifférenciation entre SB / SG
 - 2/ swelling
 - 3/ art. sylvienne ou tronc basilaire HD (thrombus)

Indications de l'IRM dans les vertiges

- IRM indiquée d'autant + qu'existent des troubles neurologiques centraux
- IRM indiquée en 1^{er} lieu selon le guide de bonne pratique de la SFR, quelque soit les résultats du scanner

1 - Vertiges brefs déclanchés par les mouvements

- **+++ VPPB**
- **fistules périlymphatiques (OM / OI)**
- **aNies de la CCO**
- **très rarement une sténose vasculaire (syst. VB)**
- **cause située dans le voisinage du V4**
[vertige (ou nystagmus) central positionnel (CPVN)]

2 - Vertiges de quelques minutes, récurrents

- **+++ maladie de Ménière**
- **++ migraine (30% dk)**
- **épilepsies sensorielles vestibulaires**
- **± otospongiose**
- **± processus tumoraux ou infectieux** affectant le labyrinthe ou le CAI
- **± conflits NV**

3 - Vertiges installés depuis plusieurs heures ou jours

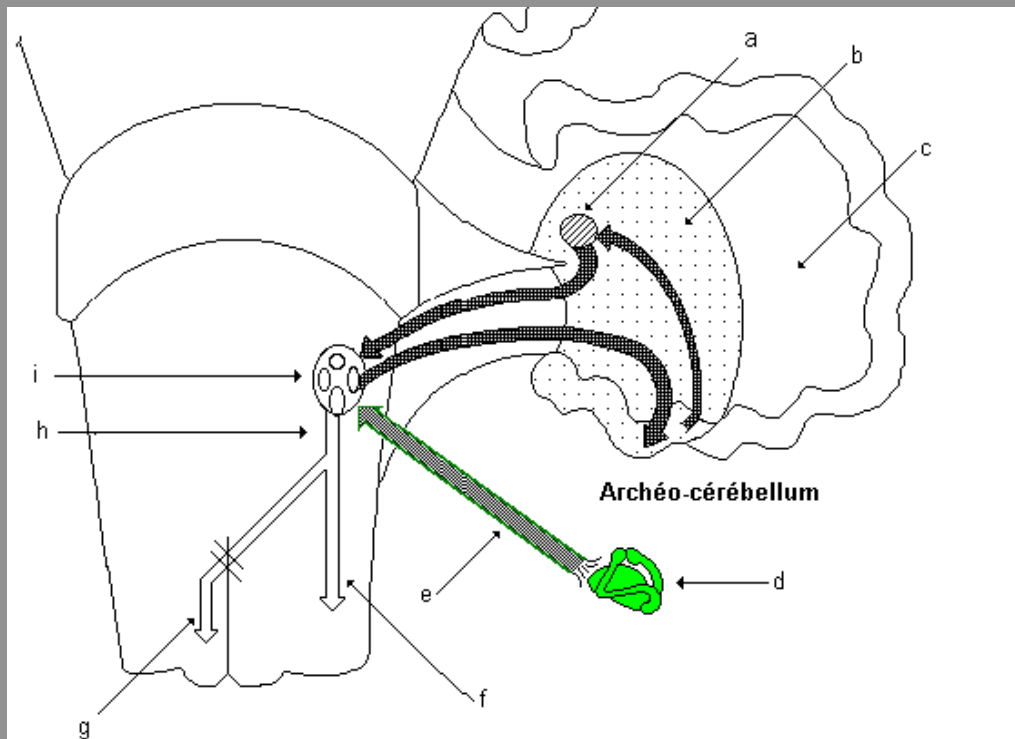
3.1 - Troubles de l'équilibre et de l'audition

=> +++ LABYRINTHE

- Labyrinthites infectieuses
- Tumeurs intra-labyrinthiques (schwannome)
- Hémorragies intra-labyrinthiques
- Fistule due à un cholestéatome (CSC lat.)
- Fractures trans-labyrinthiques (pneumo-labyrinthe)

3.2 - Sans troubles de l'audition

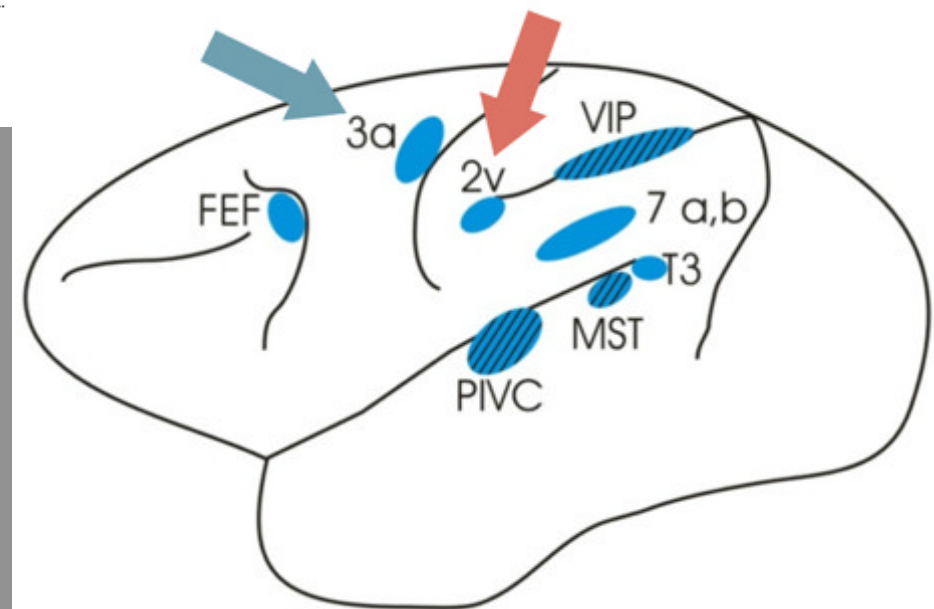
- +++ Névrite vestibulr « a frigore »
- Sd de RAMSAY HUNT (HSV1)
- => Etudier les **voies vestibulaires** :
 - Tumeurs pariétales
 - 5% des SEP
 - AVCi (3.4% des vert.):
 - PICA, AICA, SCA
 - ± mésencéphalique ou thalamique
 - AVCi du cortex pariéto-insulaire (!)



a : Noyau du Toit (du 4ème ventricule). b : Lobe Flocculo - Nodulaire. c : Cervelet.
d : Appareil vestibulaire. e : Nerf Vestibulaire. f : Faisceau Vestibulo - spinal direct.
g : Faisceau Vestibulo - spinal croisé. h : Faisceau Vestibulo - spinal.
i : Noyau Vestibulaire.

voies vestibulaires

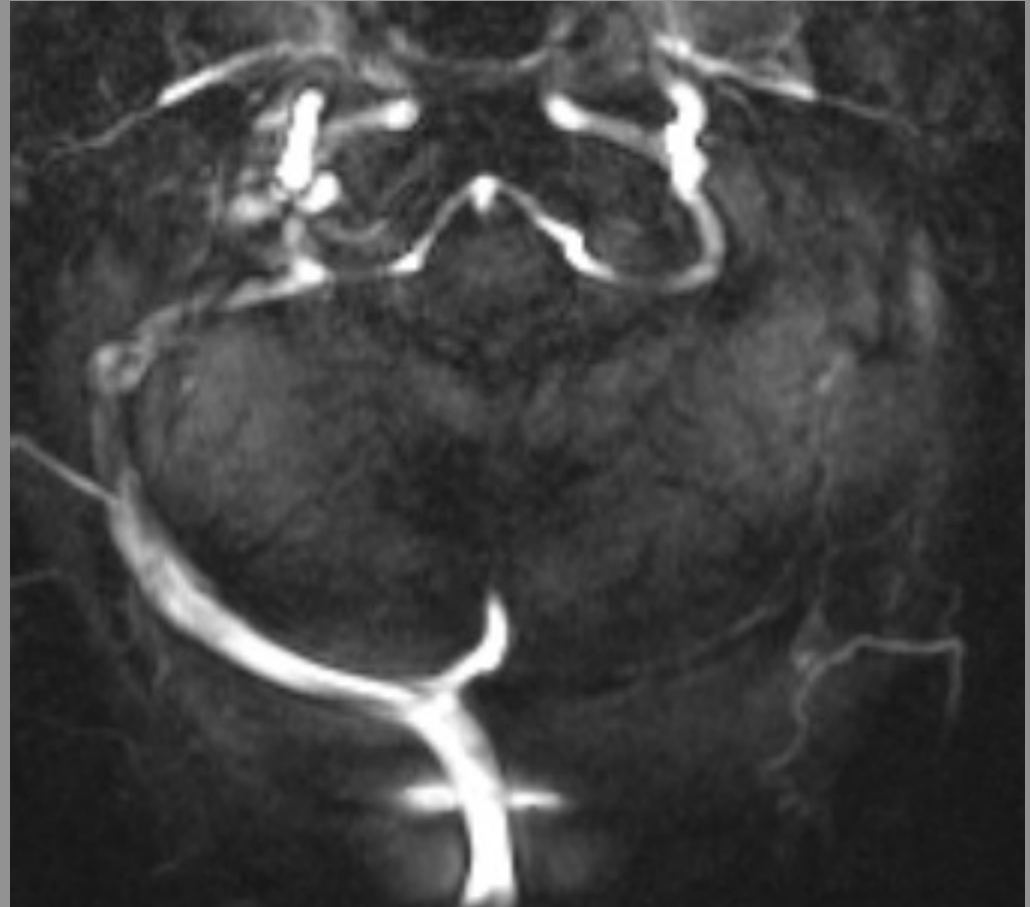
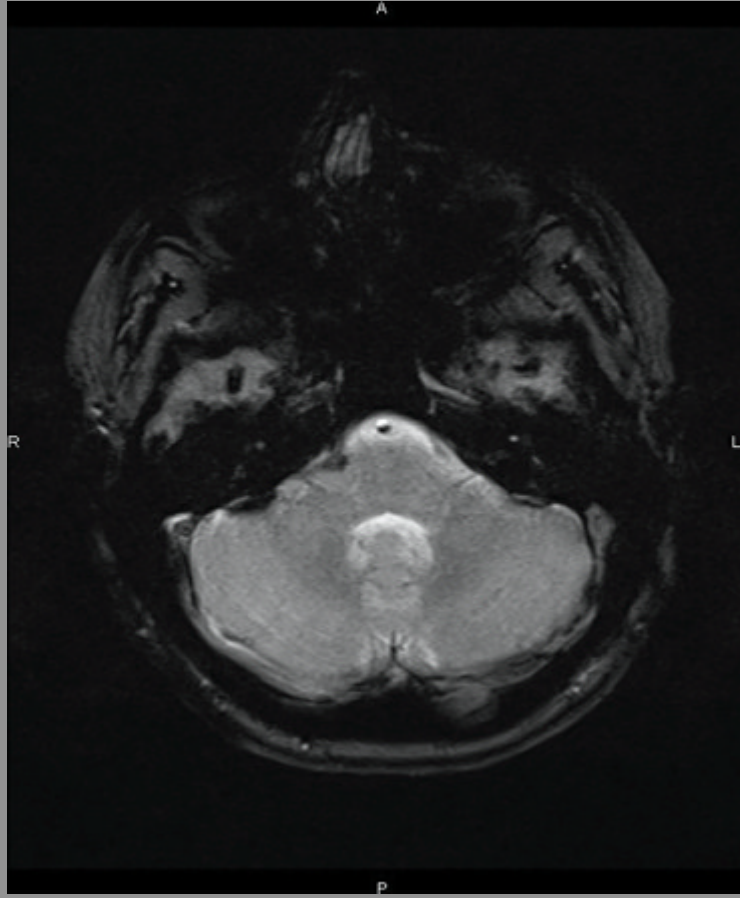
J Casselman
www.sfrnet.org



Protocole IRM

- 3D FLAIR
- CISS 3D
- 3D TOF Willis (Angio-MR TSA)
- Gadolinium: 3D / rochers (et/ou 3D sur l'encéphale)

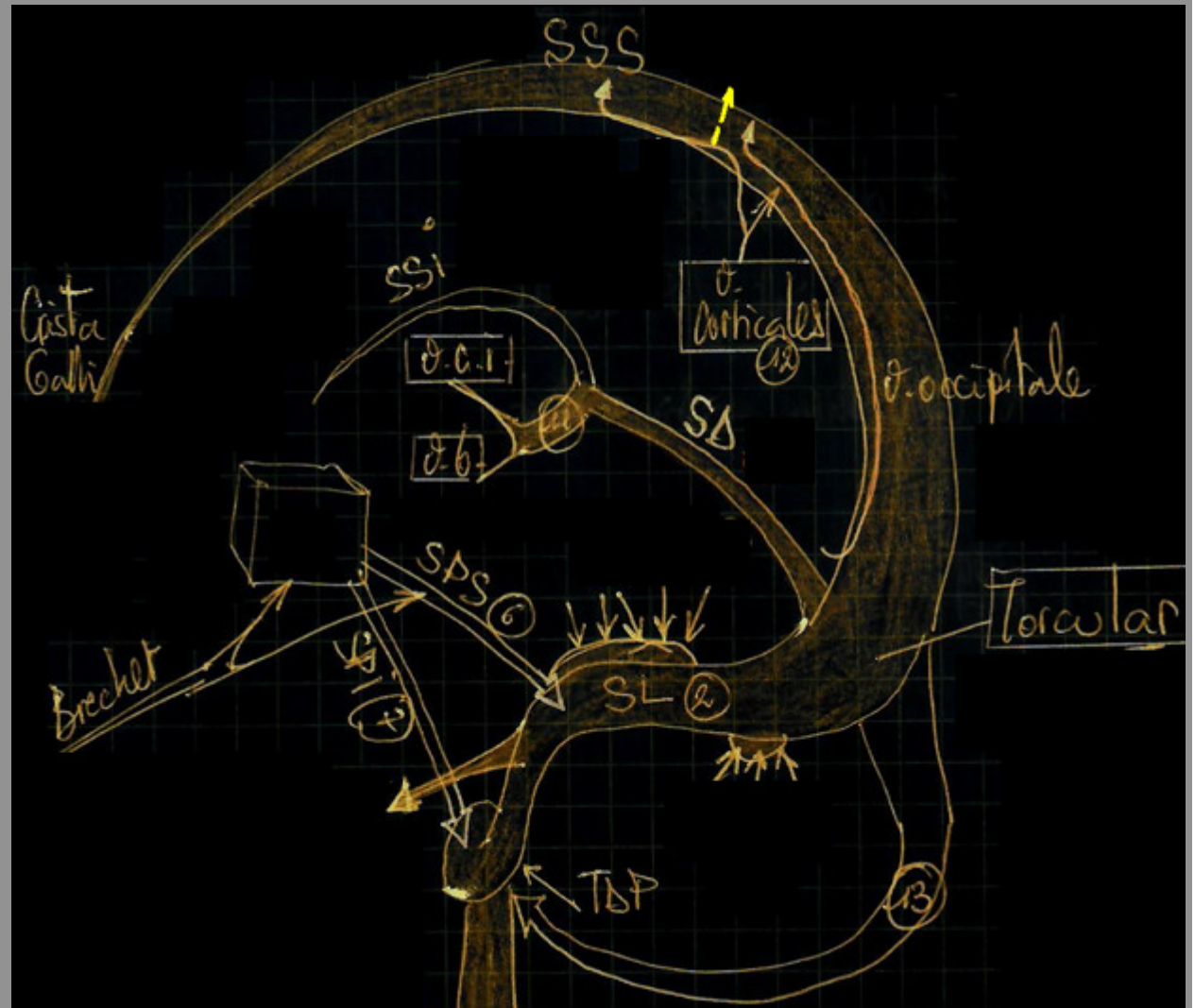
CAS n°3

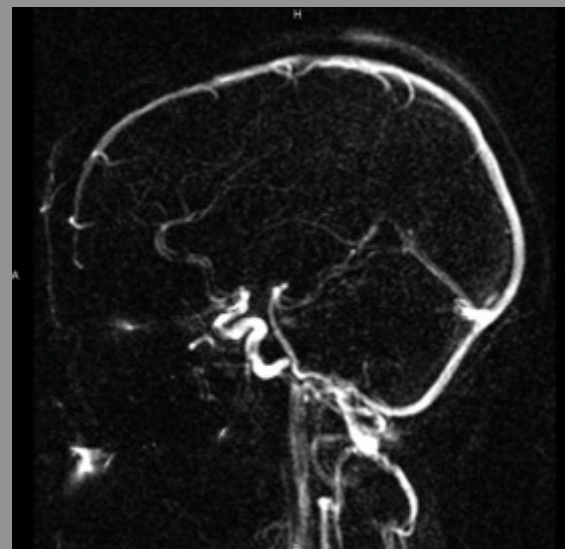
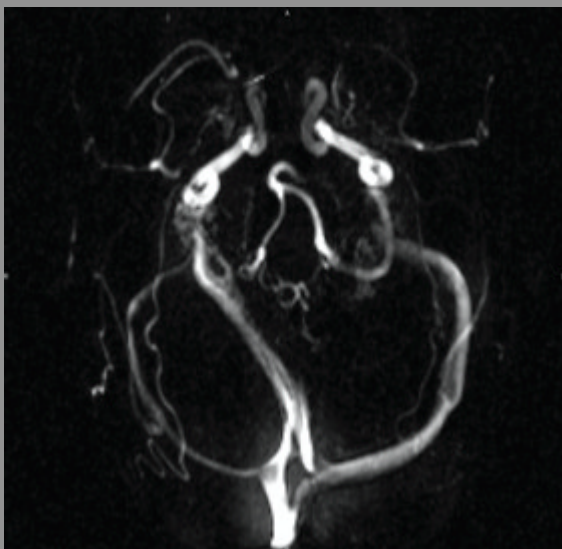
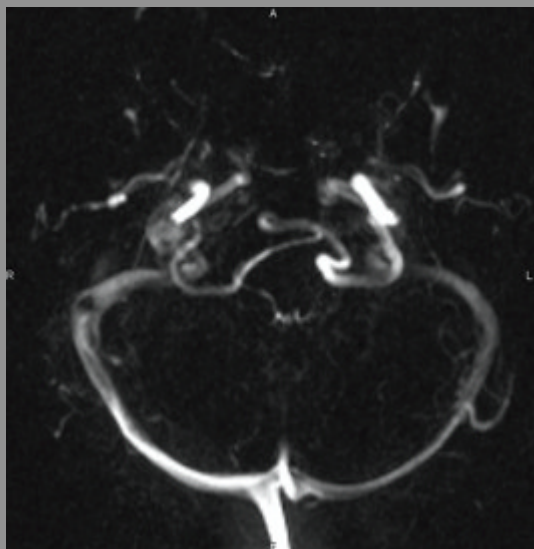
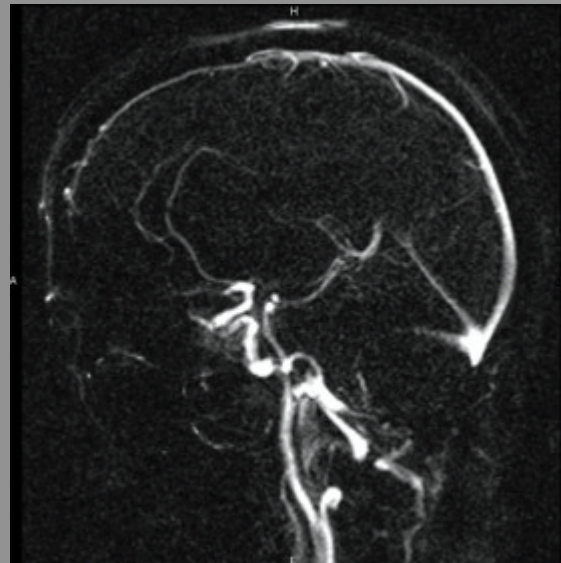
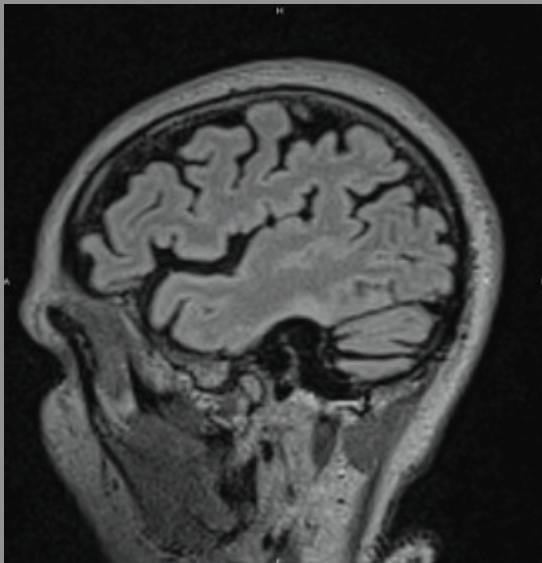
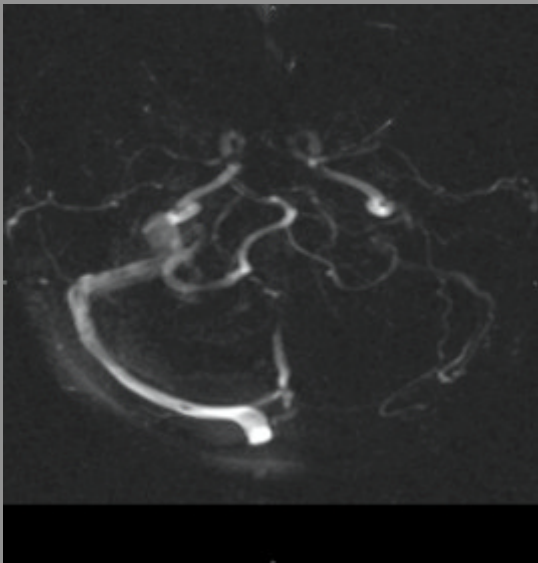


Séquence supplémentaire?

Variantes des sinus durs

- 1/3 ant. du SSS
- SL très souvent asymétriques
- Un SL draine une moitié de la FCP
- SSI inconstant
- Sinus occipital



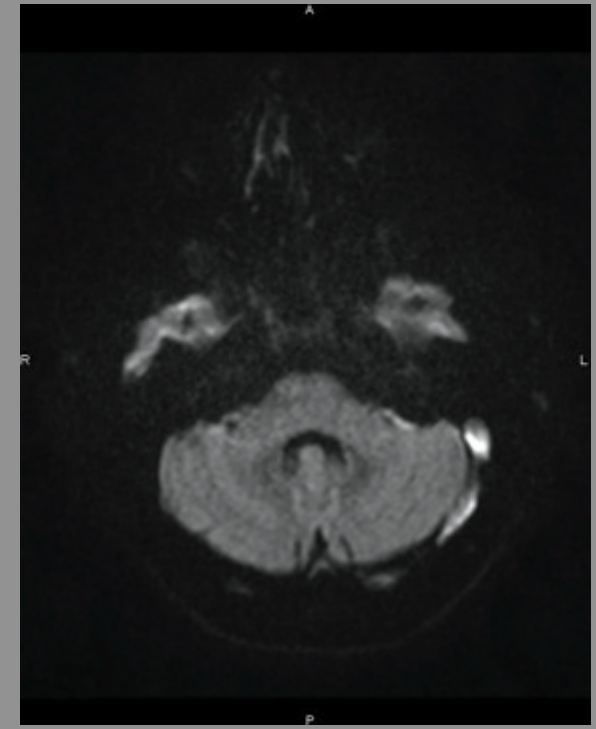
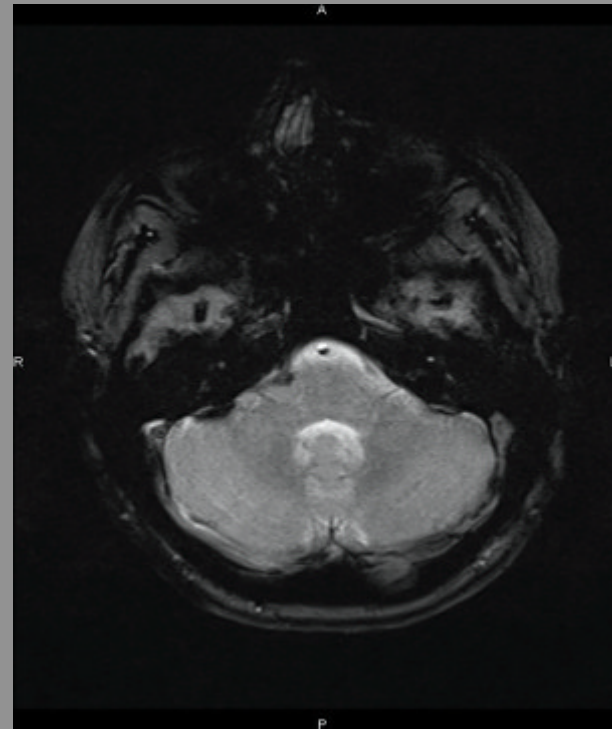
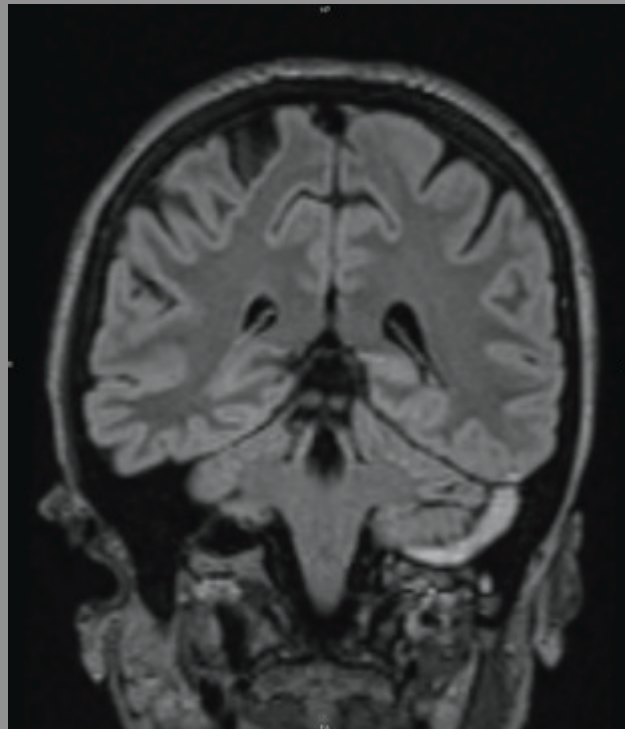
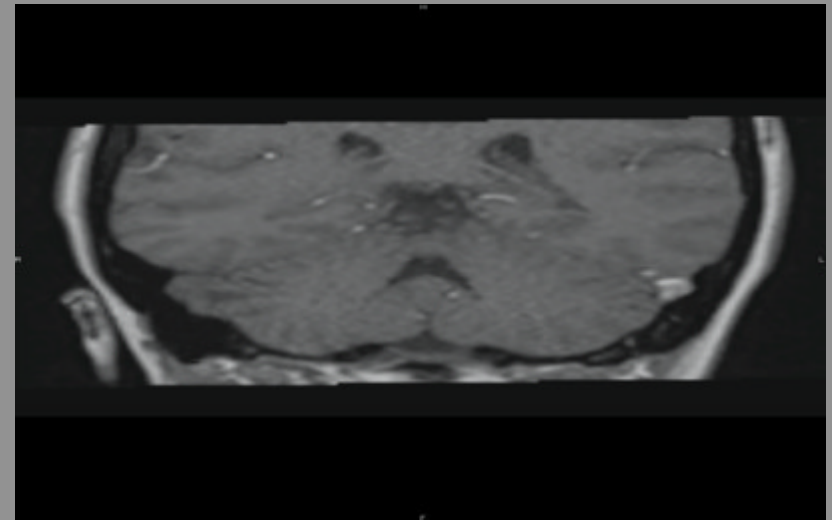


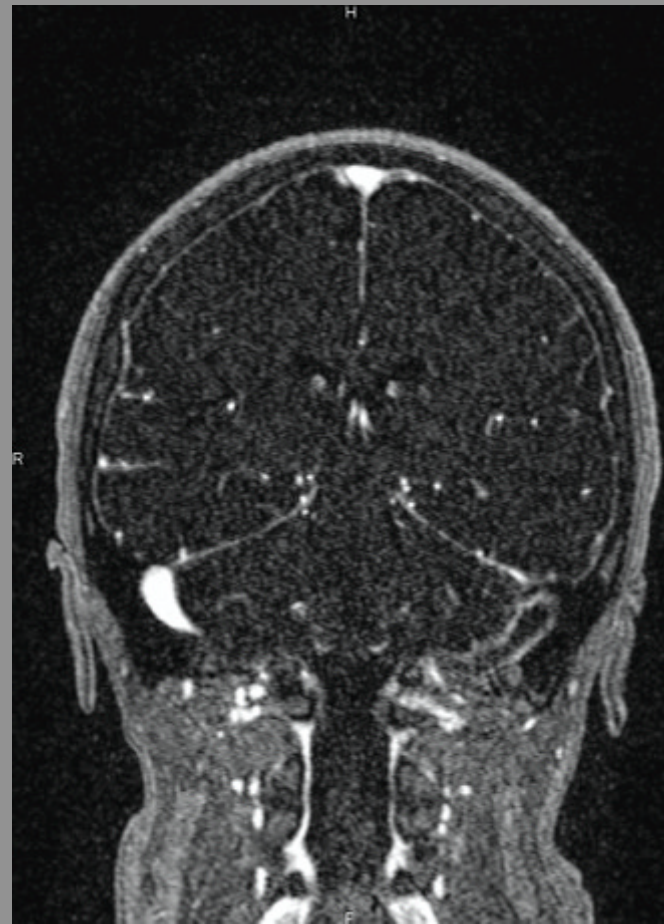
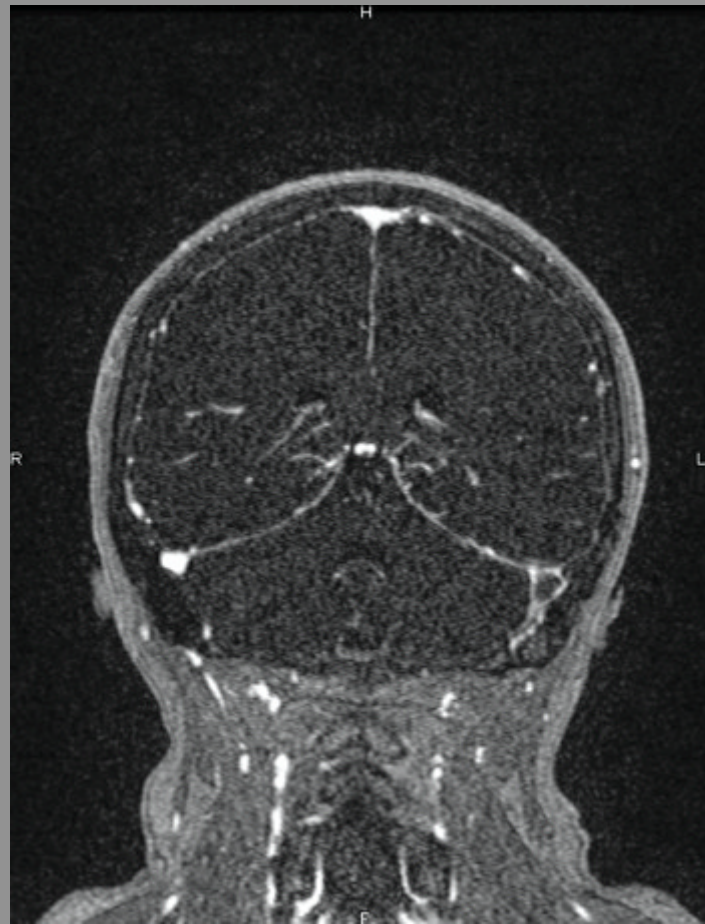
Thrombophlébites cérébrales

- 0,5% des AVC en France
- cliniquement très polymorphes
- héparinothérapie I.V. en urgence
- 75% sans sql, 22% avec sql, 3% de décès
- **hyper-coagulabilité** => risque x30 (déficit en prot. C ou S, antithrombine ou plasminogène; mutation du fact. V ou II...)
- **prise d' OP** => risque x13
- **Behçet, SAPL, LED**
- intoxication au **CO**
- rarement d' origine infectieuse
- **20-35% sans cause retrouvée**

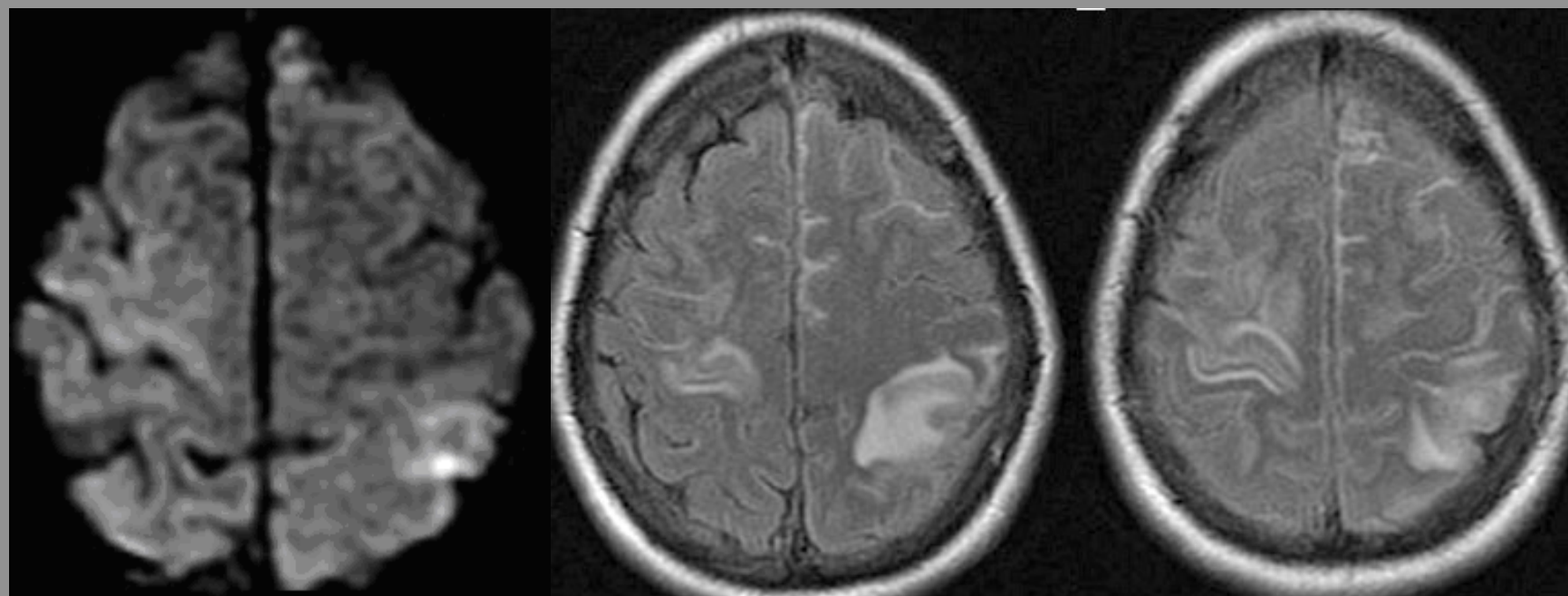
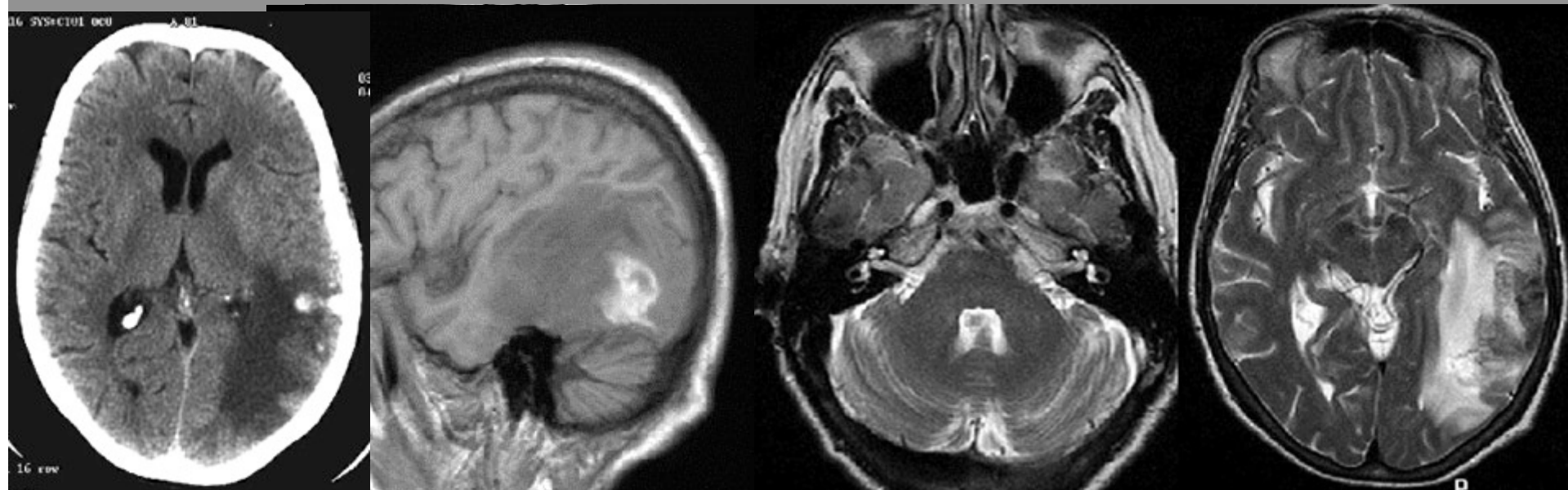
Imagerie des thrombophlébites cérébrales

- TDM: normal in 25%
- **Pas toujours de retentissement parenchymateux**
- Signal du thrombus en IRM:
 - phase A : isoT1, hT2
 - phase subA : HT1 et HT2
 - phase chro : isoT1 HT2
- **Fx+**: flux lents, granulations, variantes, graisse intra-sinusale



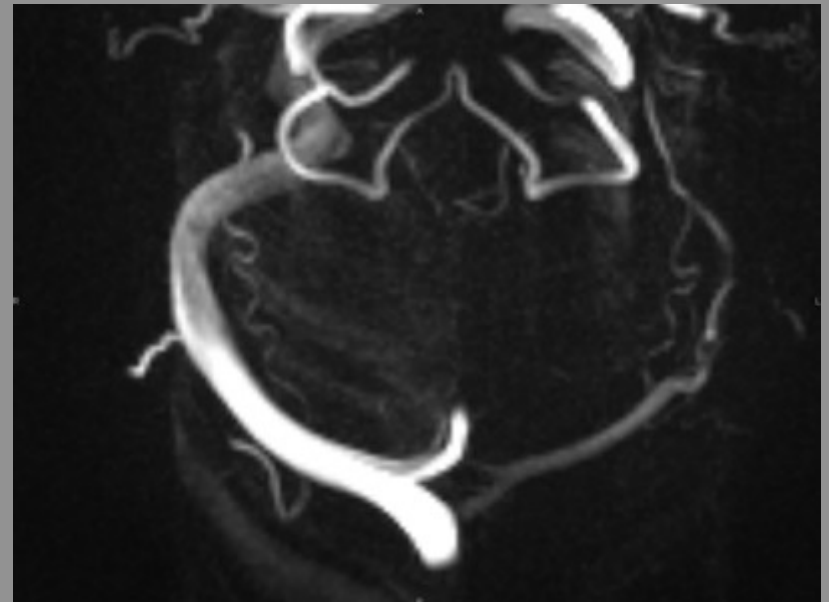
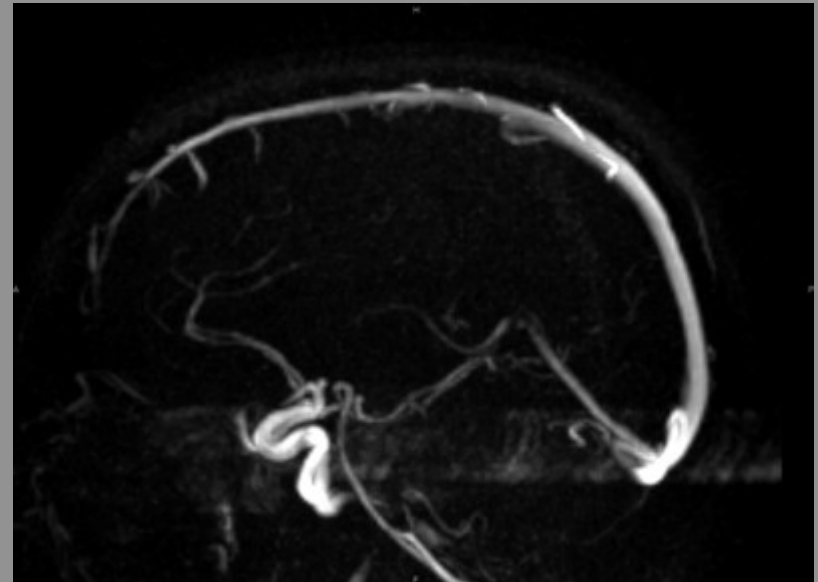


- LED et vascularites éliminés
- Échodoppler veineux jugulaire: pas de thrombose
- Anticoagulant circulant (antiprothrombinase)
- Héparinothérapie IV puis relai par AVK
- Pillule OP minidosée stoppée

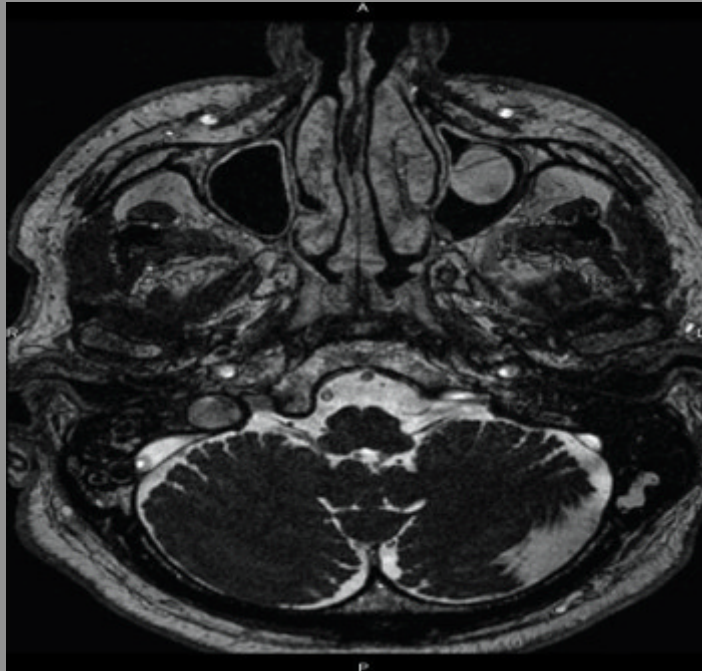


Protocole IRM

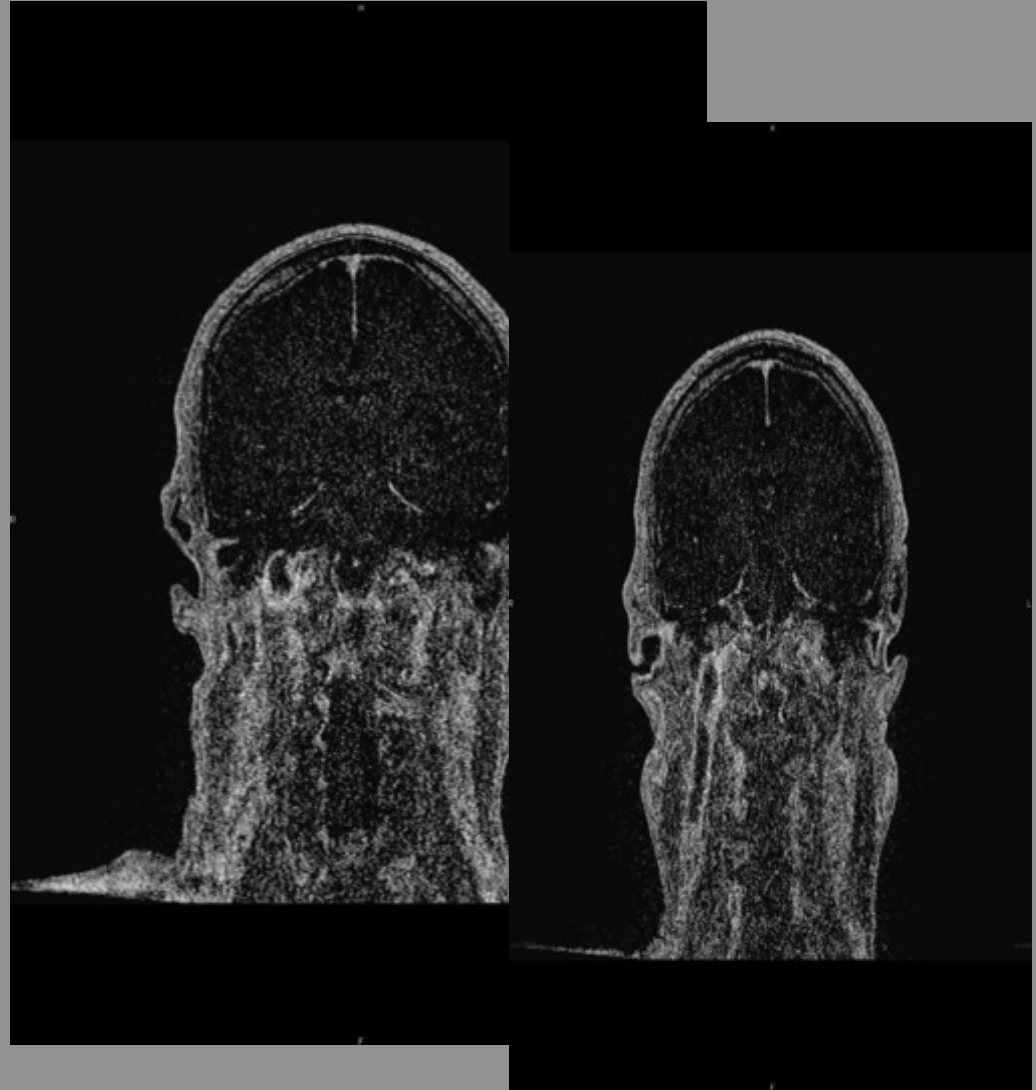
- 2D ou 3D PC ++
- 2D ou 3D TOF
- 3D EG Gd +++
- aMR 3D avec Gd
- T2* ou SWI



CAS n°4



Diagnostic?



[*Int J Otolaryngol.*](#);2010. Tom P. B. Handley

Collet-Sicard Syndrome from Thrombosis of the Sigmoid-Jugular Complex: A Case Report and Review of the Literature

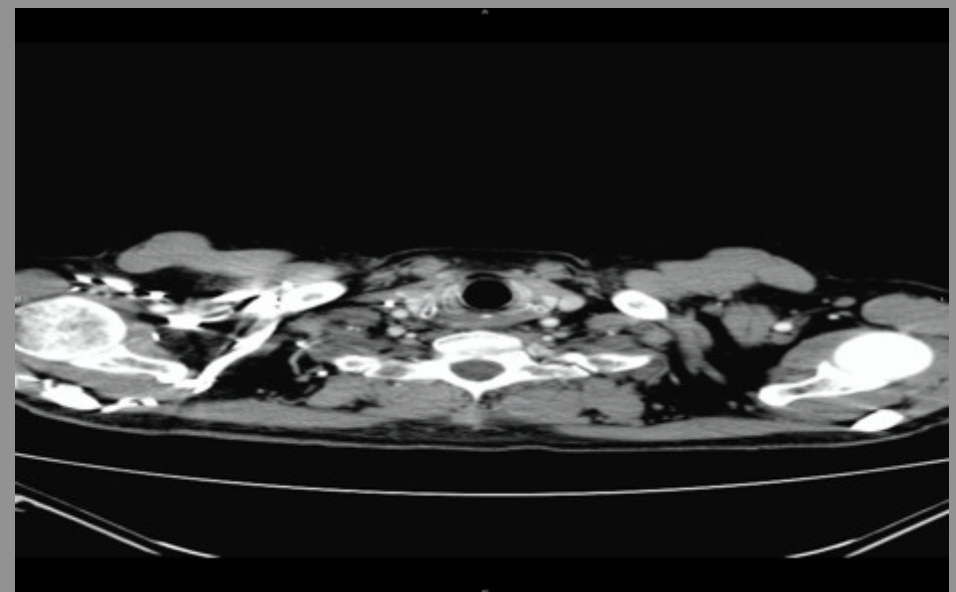
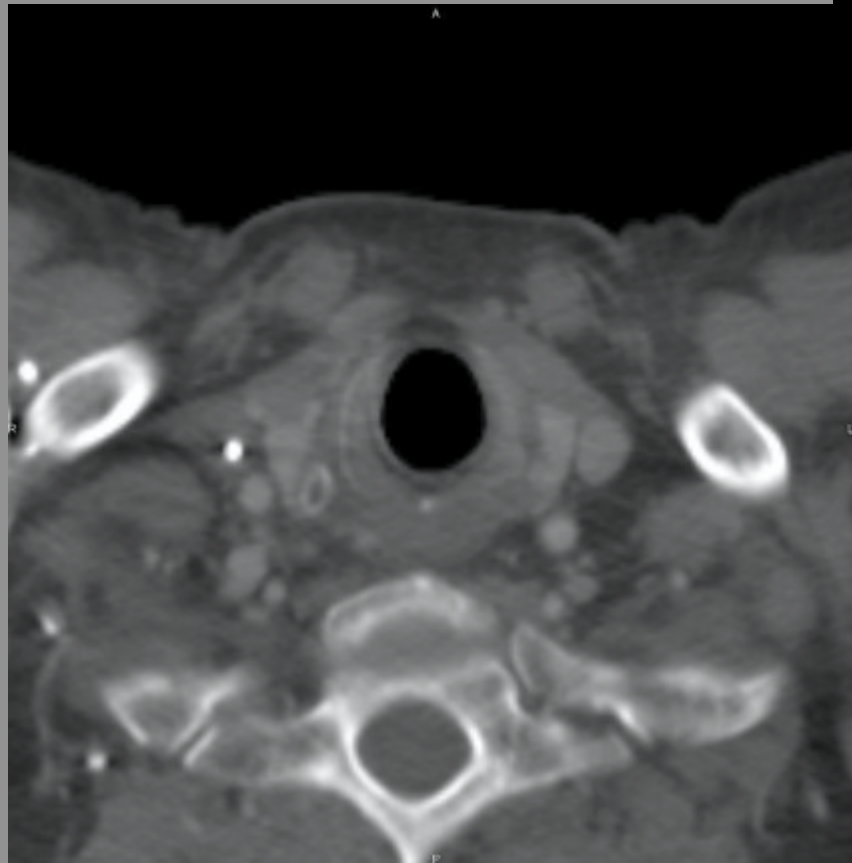
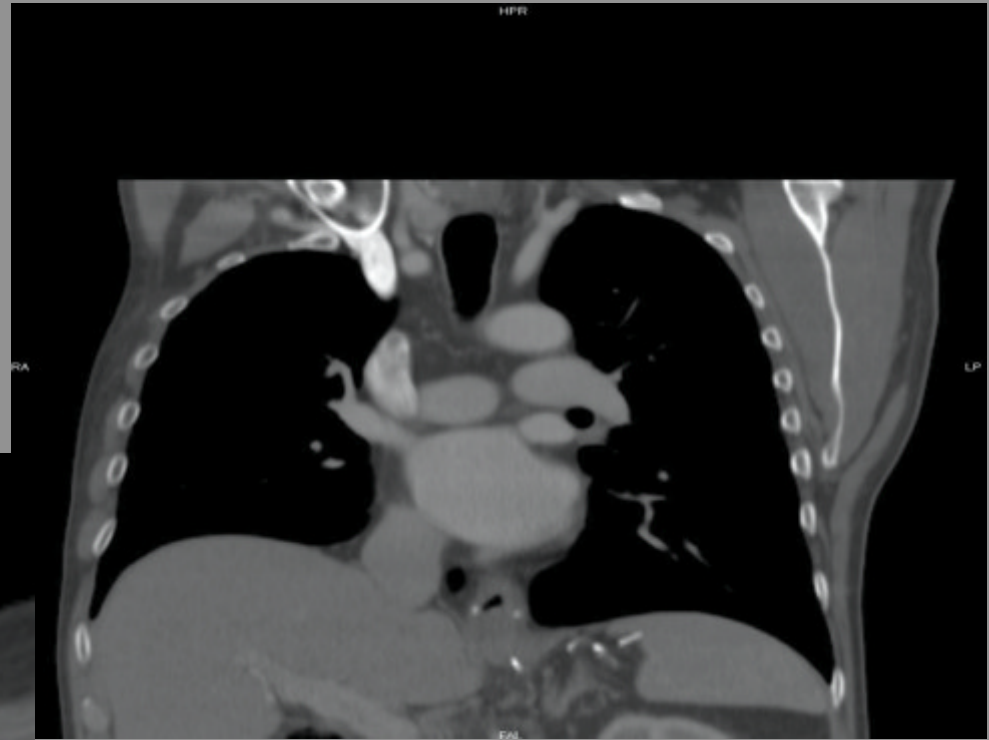
Thrombose d' une veine jugulaire interne

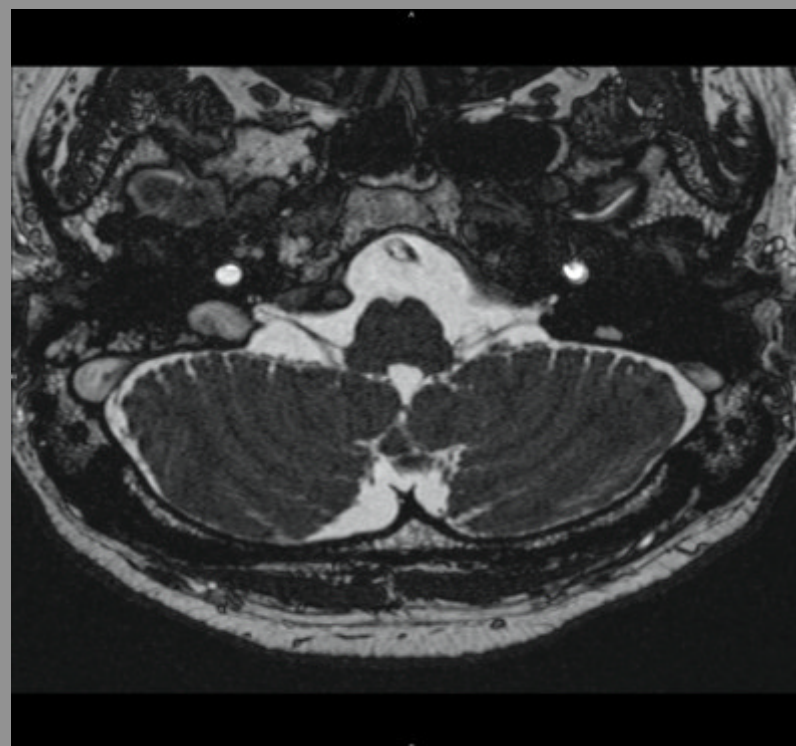
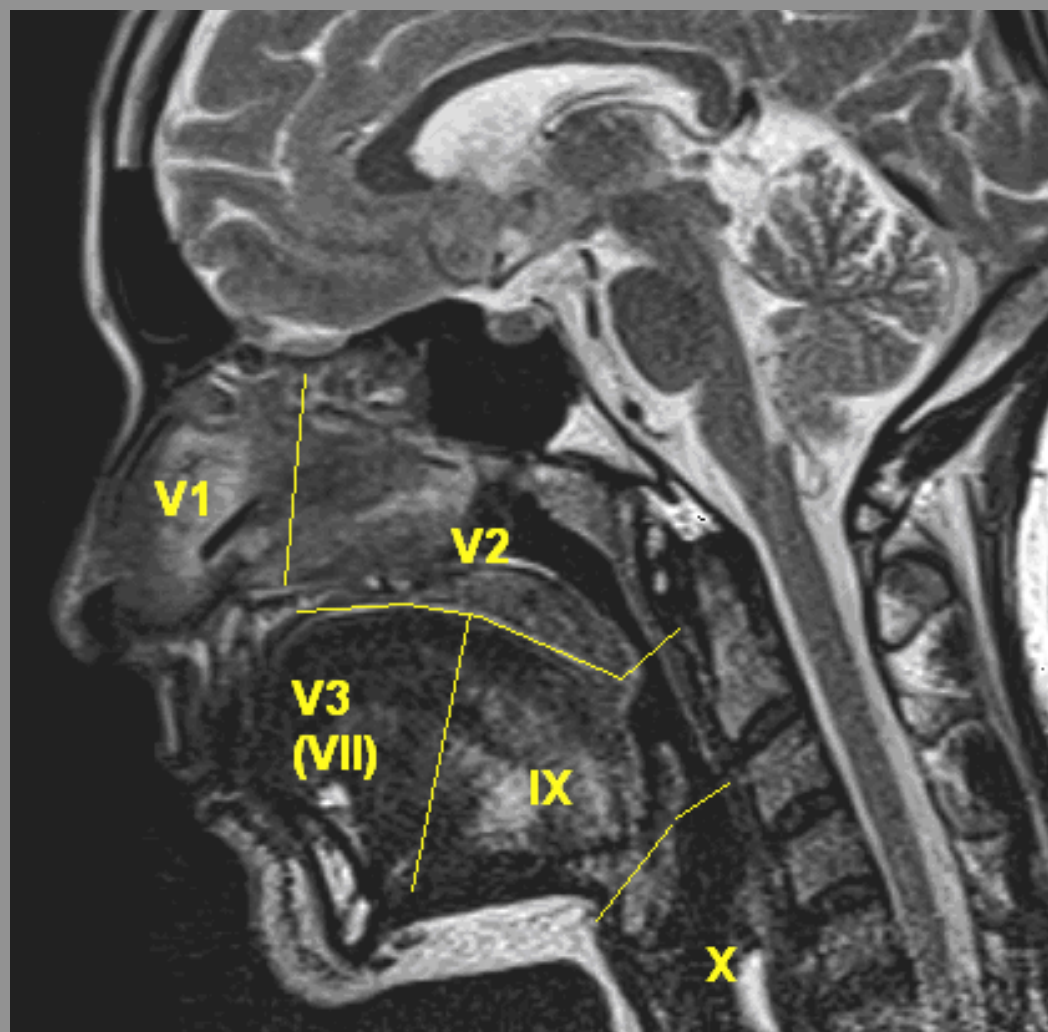
- Rare
- Cancers (+++), cathéterismes centraux (++), trauma., infections, hyper-stimulation ovarienne, troubles de la coag.
- Risque d' embolie pulmonaire (10%)
- Sd post-thrombotique (41%)
- Extension intra-crânienne exceptionnelle

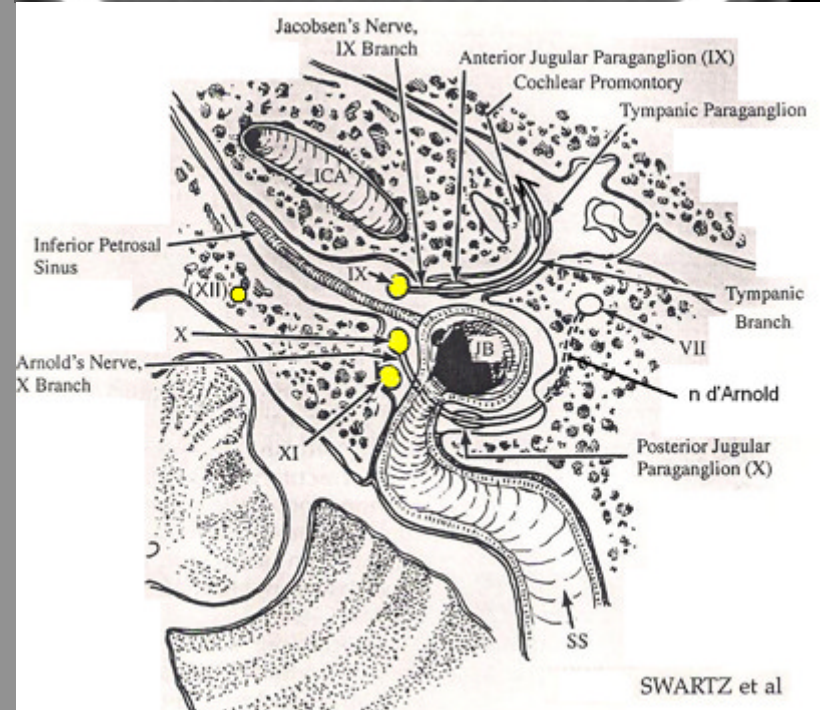
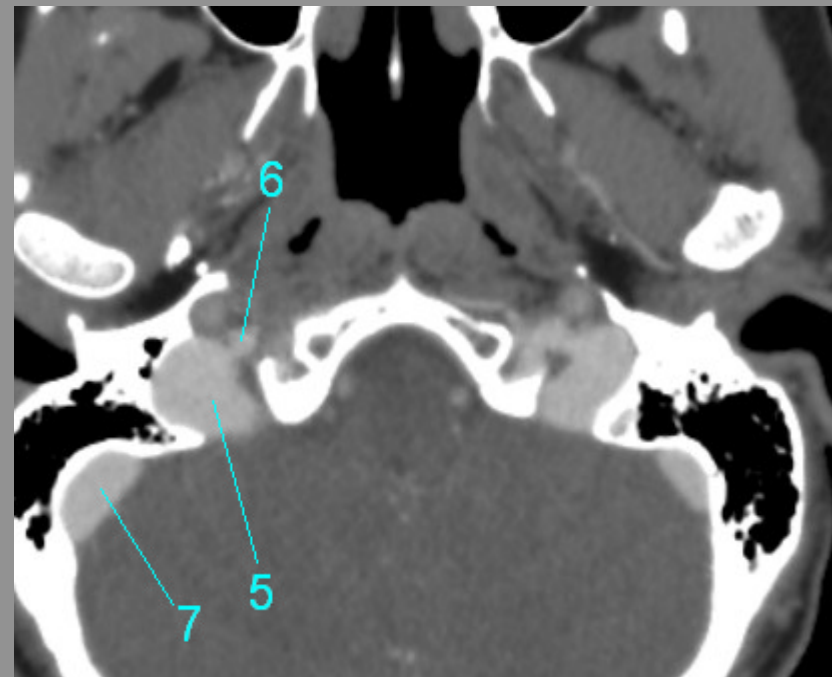
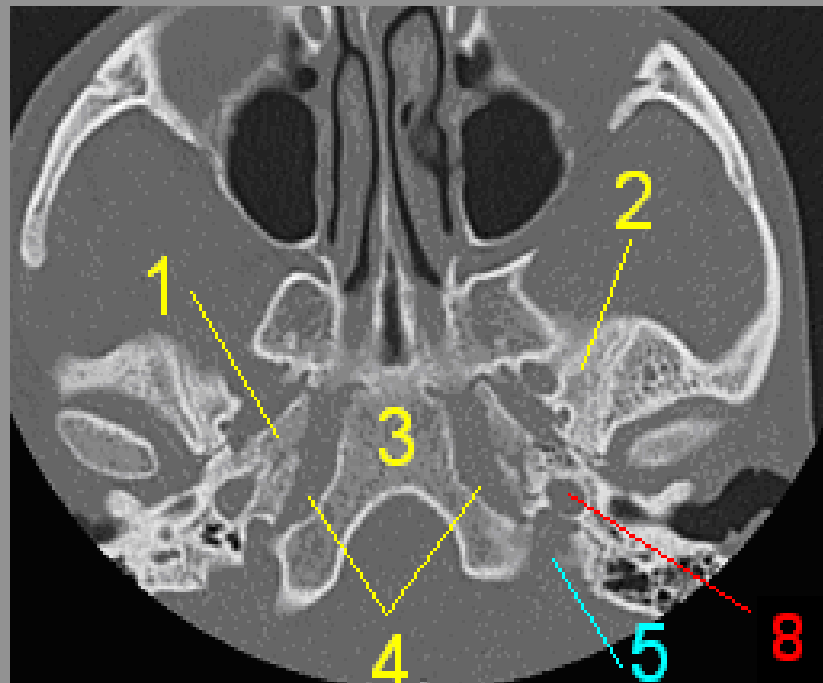
[QJM.](#) 2011 Mar;104(3):209-19.

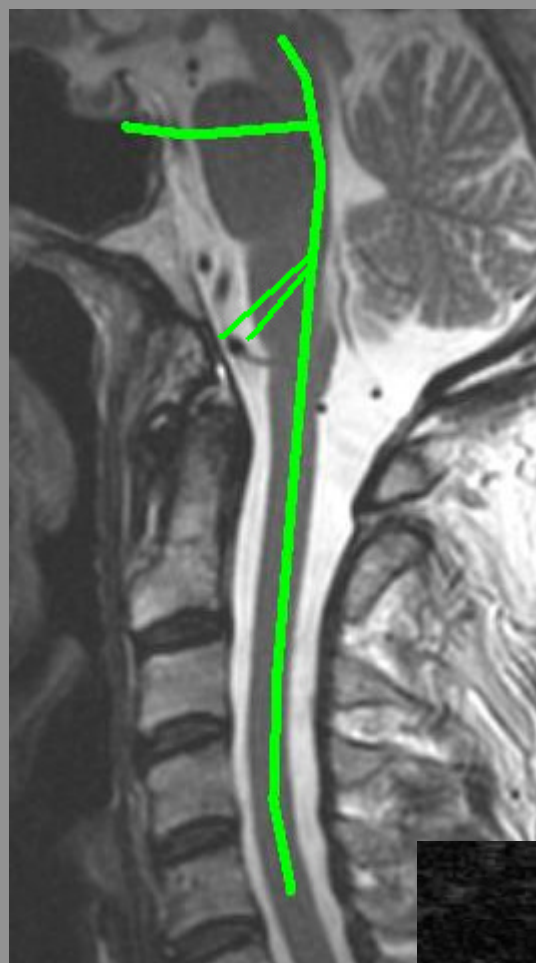
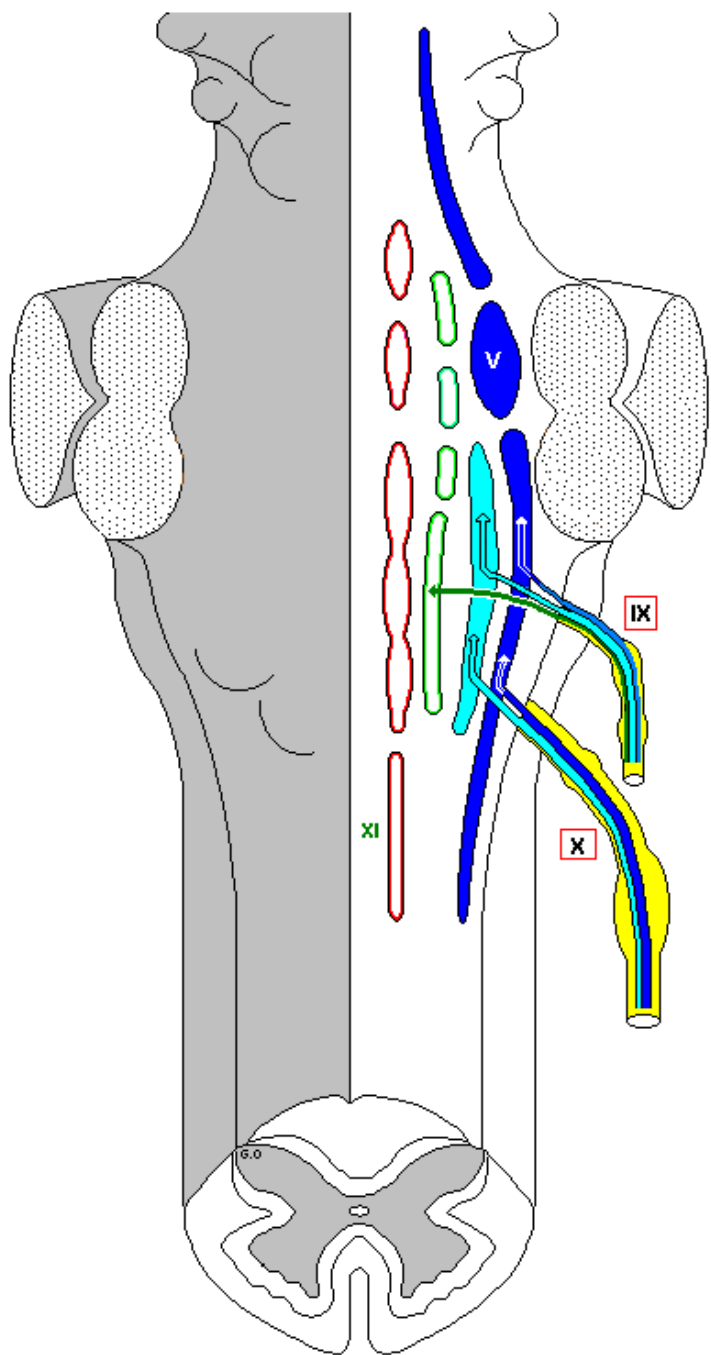
Internal jugular vein thrombosis: outcome and risk factors.

Department of Internal Medicine CHU Rouen









CAS n°5

Hyperprolactinémie : 30 – 80 microg/l



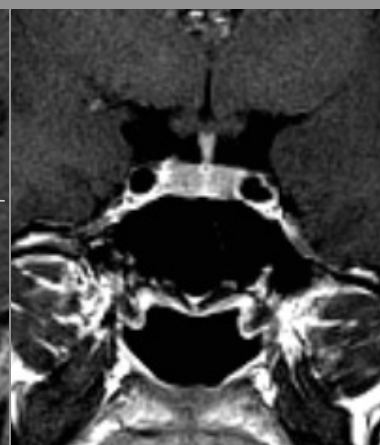
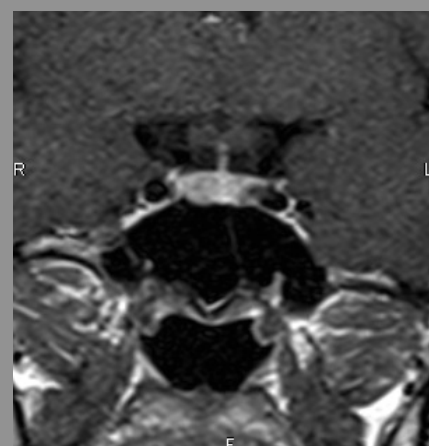
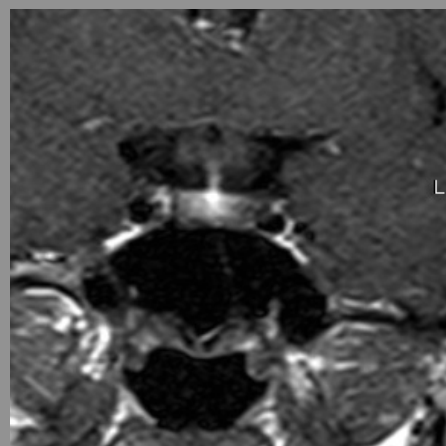
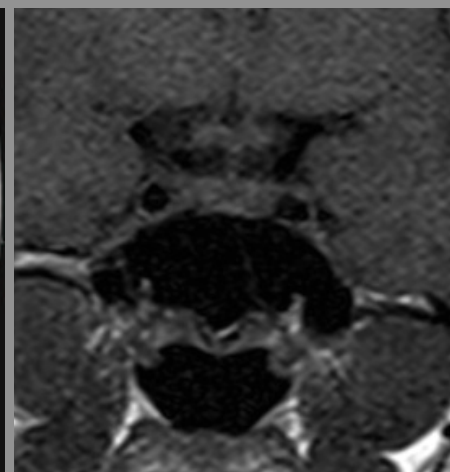
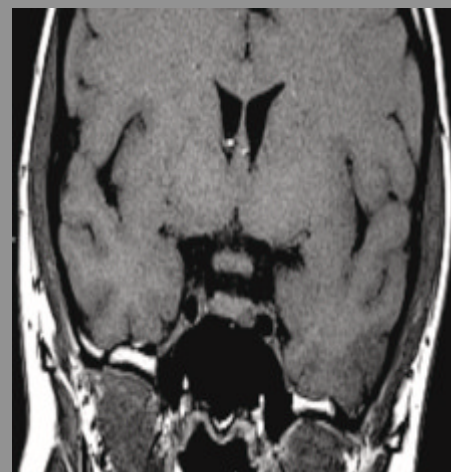
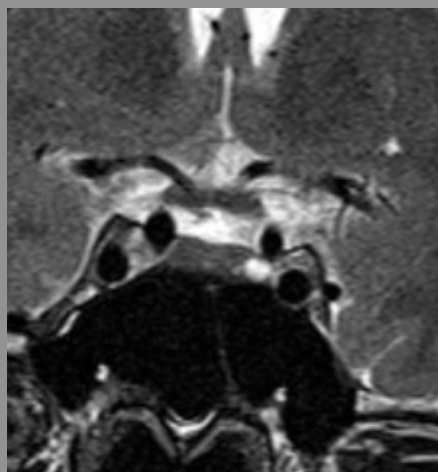
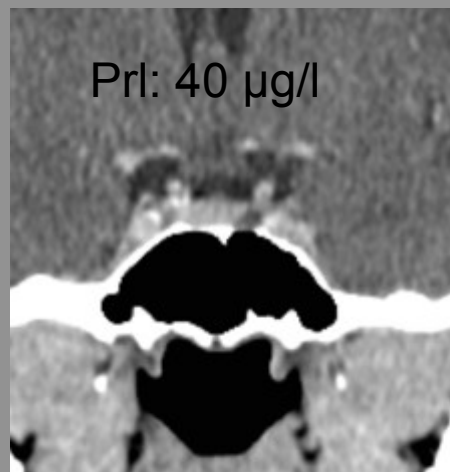
Quelle séquence réaliser?
envahissement du sinus caverneux?

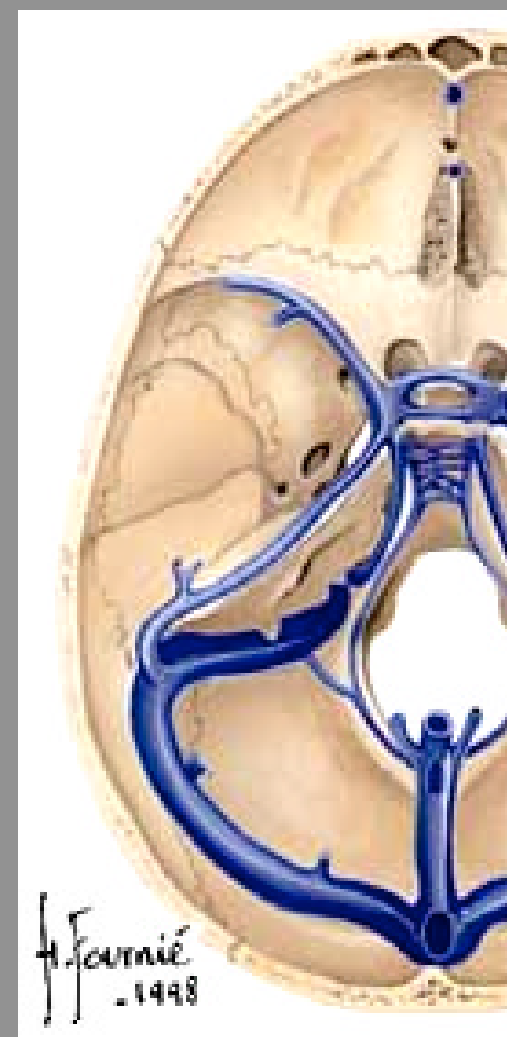
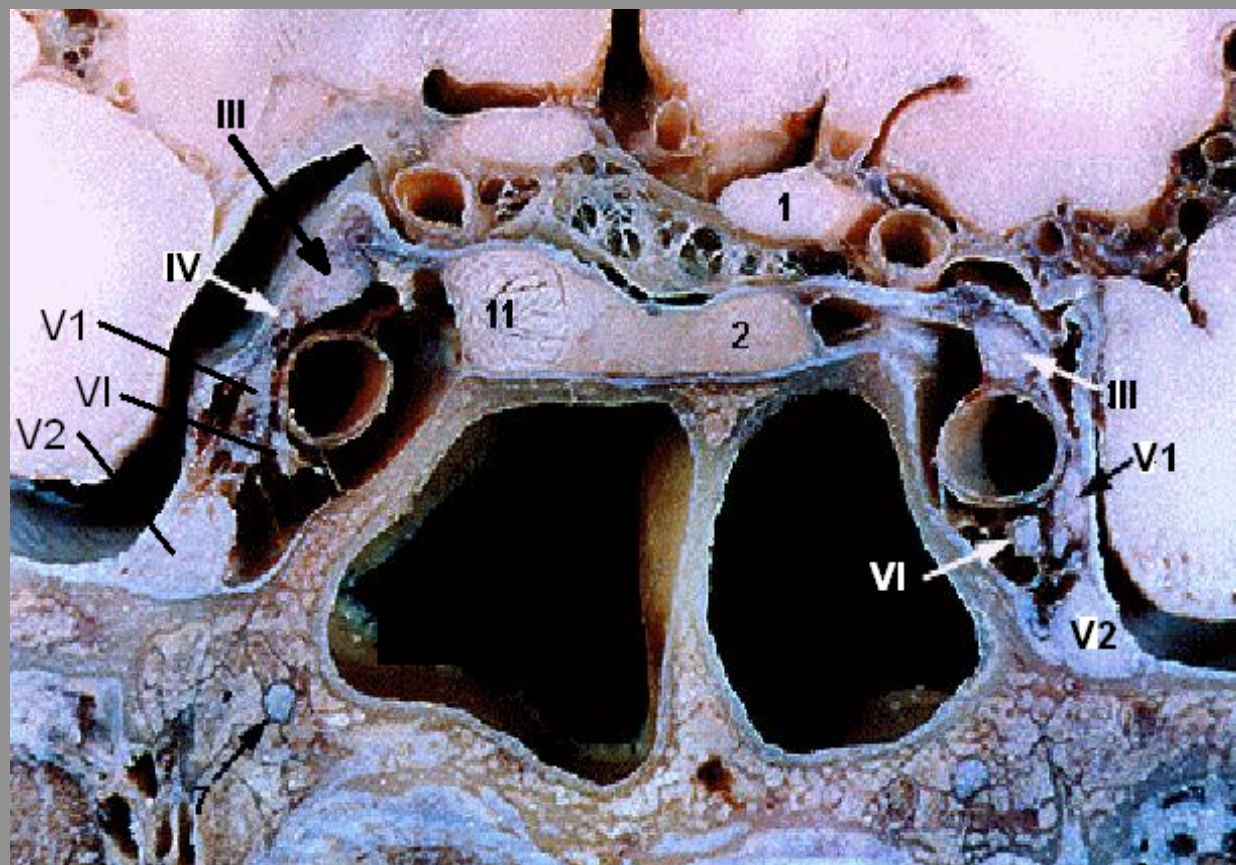
Taux de Prl et prolactinome

- taux $< 30 \mu\text{g/l}$
- entre 30 & 80 $\mu\text{g/l}$: adénome possible
- si $> 80 \mu\text{g/l}$: ad. très probable
- $> 500 \mu\text{g/l}$: macro-adénome

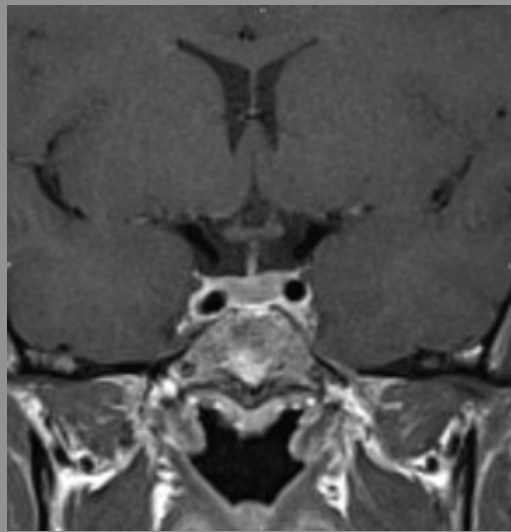
Hyper-prolactinémies

- **grossesse**
- **hypothyroïdie**
- **hyper-macroprolactinémie** : parfois **> 100 µg/l**
- **médications anti-DOPA**: NL, ADTC, anti-hypertenseurs, anti-H2, anti-émétisants, Prozac, Agreal. Parfois **> 100 µg/l**
- **affections générales** : IRC, IH, ovaires polykystiques, chir. mammaire et thoracique
- **autres** : stress, bière, cocaïne, marijuana, métadone
- **HPrI « de déconnexion »** (DOPA↓)

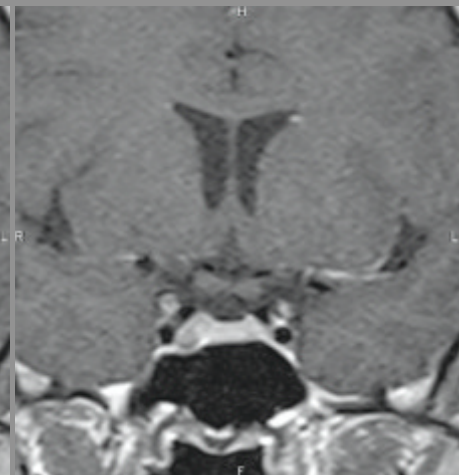
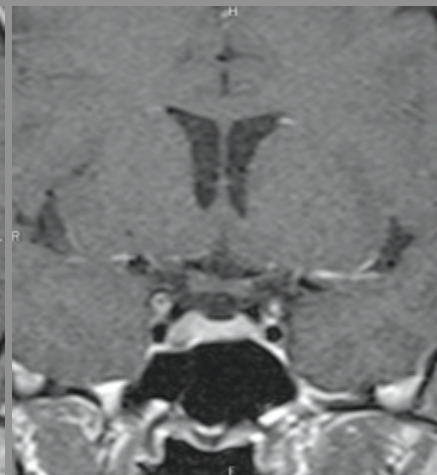
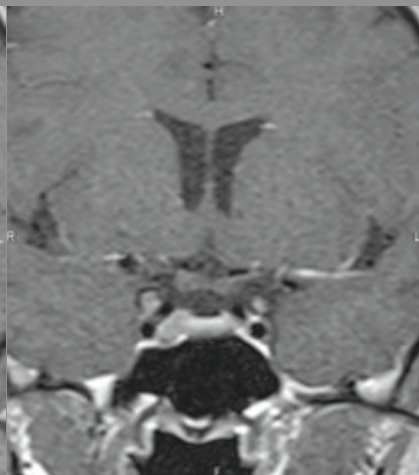
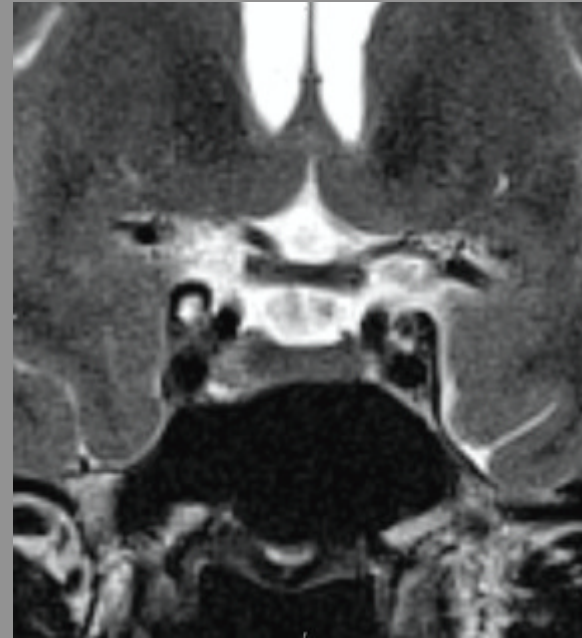
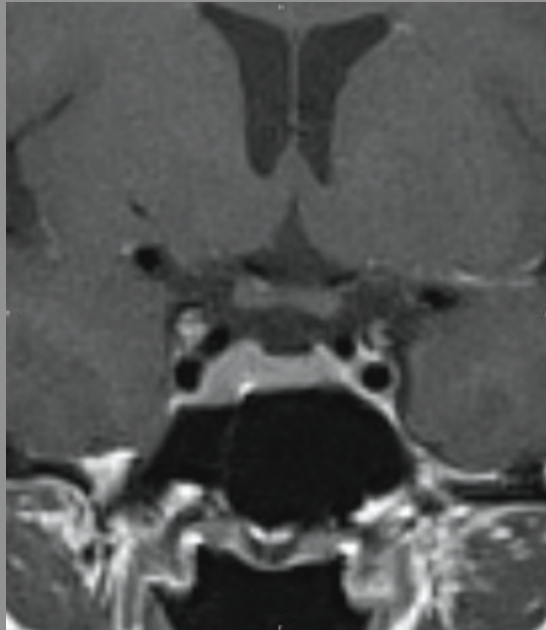




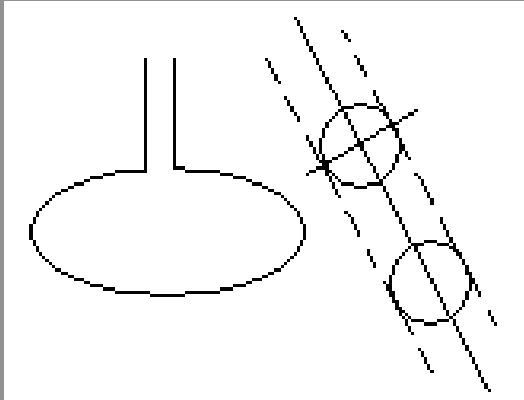
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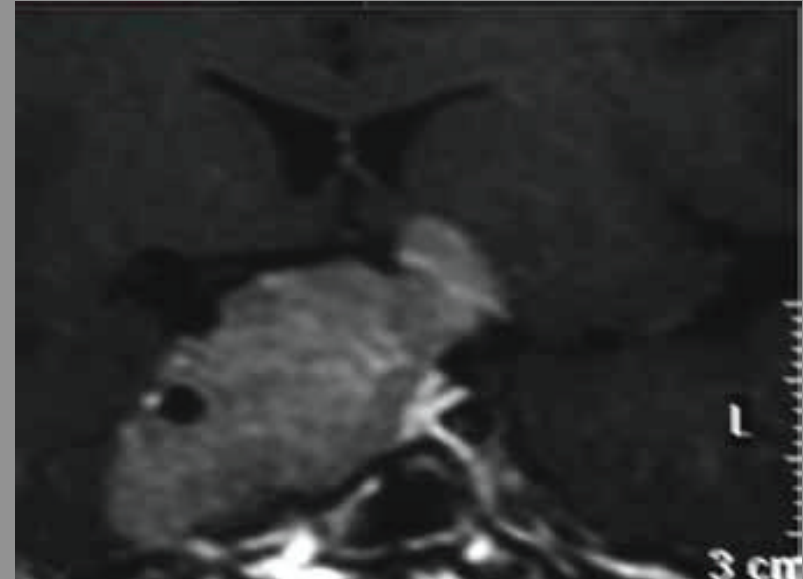
2



Critères d' envahissement du sinus caverneux

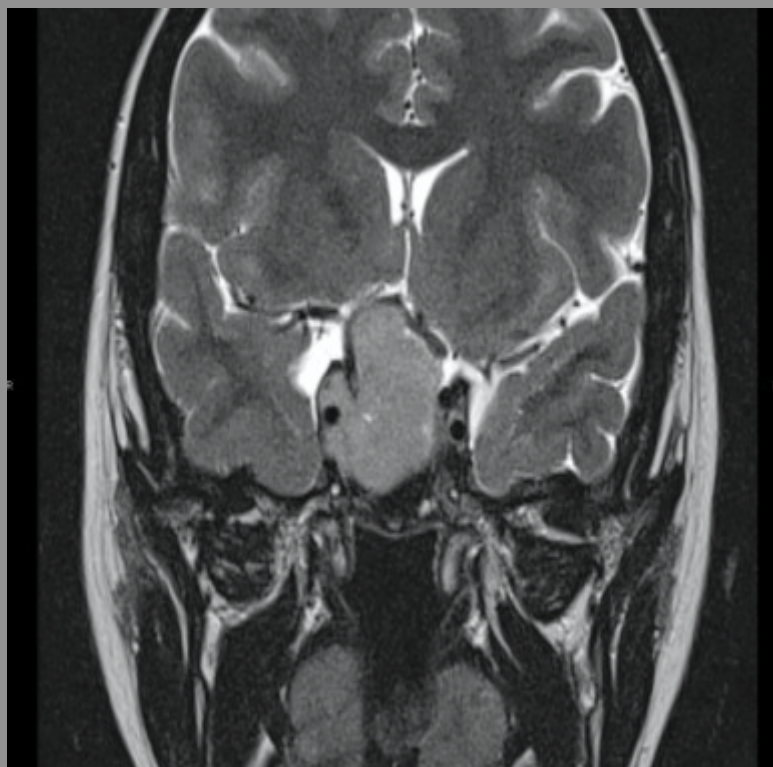


- symétrie des sinus caverneux
- symétrie glandulaire
- visibilité du mur médial
- fine bande de tissu sain séparant la glande de la CI
- lignes carotidiennes; interne, moyenne et externe



[Cen Eur Neurosurg.](#) 2009 Aug;70(3):130-6. Assessment of normal perisellar anatomy in 1.5 T T2-weighted MRI and comparison with the anatomic criteria defining cavernous sinus invasion of pituitary adenomas. [Knappe UJ](#)





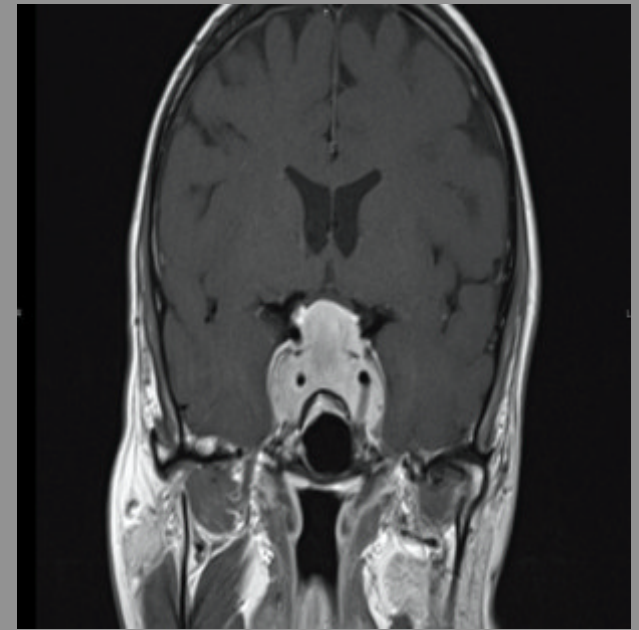
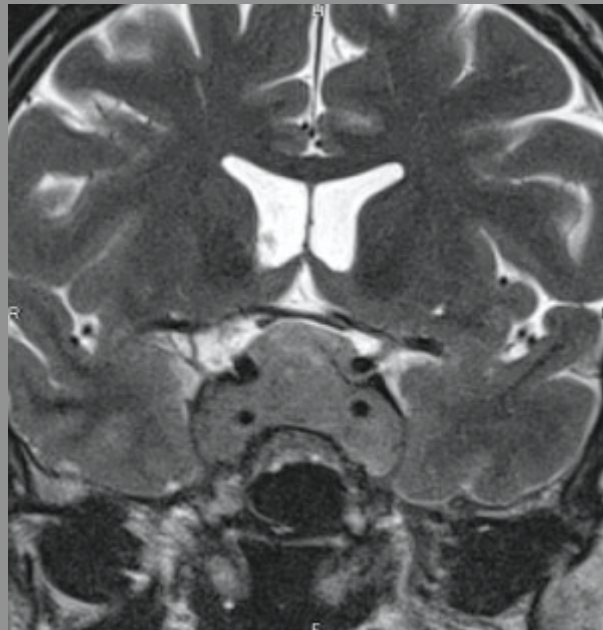
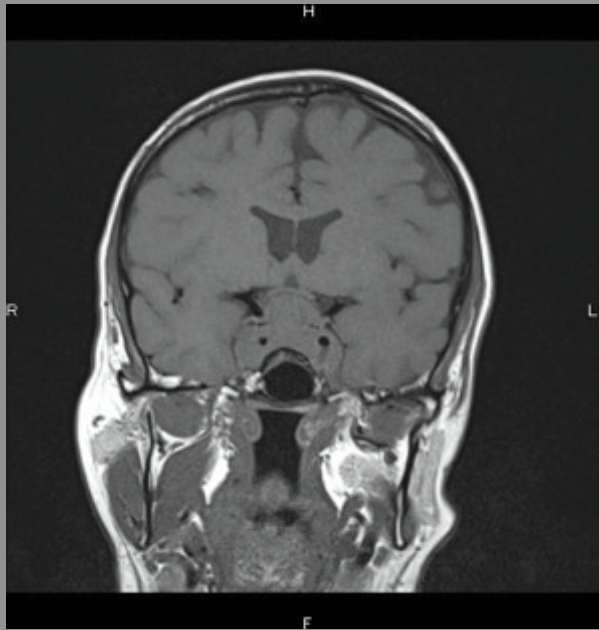
JofNR 97

Envahissement d' 1 sinus caverneux
englobement des CI avec Ø ↓: except.
Dural tail possible

[Eur J Radiol.](#) 2006 Oct;60(1):42-5. **Prevalence of "dural tail sign" in patients with different intracranial pathologies.** [Rokni-Yazdi H](#)

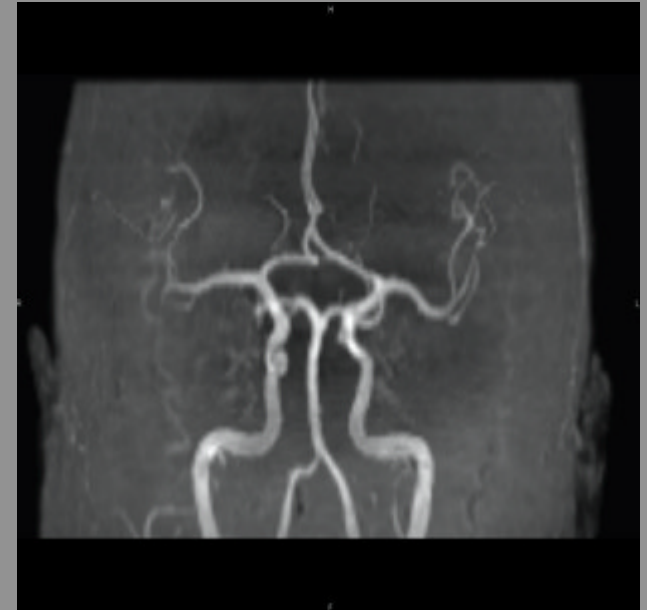
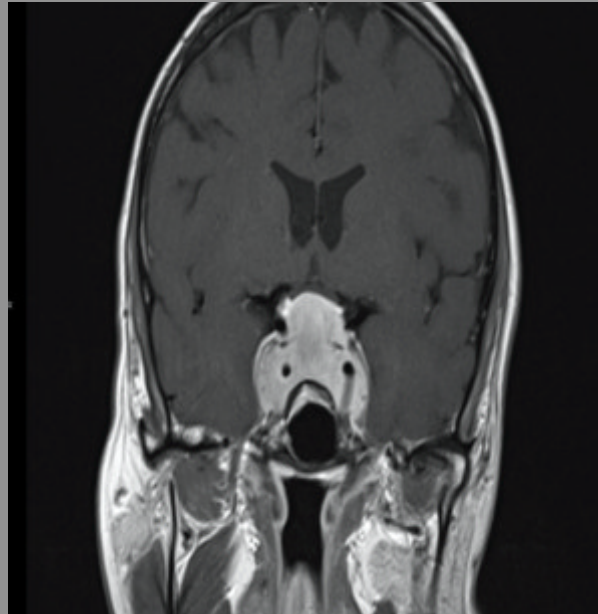
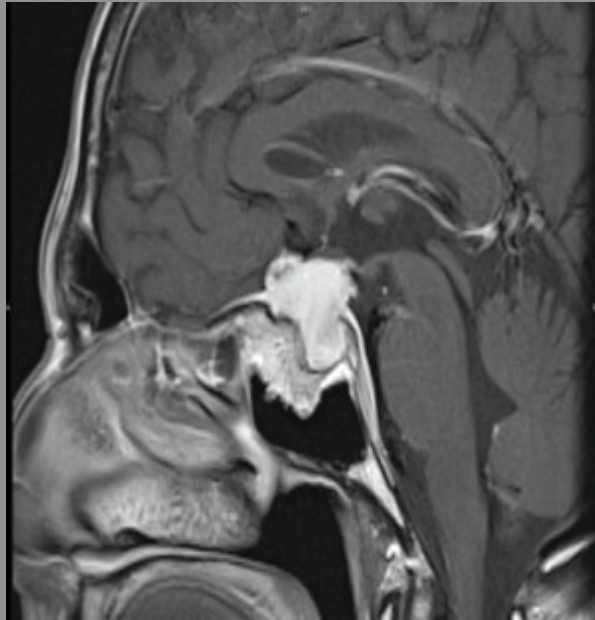
[Clin Radiol.](#) 2005 Feb;60(2):171-88. **The dural tail sign-beyond meningioma.** [Guermazi A](#), [Lafitte F](#), [Miaux Y](#), [Adem C](#), [Bonneville JF](#), [Chiras J](#).

- englobement des CI avec $\emptyset \downarrow$



[Pituitary.](#) 2012 Feb 4. [Molitch ME](#)

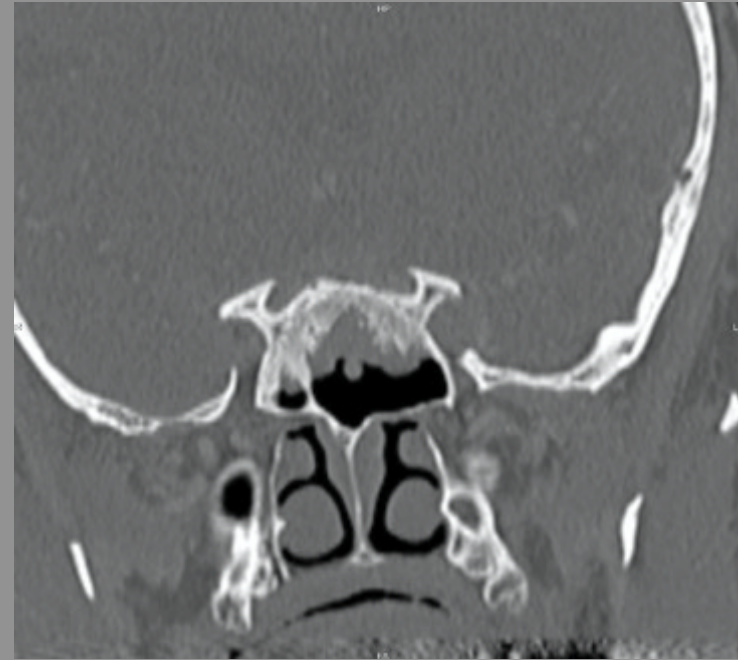
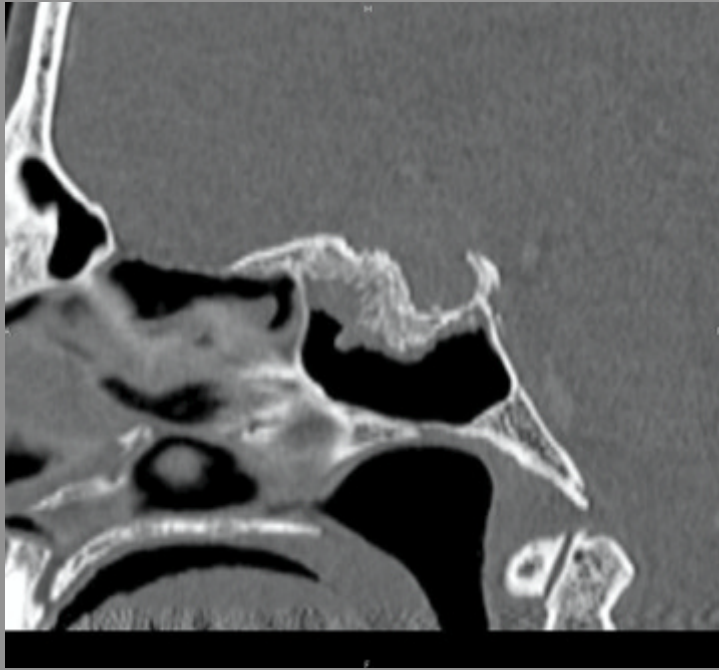
Tumors invading the cavernous sinus that cause internal carotid artery compression are rarely pituitary adenomas.



Méningiome:

- Envahissement des 2 sinus caverneux
- Atteinte bilatérale et symétrique
- englobement des CI avec Ø ↓
- Dural tail

- Traverse l'os sans le lyser



Protocole hypophyse

- ± Coupes sagittales
- Coro. T1 et T2 SE
- Coro. dynamique gado.
- Coro. T1 SE gado.
- Coro. T1 SE gado. « delayed » (20')
- ± Coupes axiales