

EXERCICES DE LOCALISATION CEREBRALE

ou

l'usage quotidien de la radio-anatomie sectionnelle cérébrale

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Départements d'Anatomie - Neuroradiologie

IADI- INSERM U 947

Faculté de Médecine

Université de Lorraine à Nancy

Tom NAIDICH

Mount Sinai Hospital NYC USA

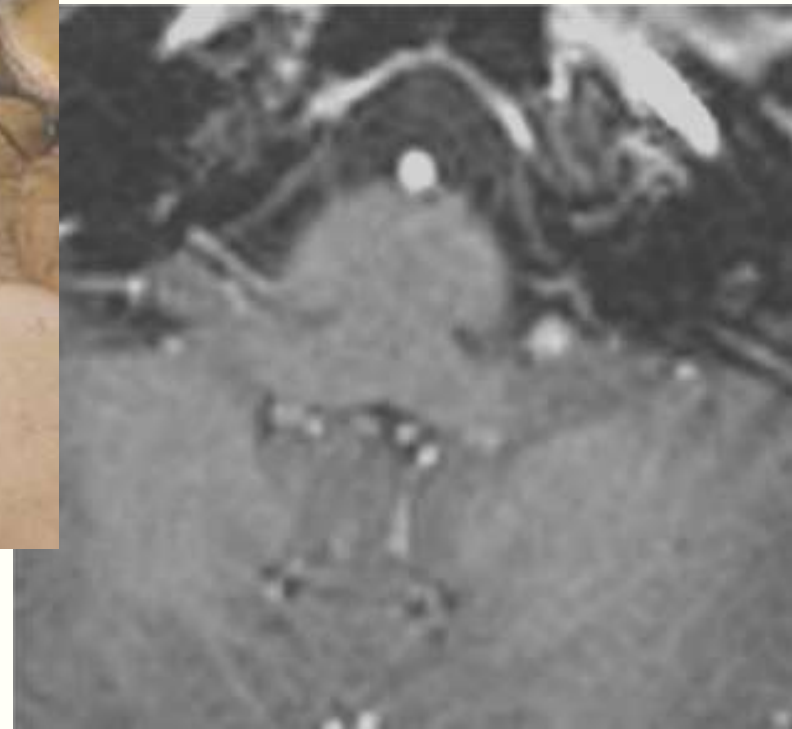
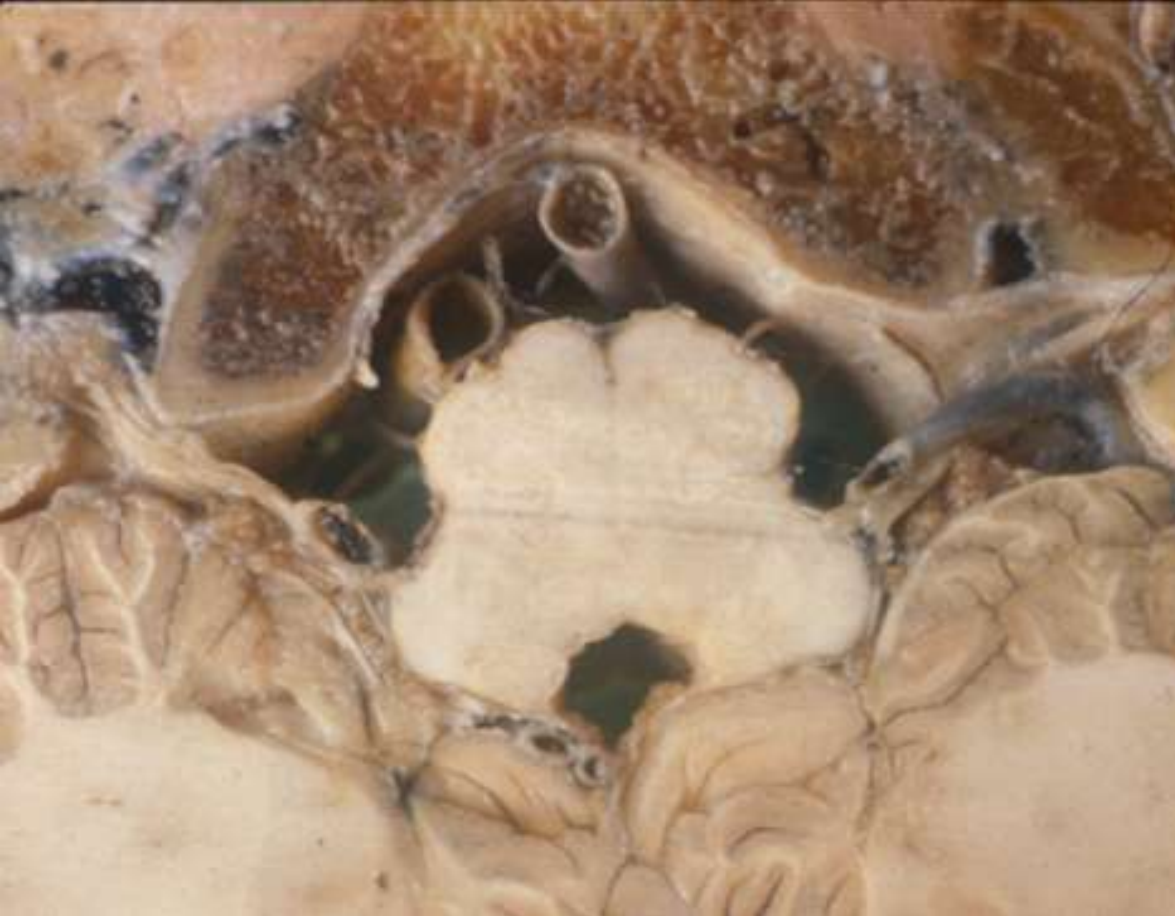


FOSSE POSTERIEURE



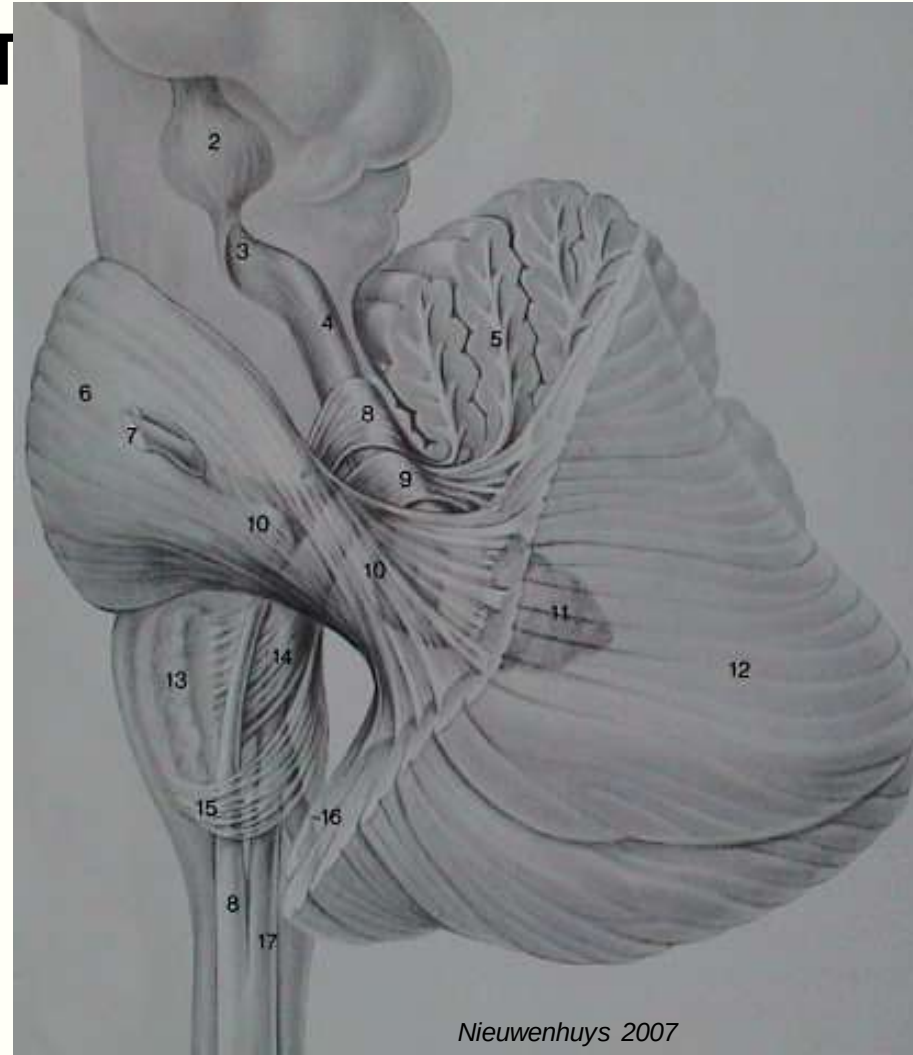
MOELLE ALLONGEE



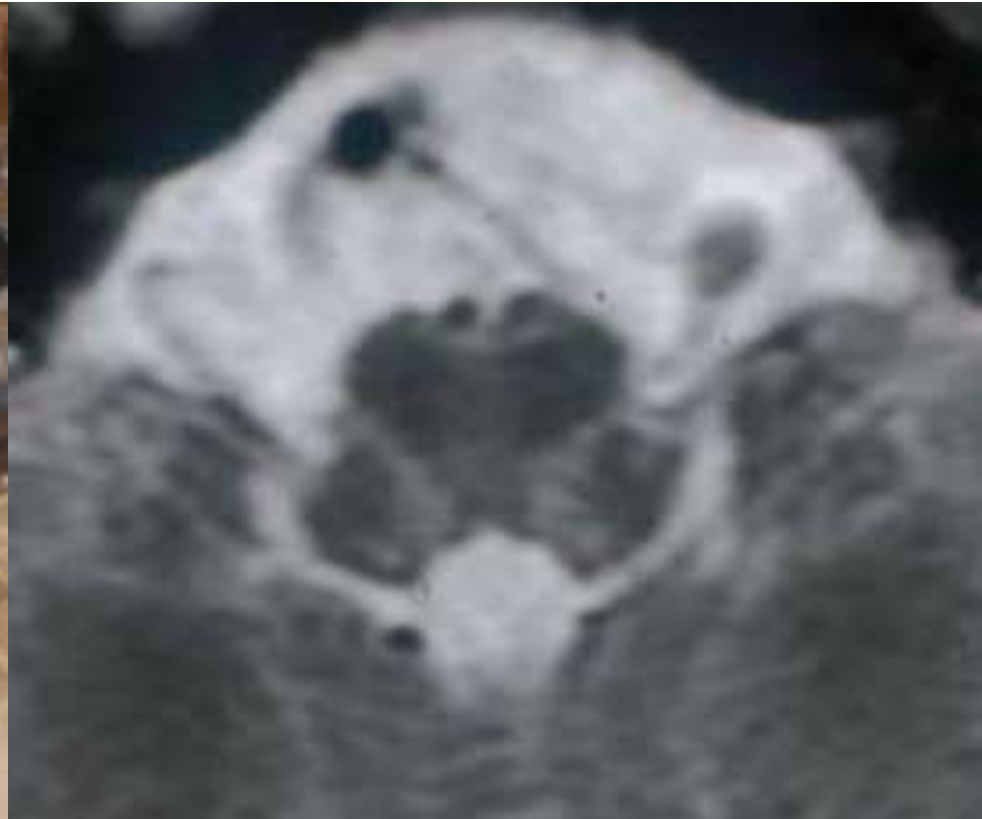
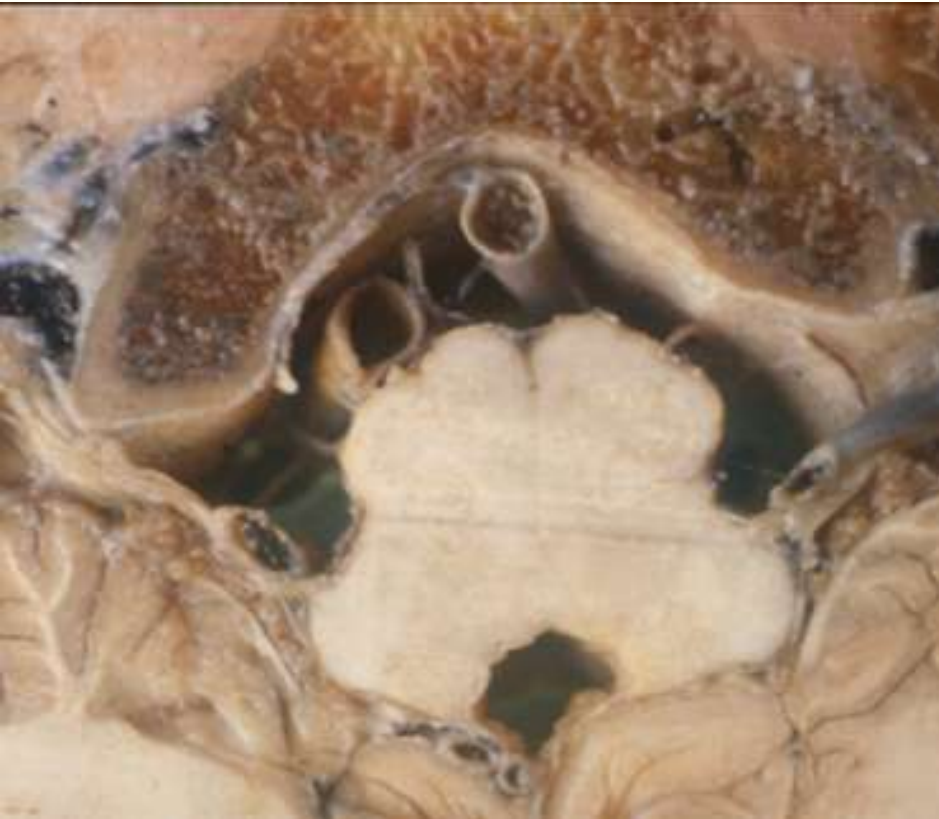


TROIS PAIRES DE PEDONCULES CEREBELLEUX

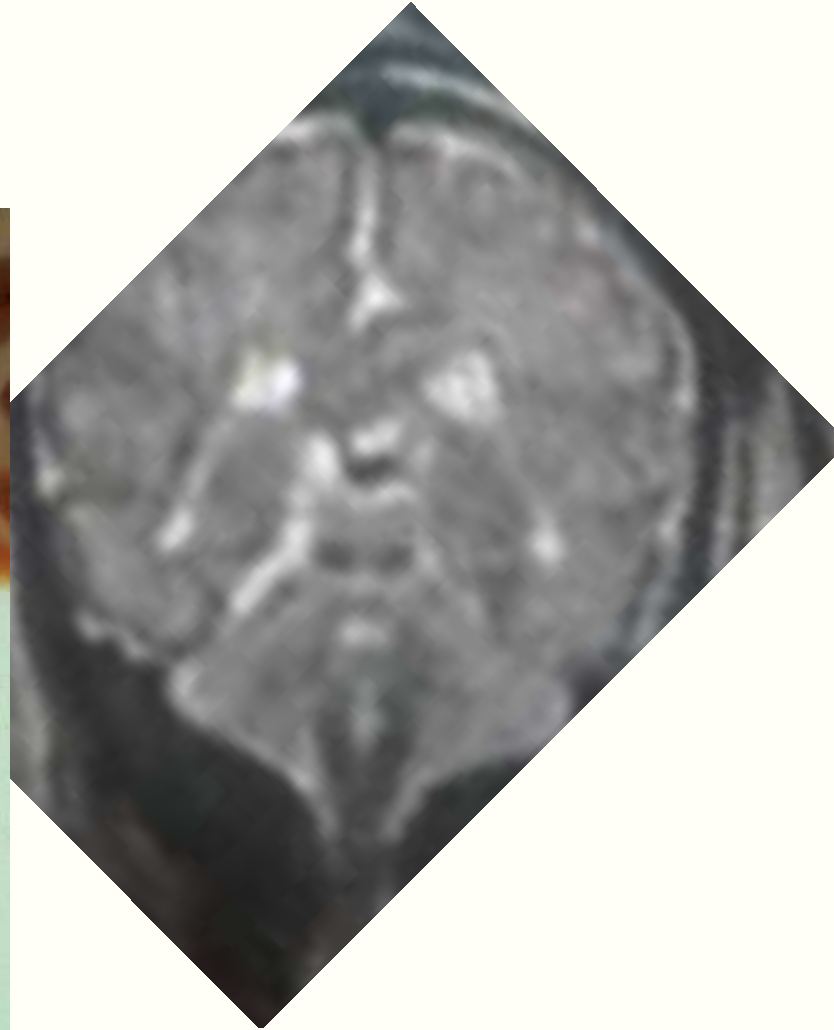
- **CONNECTANT CERVELET
ET**
 - **TRONC CEREBRAL**
 - **MOELLE EPINIÈRE**
 - **HEMISPHERES
CEREBRAUX**



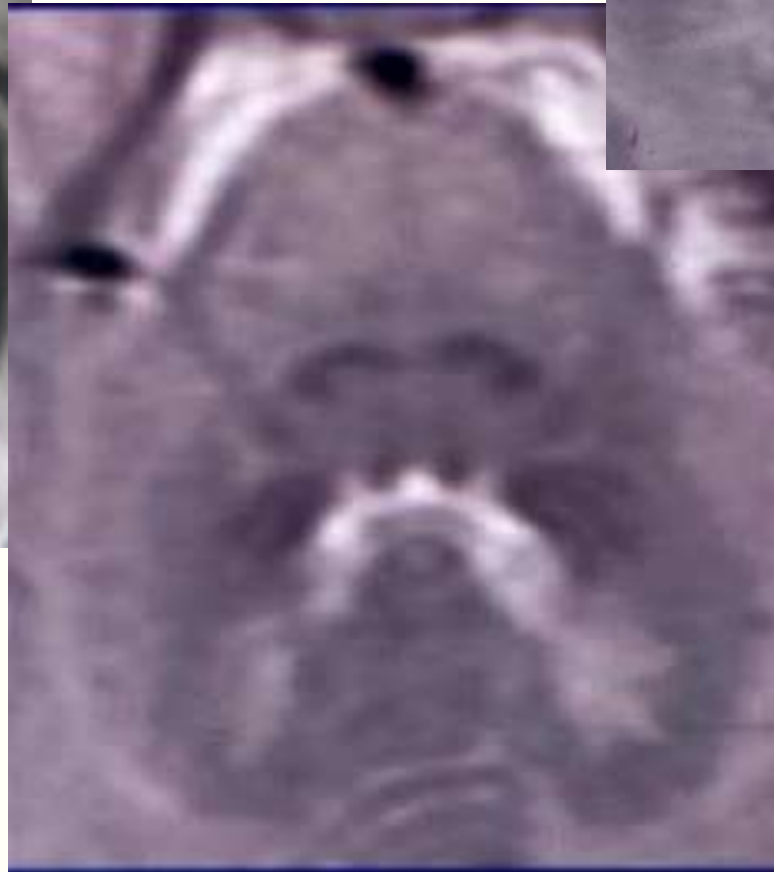
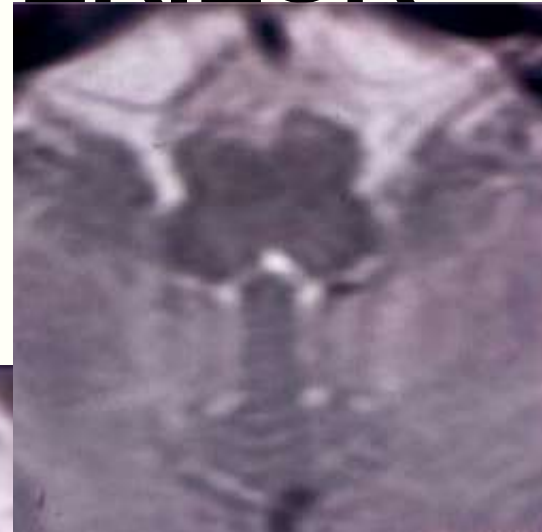
PED. CEREBELLEUX INFERIEUR



PED. CEREBELLEUX INFÉRIEUR



PED. CEREBELLEUX INFÉRIEUR



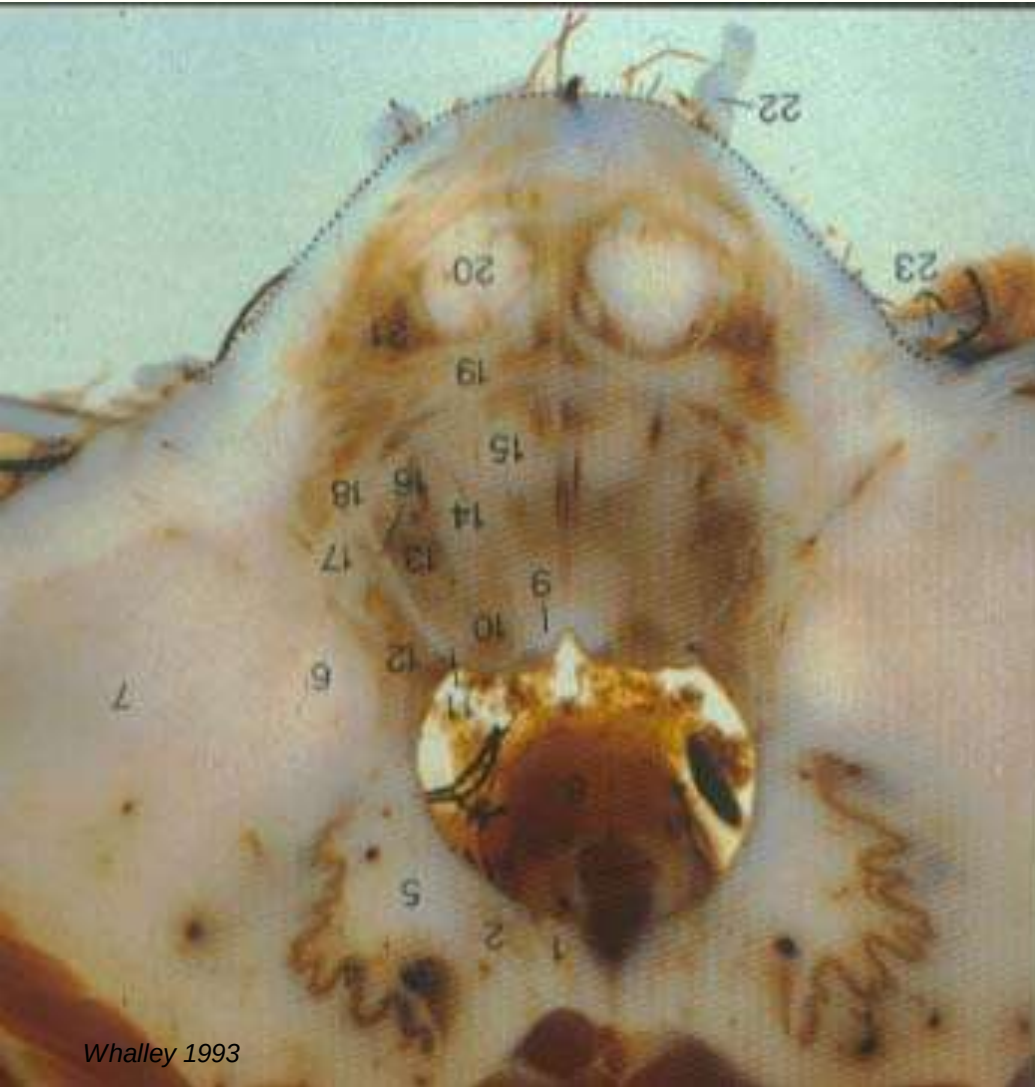
PONT

Surface Ventrale

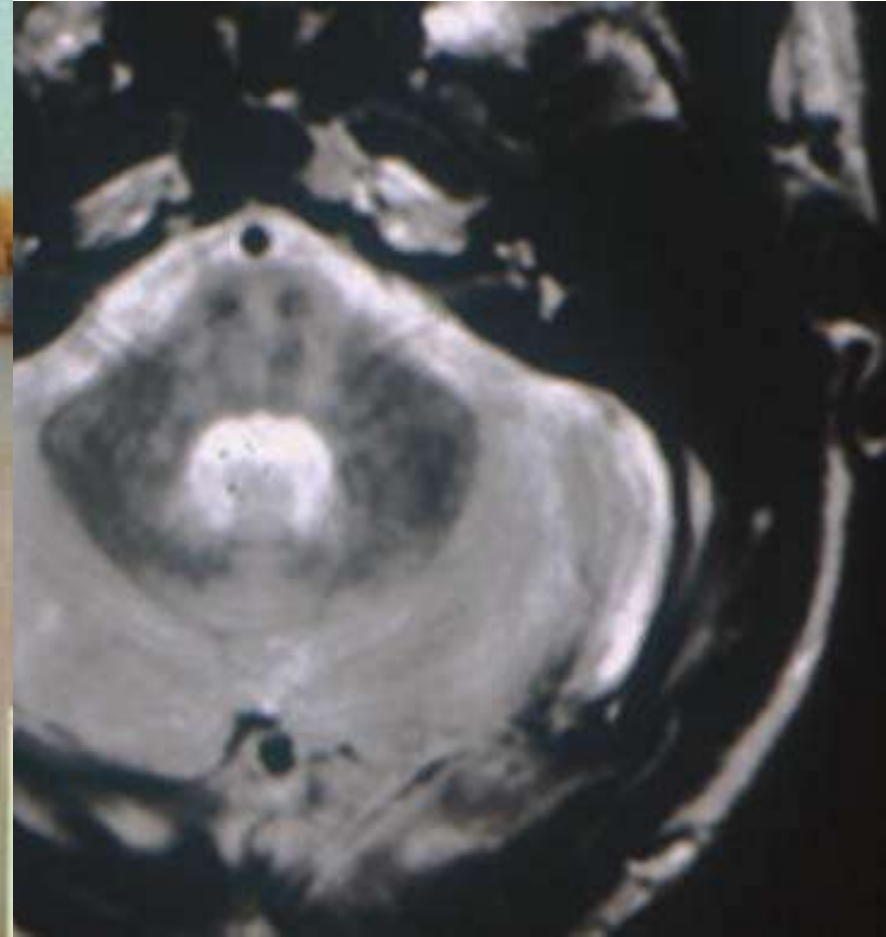
- PARTIE BASILAIRE
- PYRAMIDES PONTIQUES
- NERFS CRANIENS
 - VI
 - VII, VIII
 - V



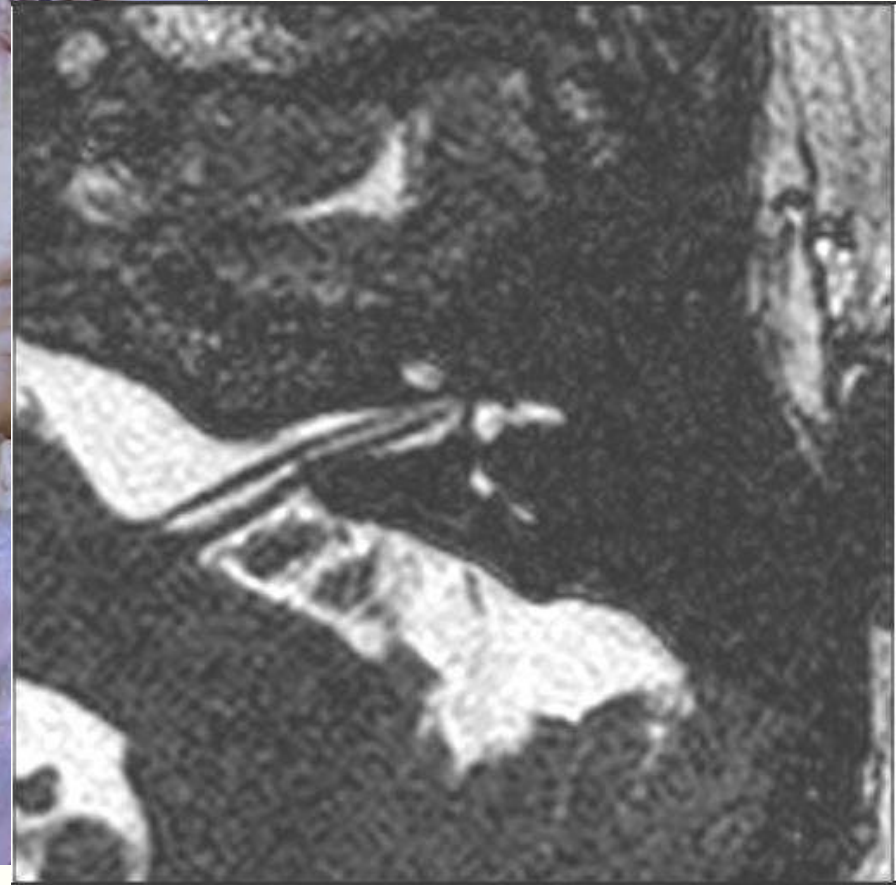
PONT (partie caudale) VII-VIII (I)



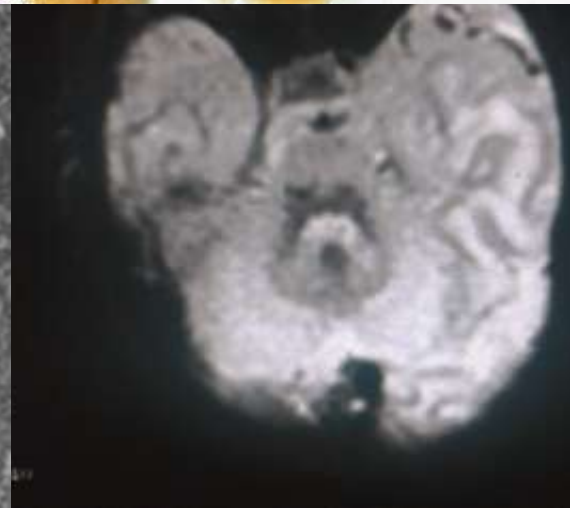
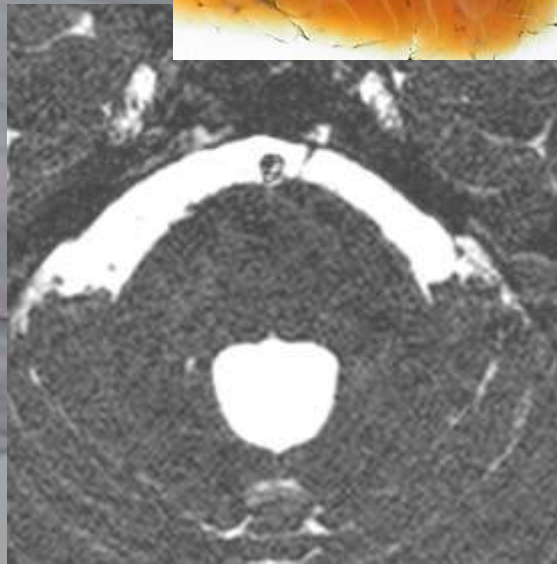
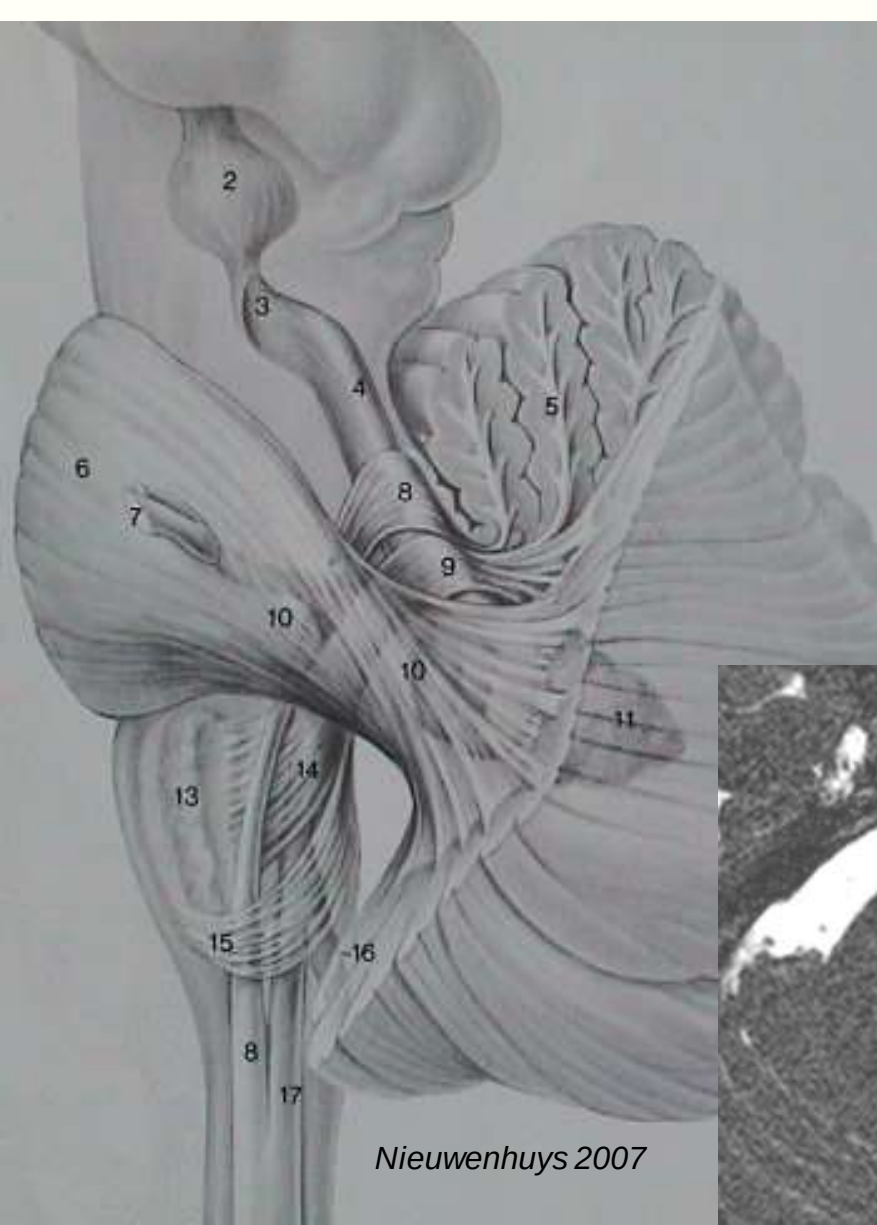
Whalley 1993



PONT (partie caudale) VII-VIII (II)



Pédoncule cérébelleux Moyen

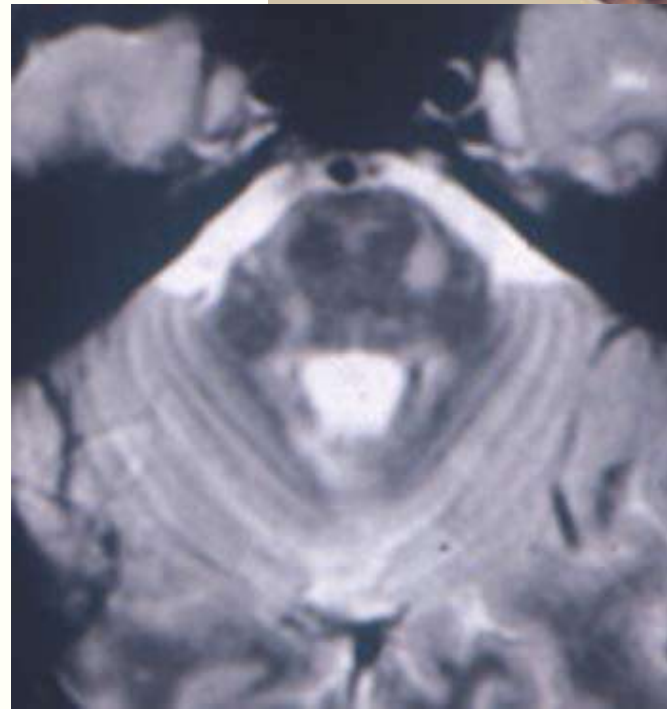
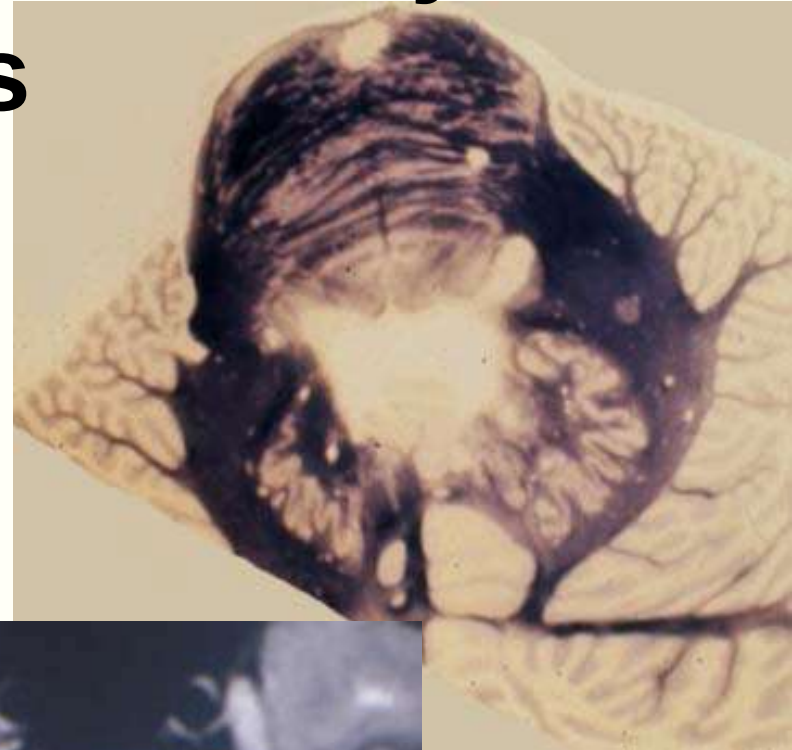


Nieuwenhuys 2007

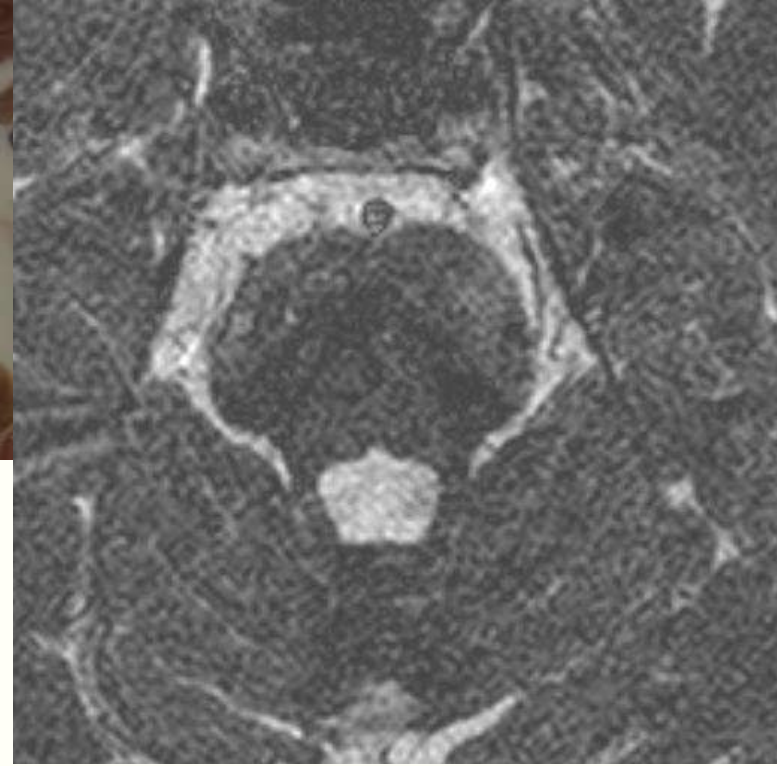
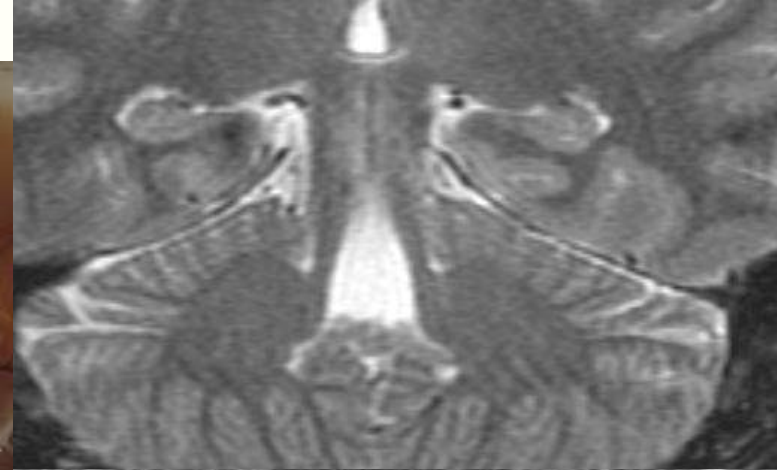
Pédoncule cérébelleux moyen

Lésions

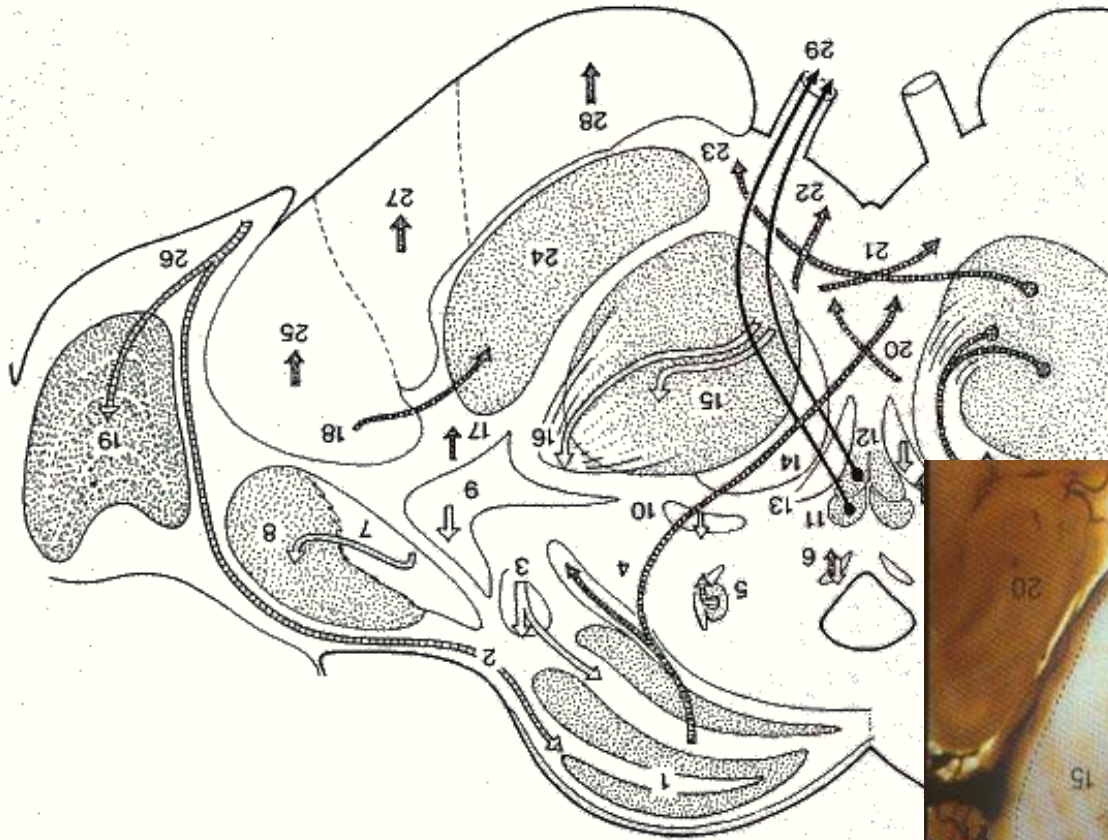
- LÉSIONS
NEOCEREBELLEUSES :
SEP OU INFARCTUS
 - TREMBLEMENTS
D'INTENTION
 - DYSMETRIE
 - ADIADOCHOKINESIE



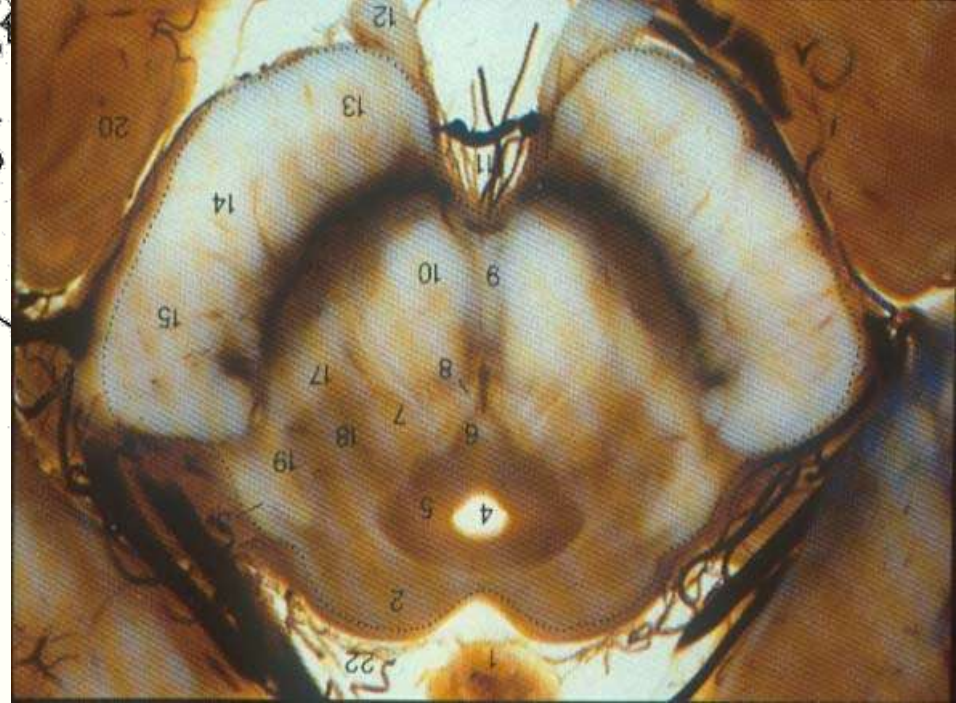
Pédoncule cérébelleux Supérieur



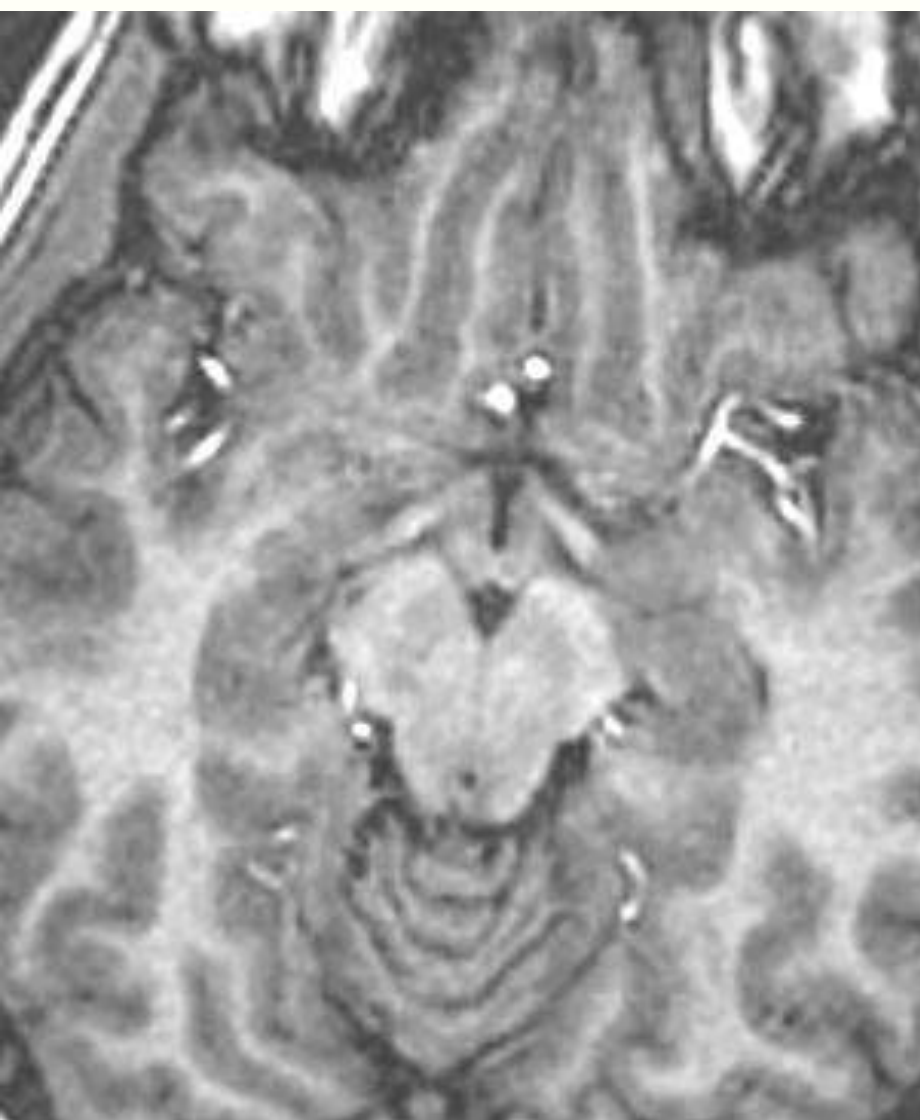
MESENCEPHALE CRANIAL NC. III



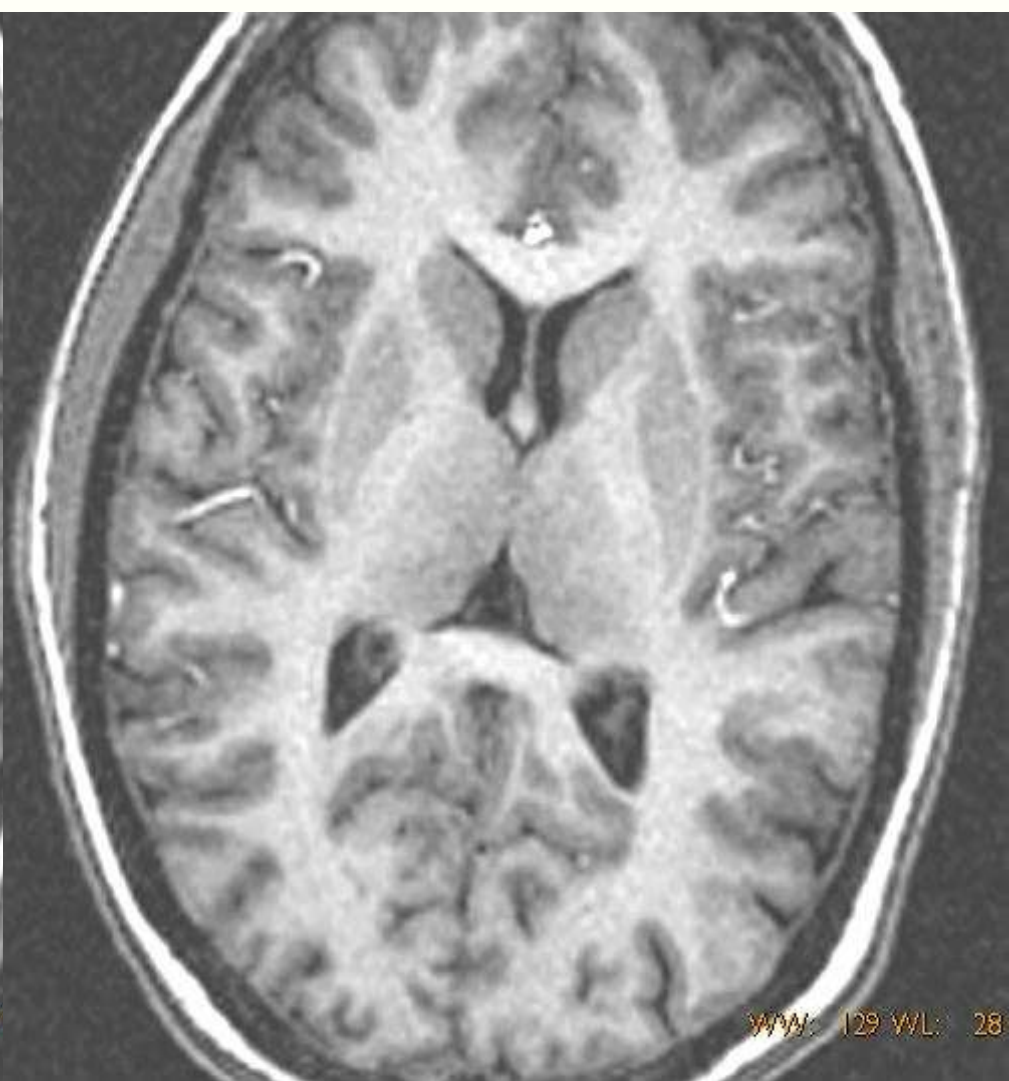
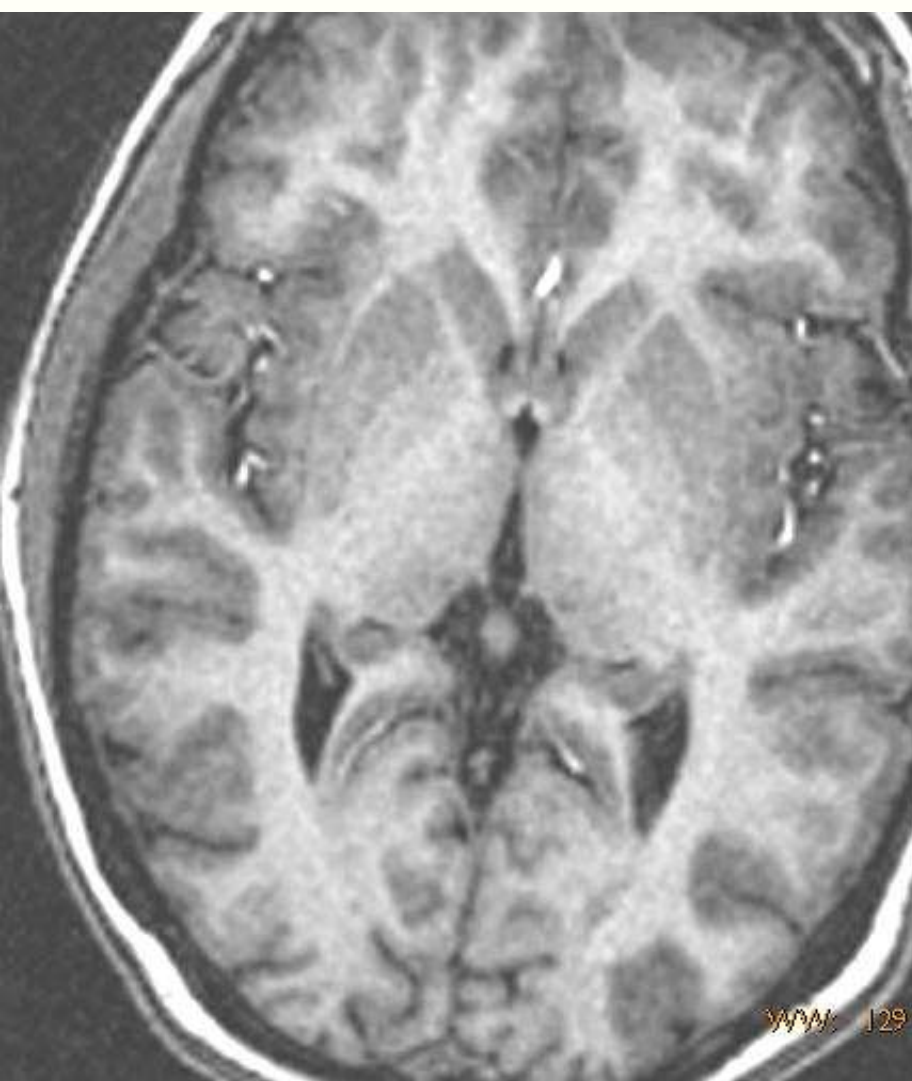
Nieuwenhuys 2007

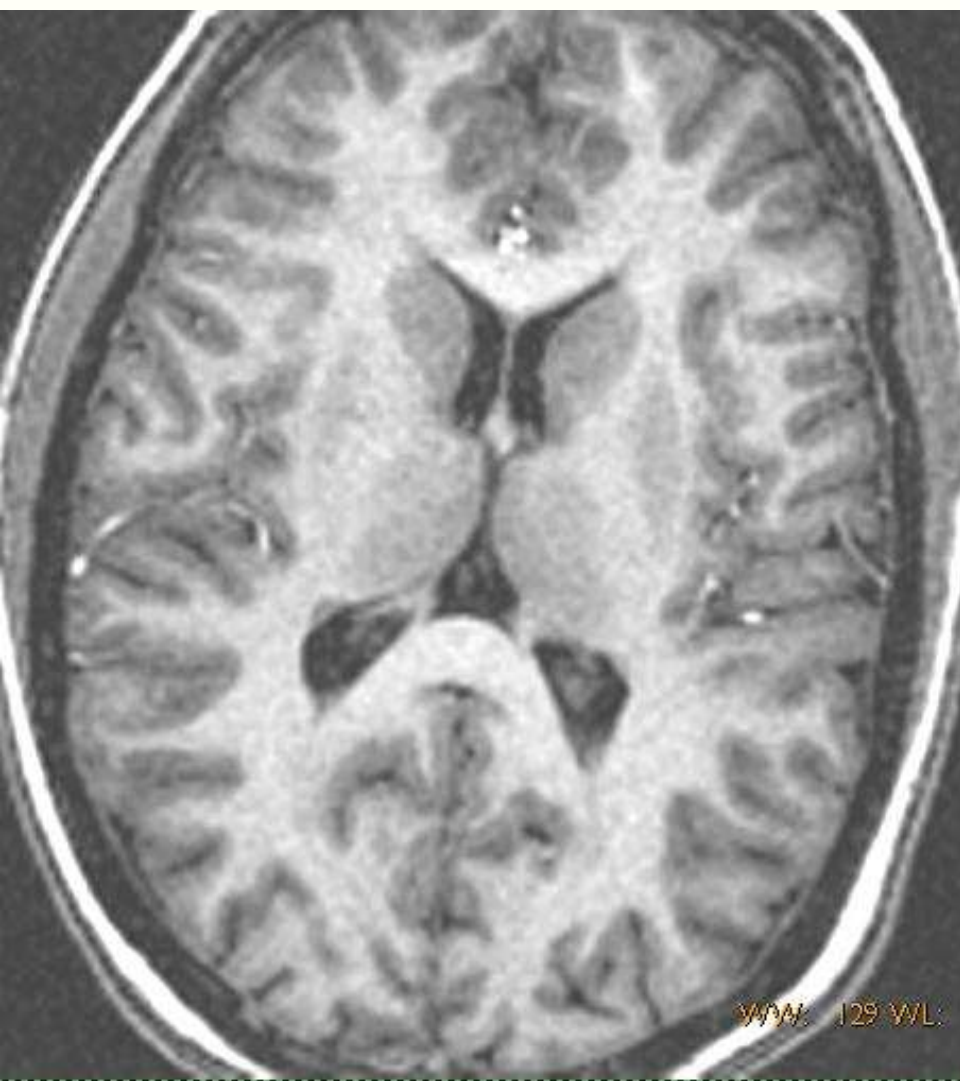


DIENCEPHALE ET NOYAUX GRIS



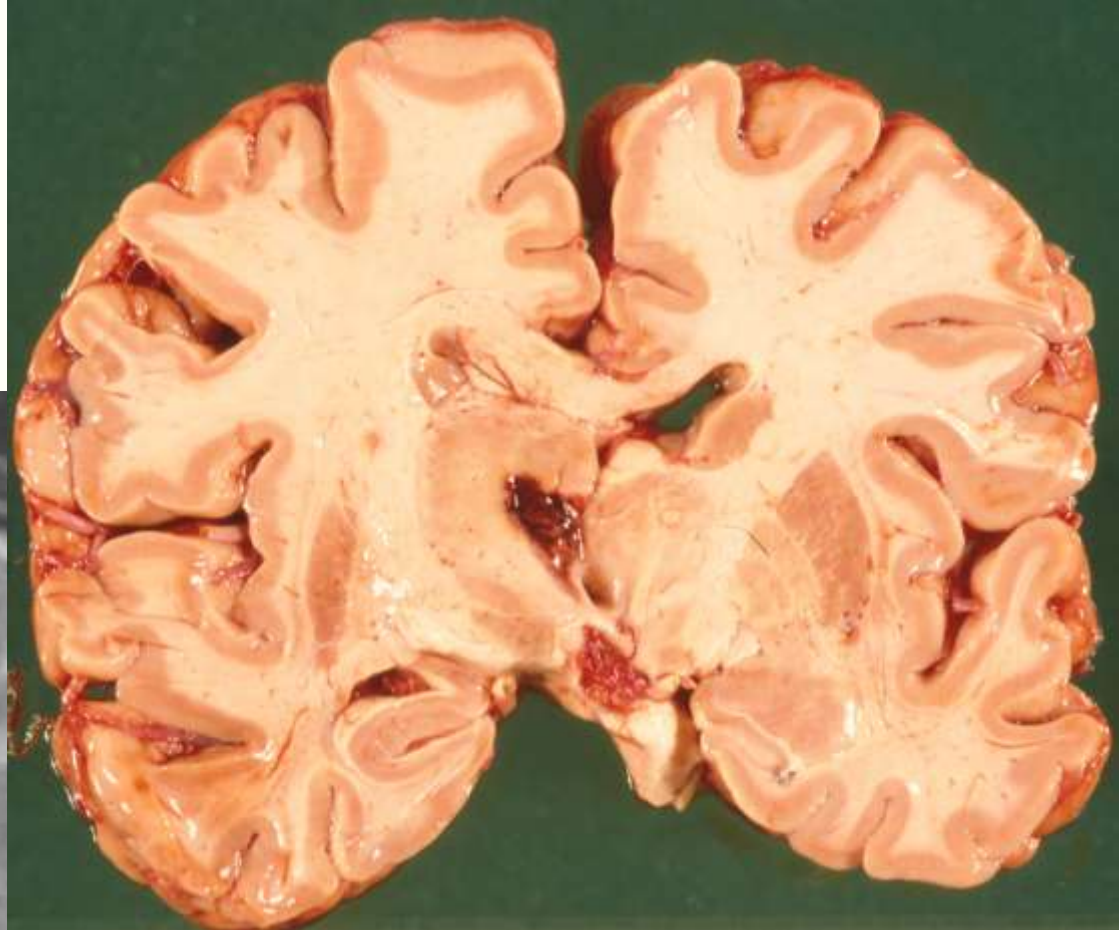
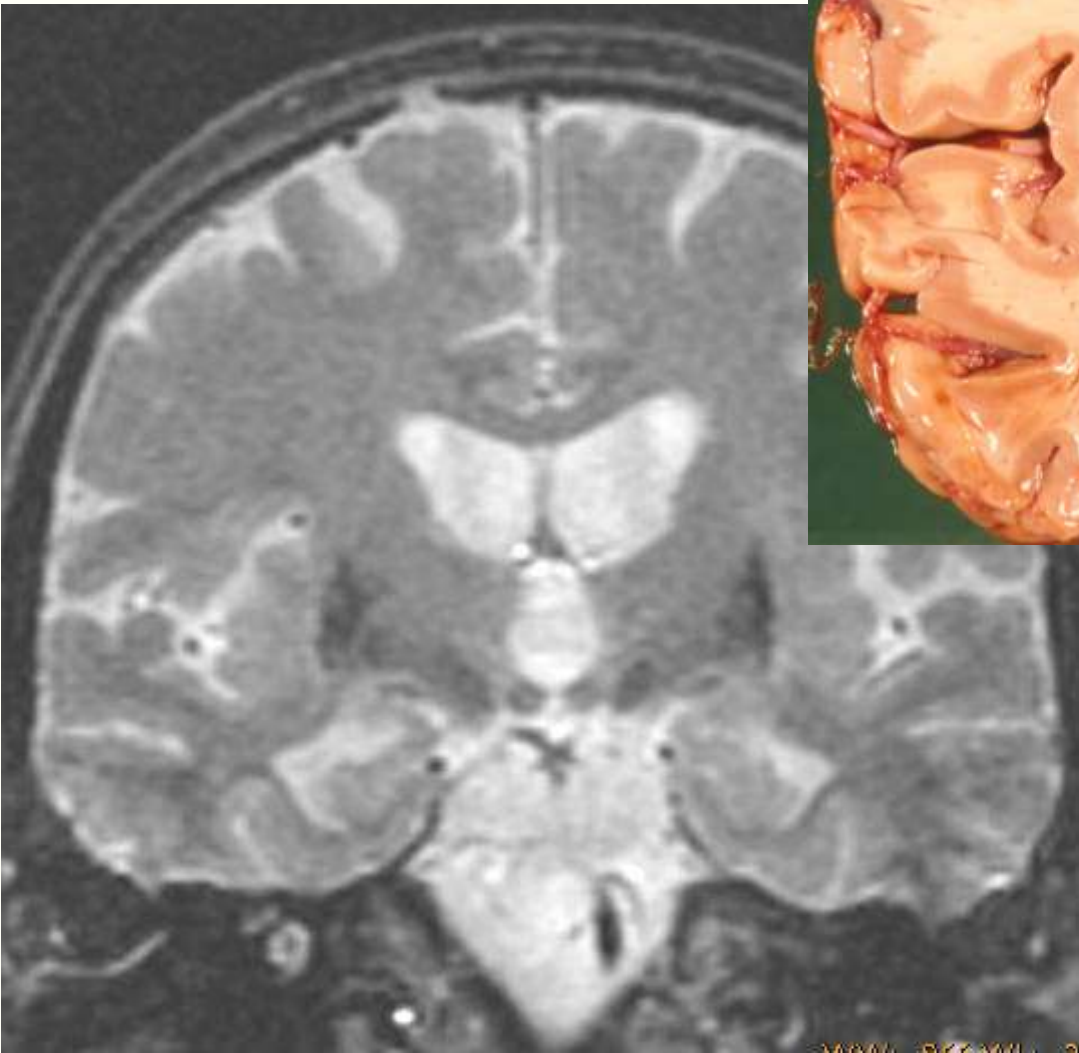
WPAK 129 W/L



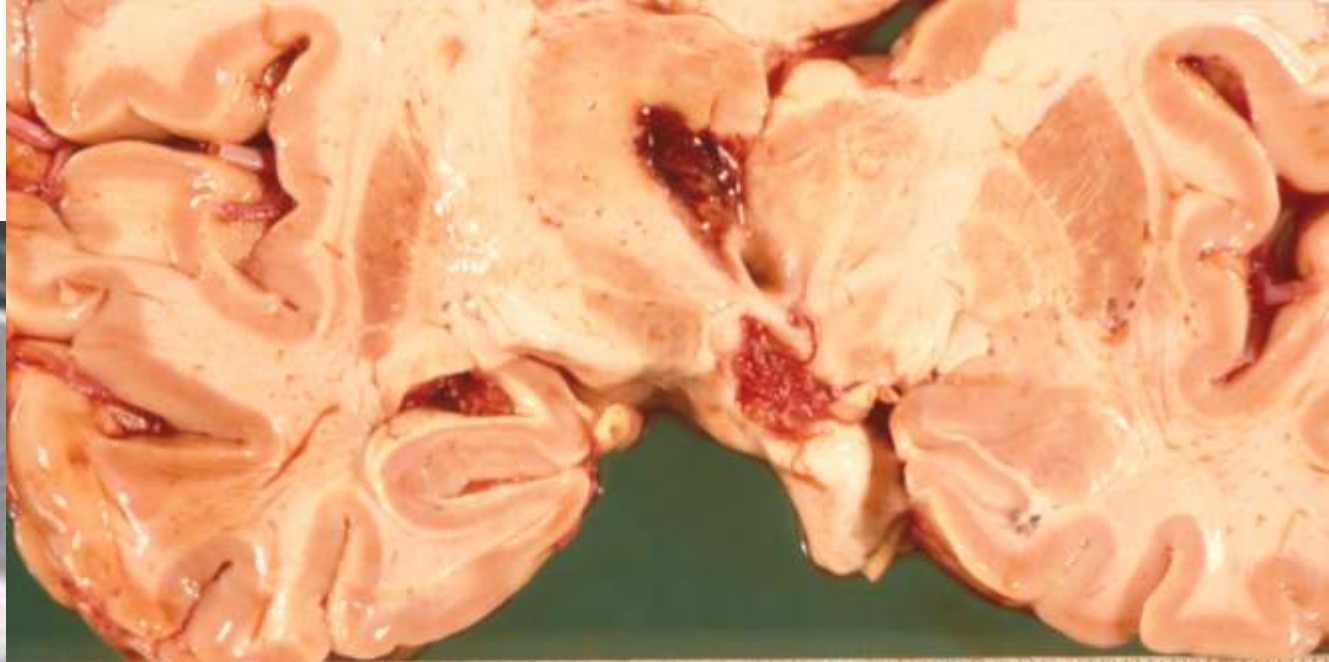
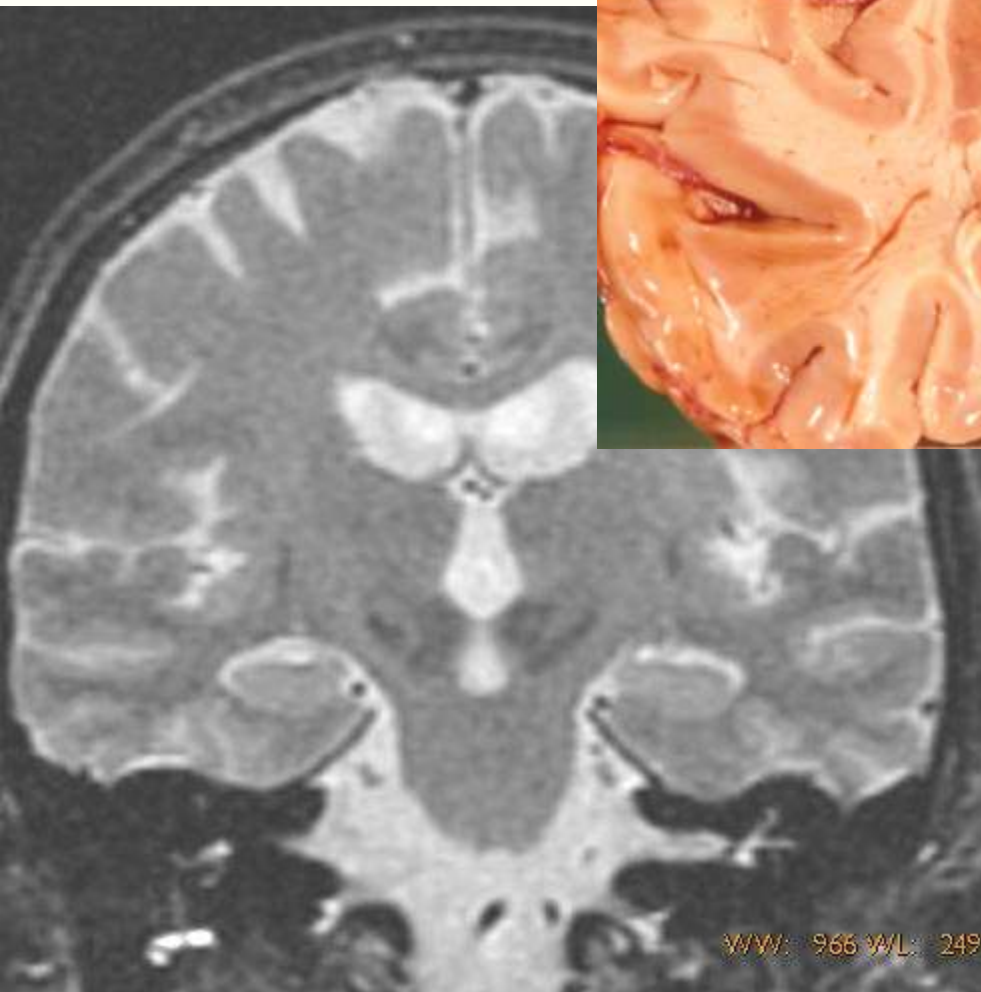




WPM, 129 WL

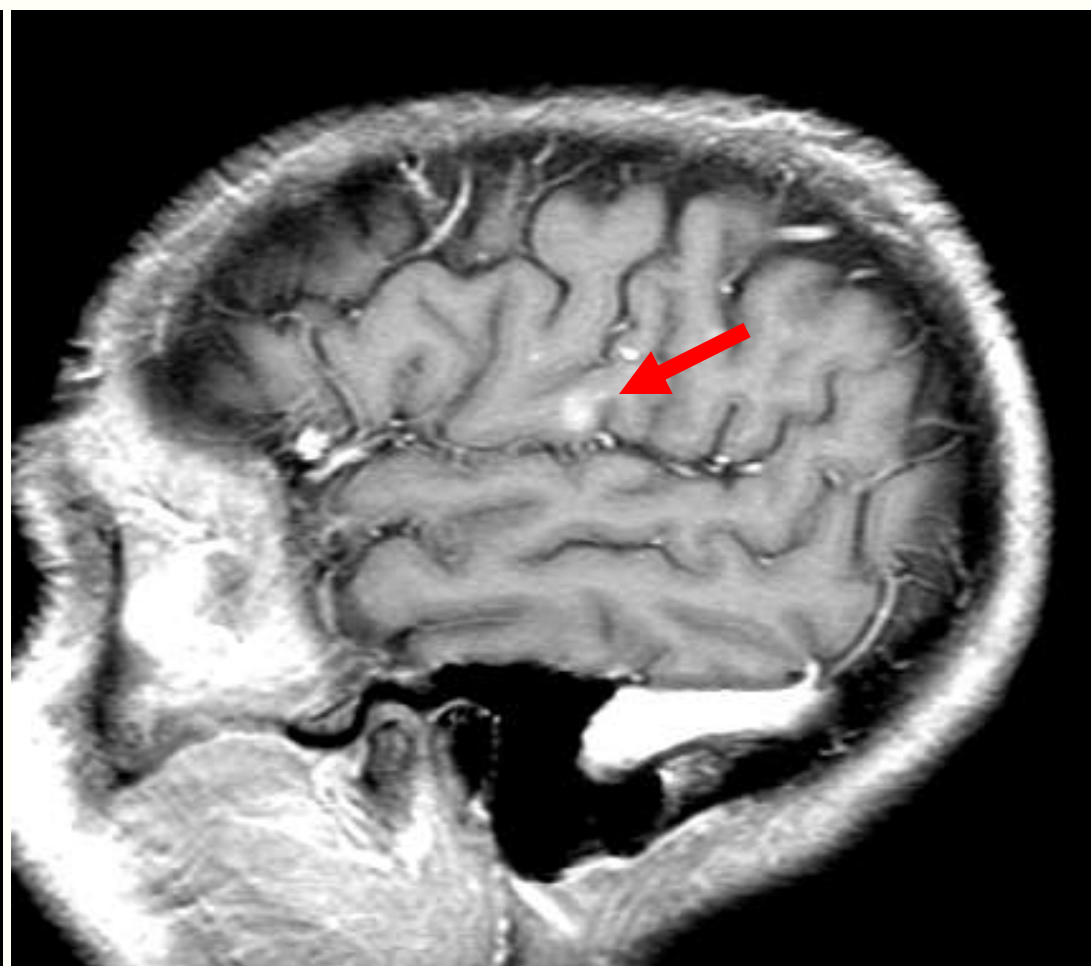


Courtoisie J Floquet (Nancy)



Courtoisie J Floquet (Nancy)

LE LOBE FRONTAL



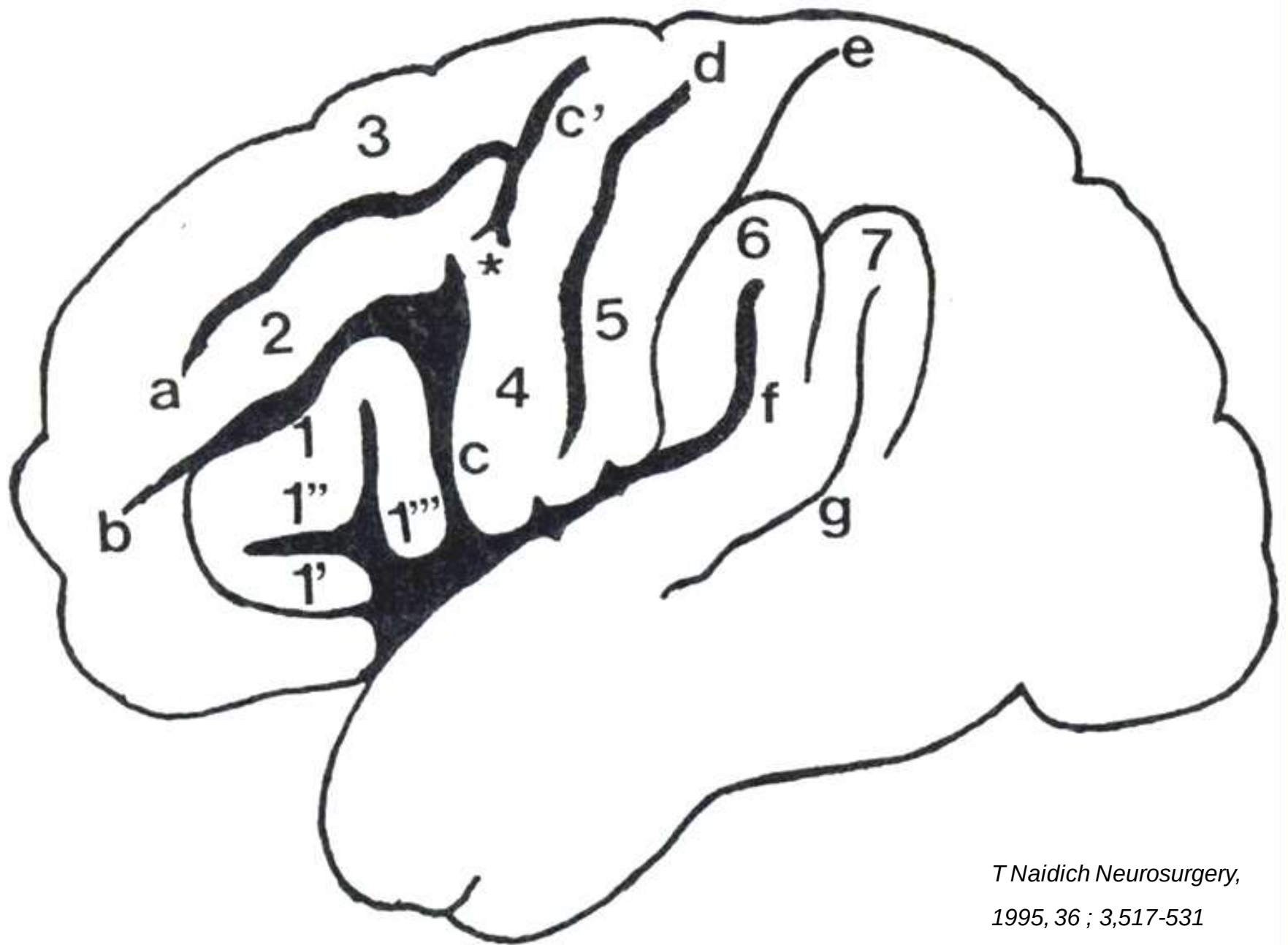
QUIZ

CETTE LESION EST ELLE :

TEMPORALE ?

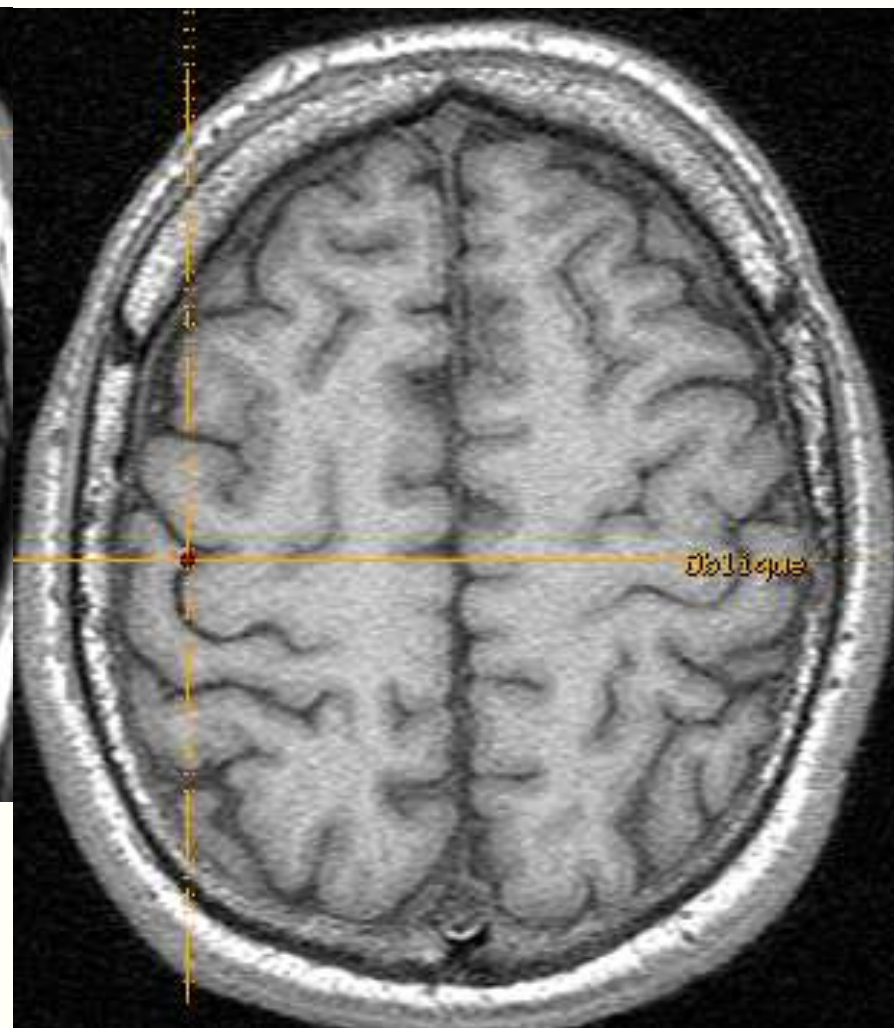
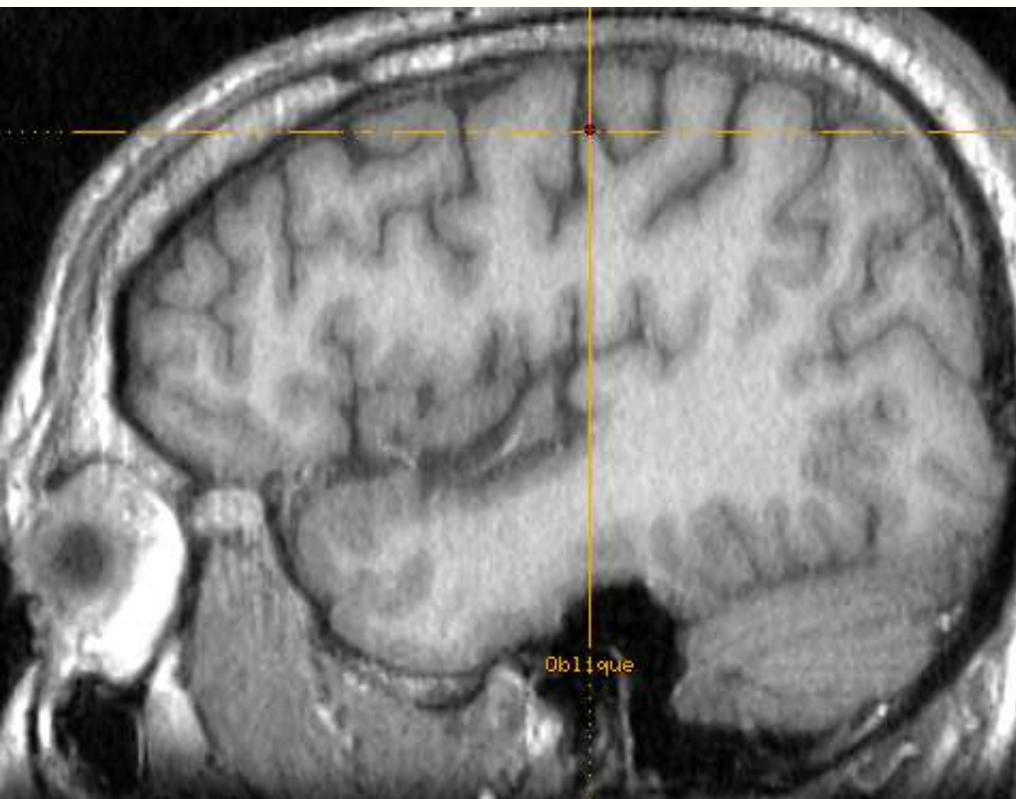
PARIETALE ?

FRONTALE ?

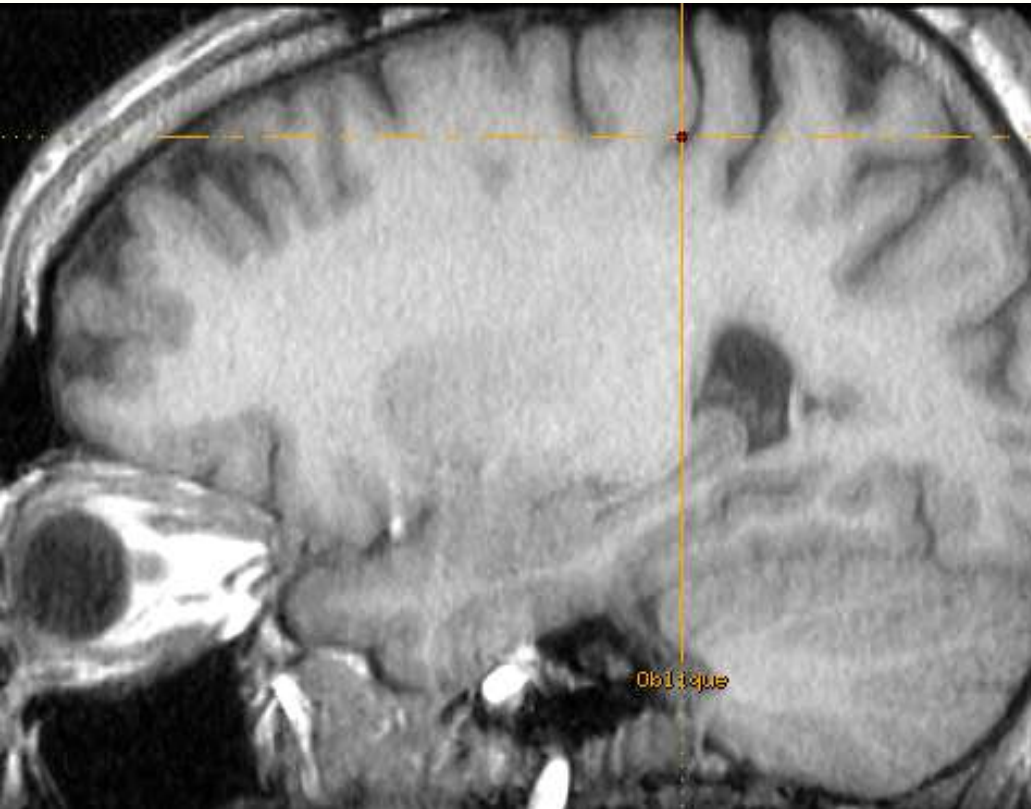


*T Naidich Neurosurgery,
1995, 36 ; 3,517-531*

SILLON CENTRAL (II)



SILLON CENTRAL (III)

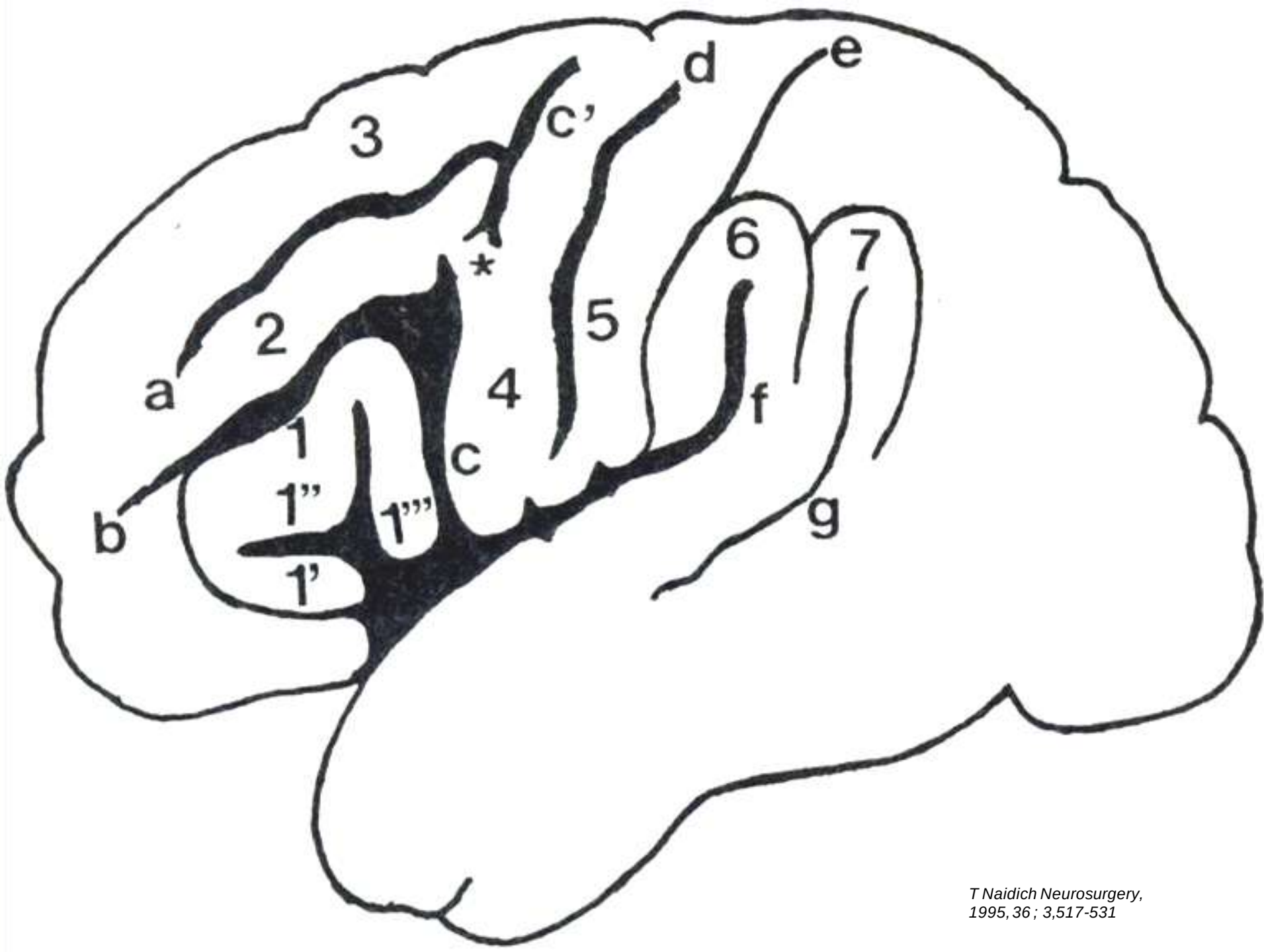


SILLON CENTRAL (IV)

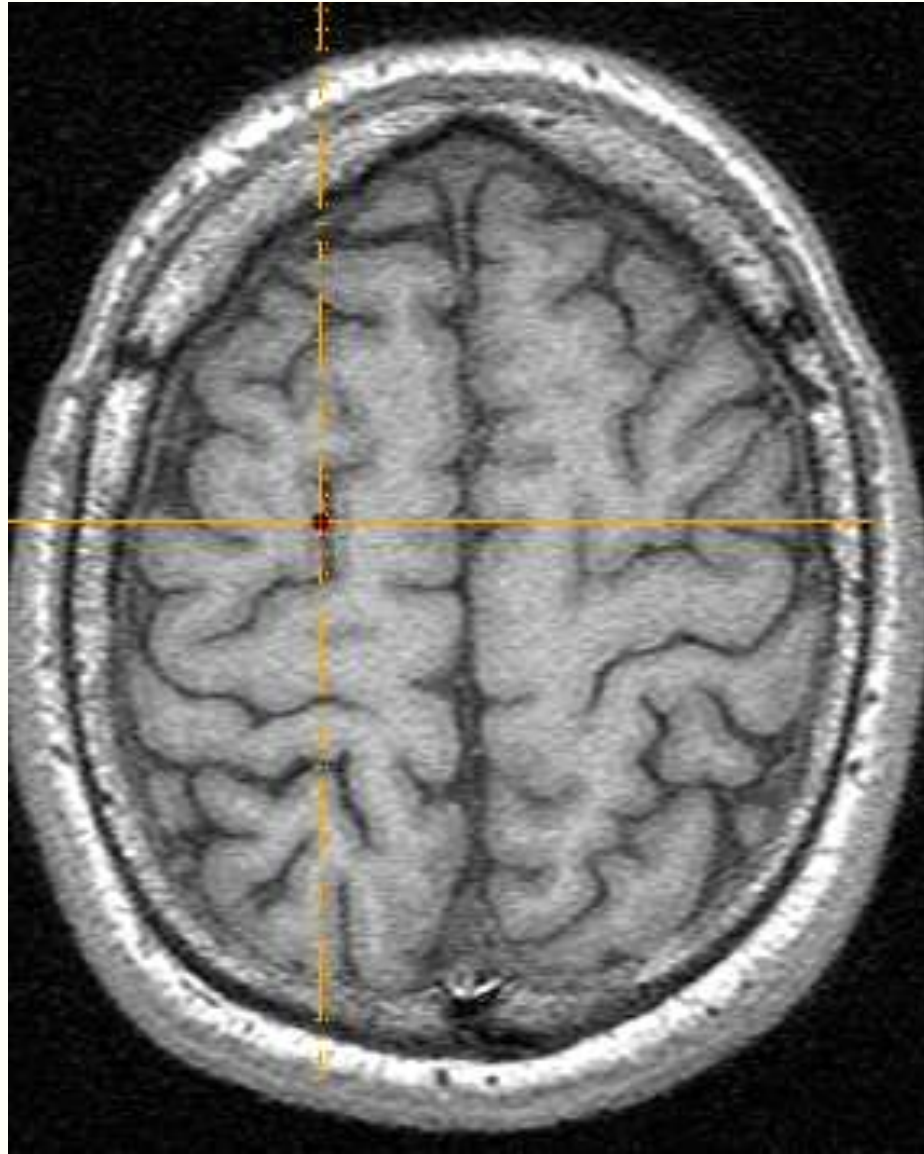


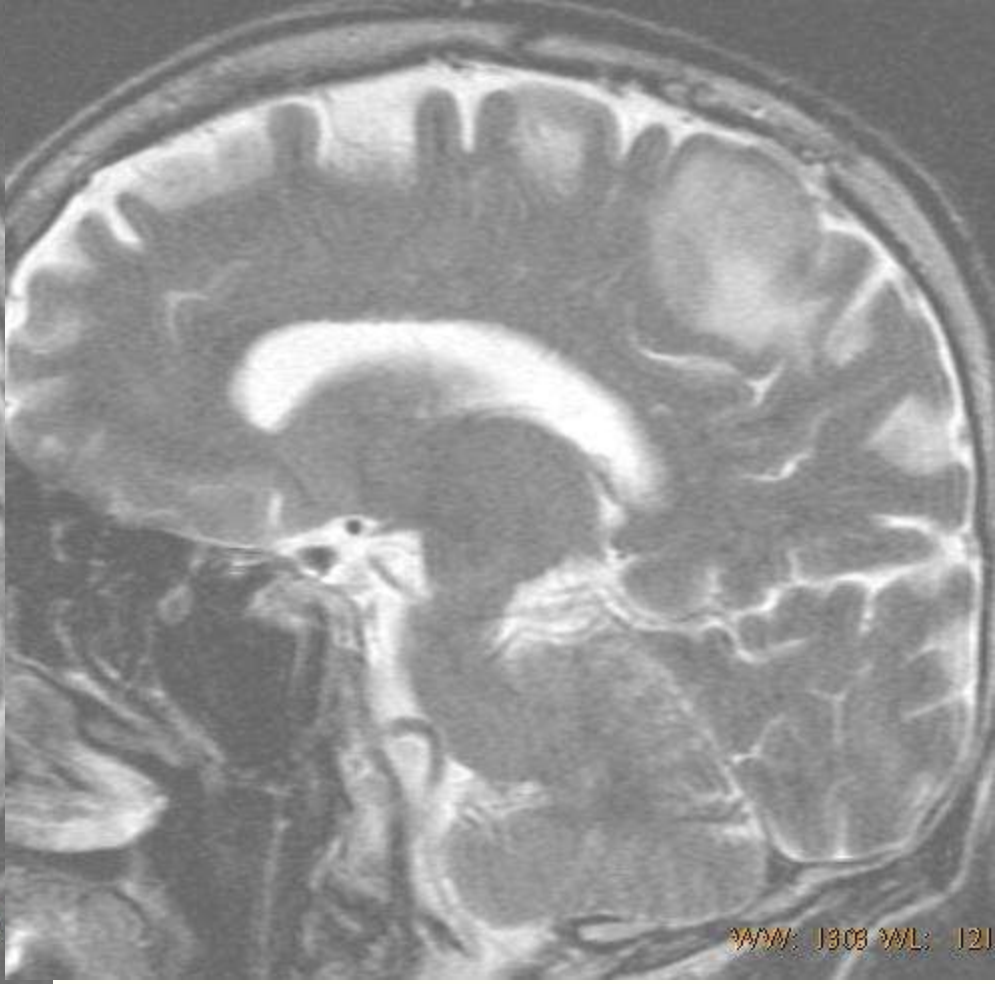
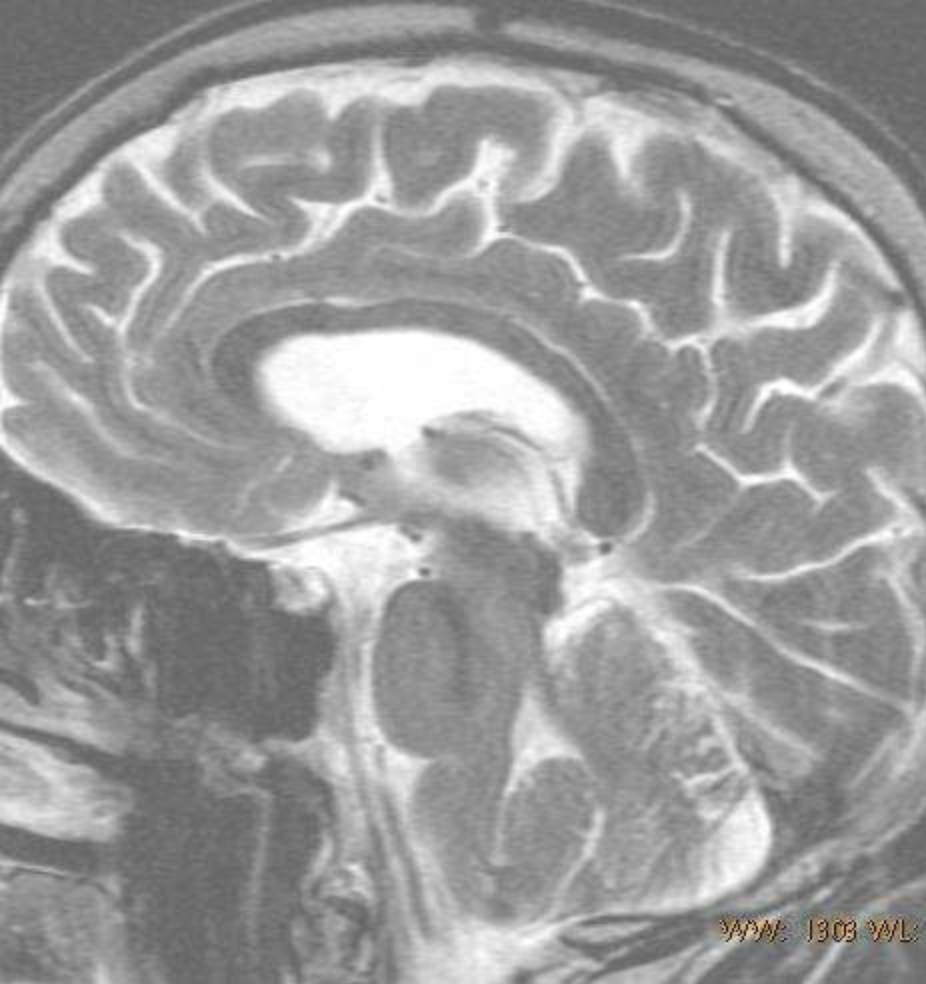
SILLON FRONTAL SUPERIEUR

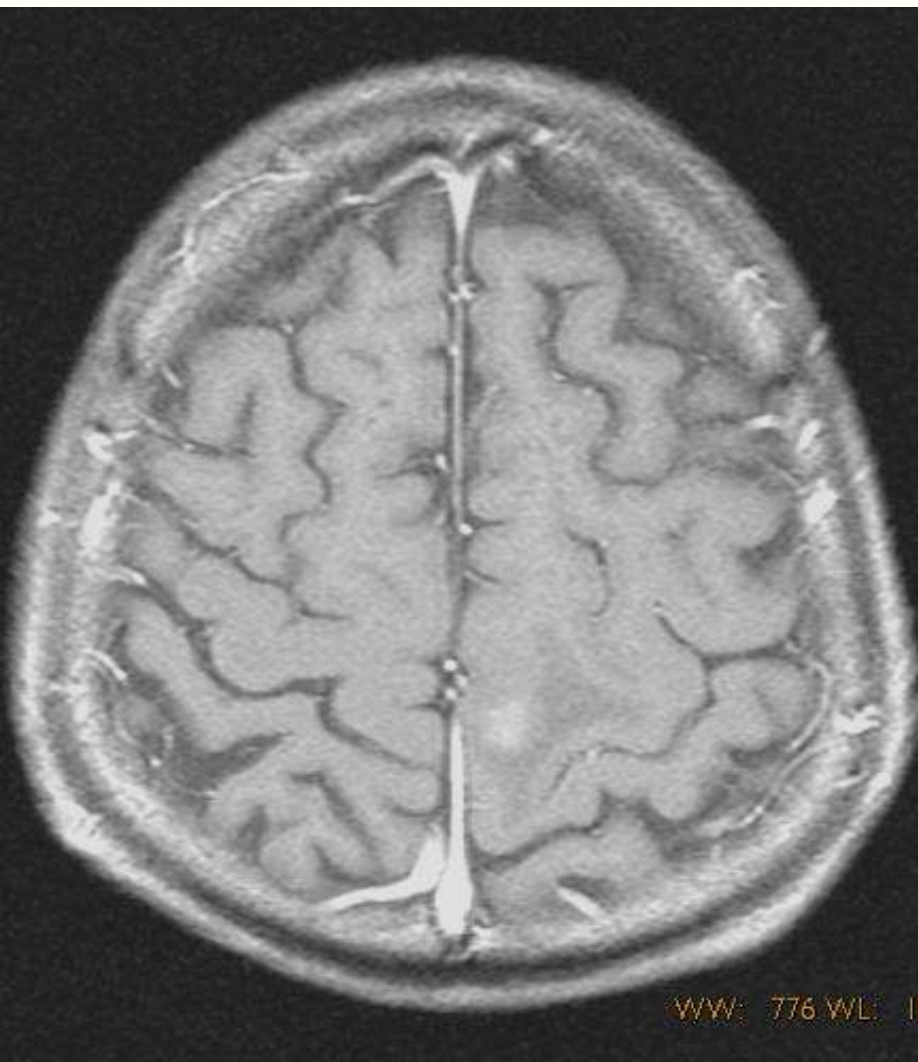
ASPECTS CLASSIQUES



SILLON FRONTAL SUP





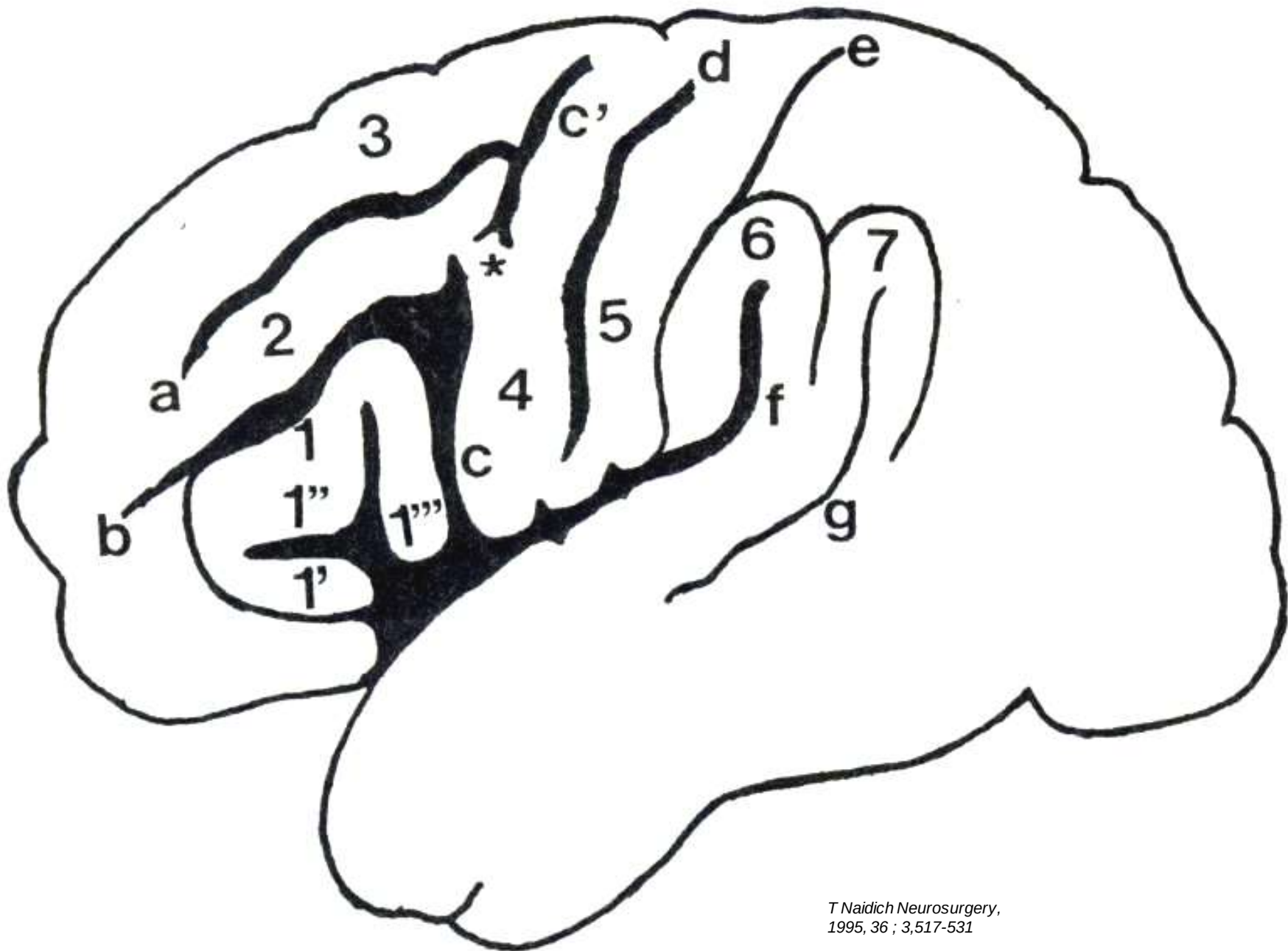


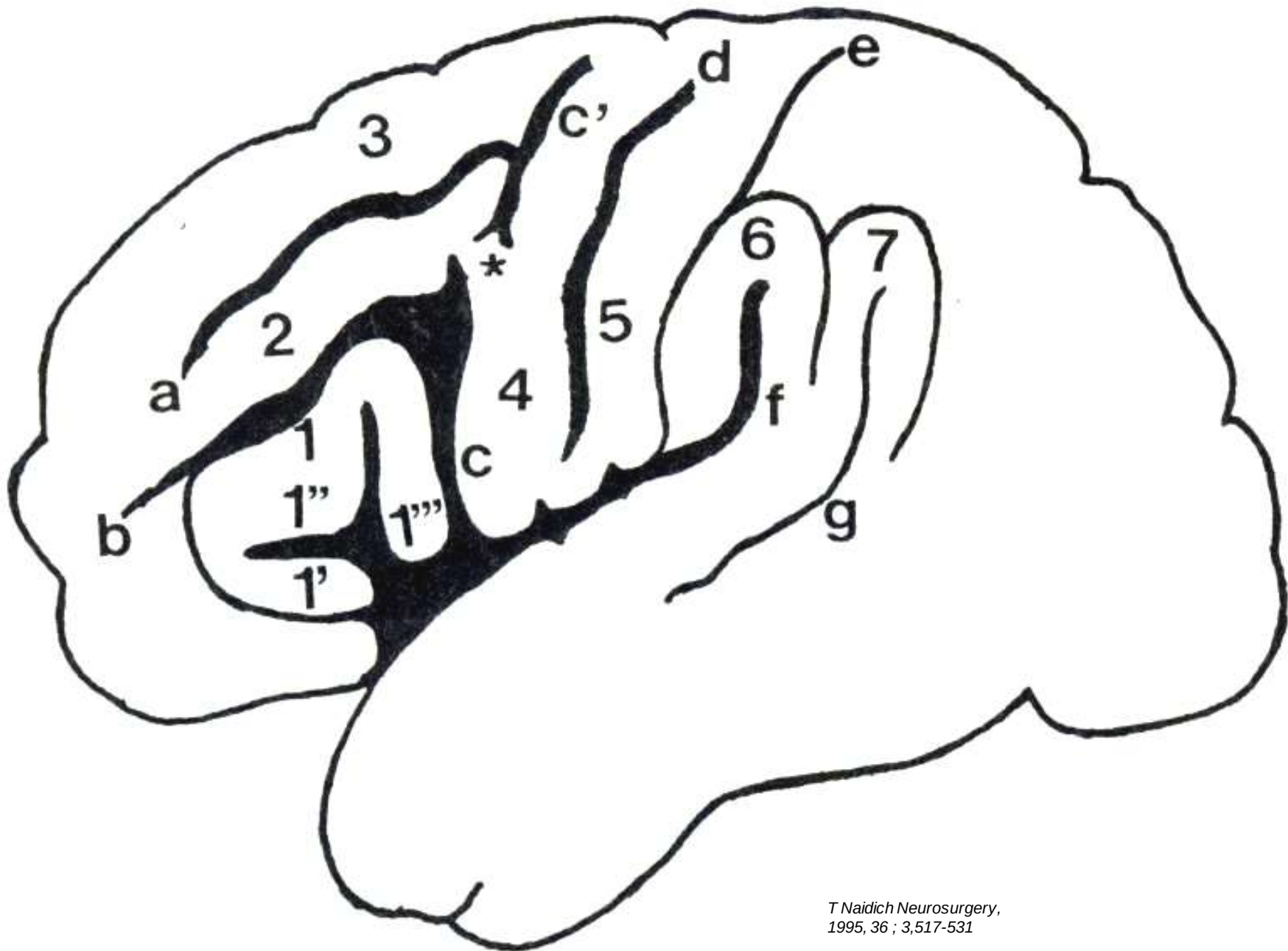
GYRUS FRONTAL MOYEN (F2)

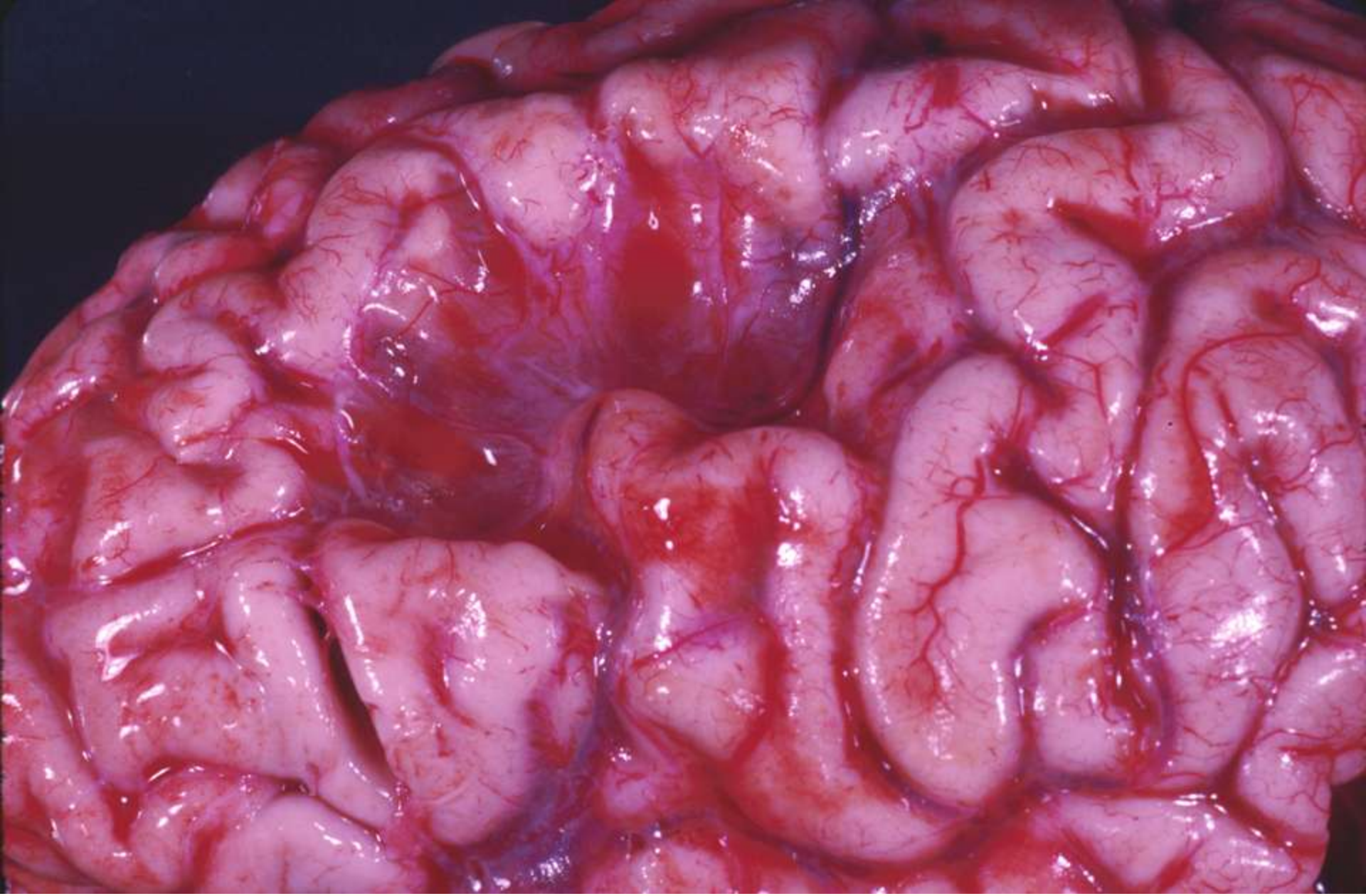
LIMITES :

SILLON FRONTAL SUPERIEUR

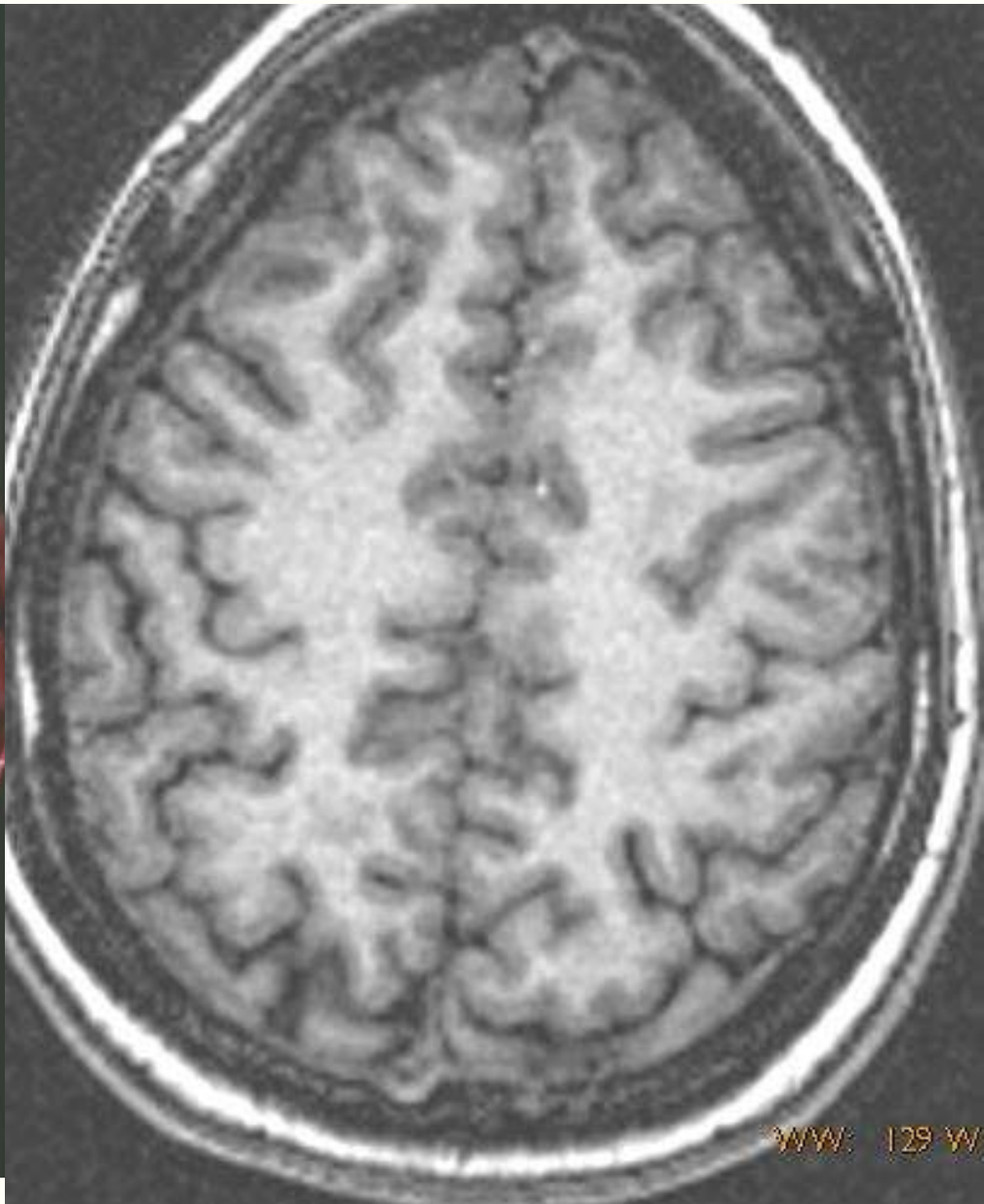
SILLON FRONTAL INFERIEUR







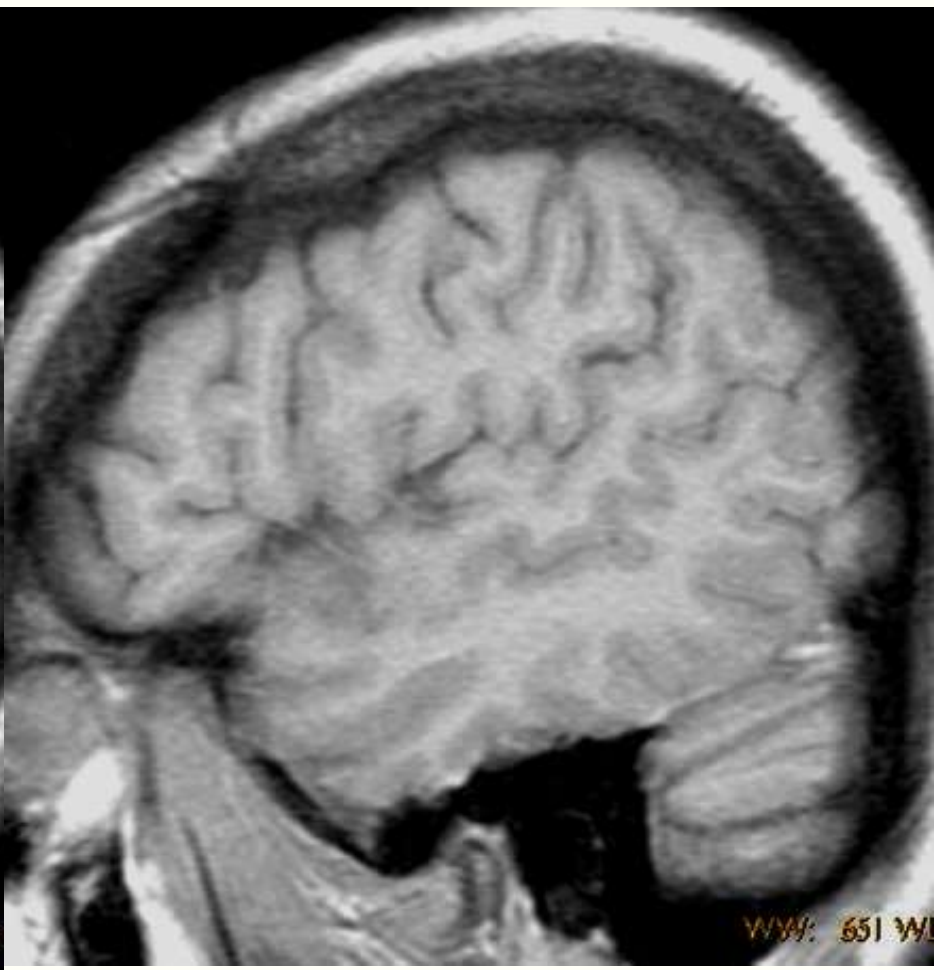
Courtoisie J Floquet (Nancy)



Courtoisie J Floquet (Nancy)

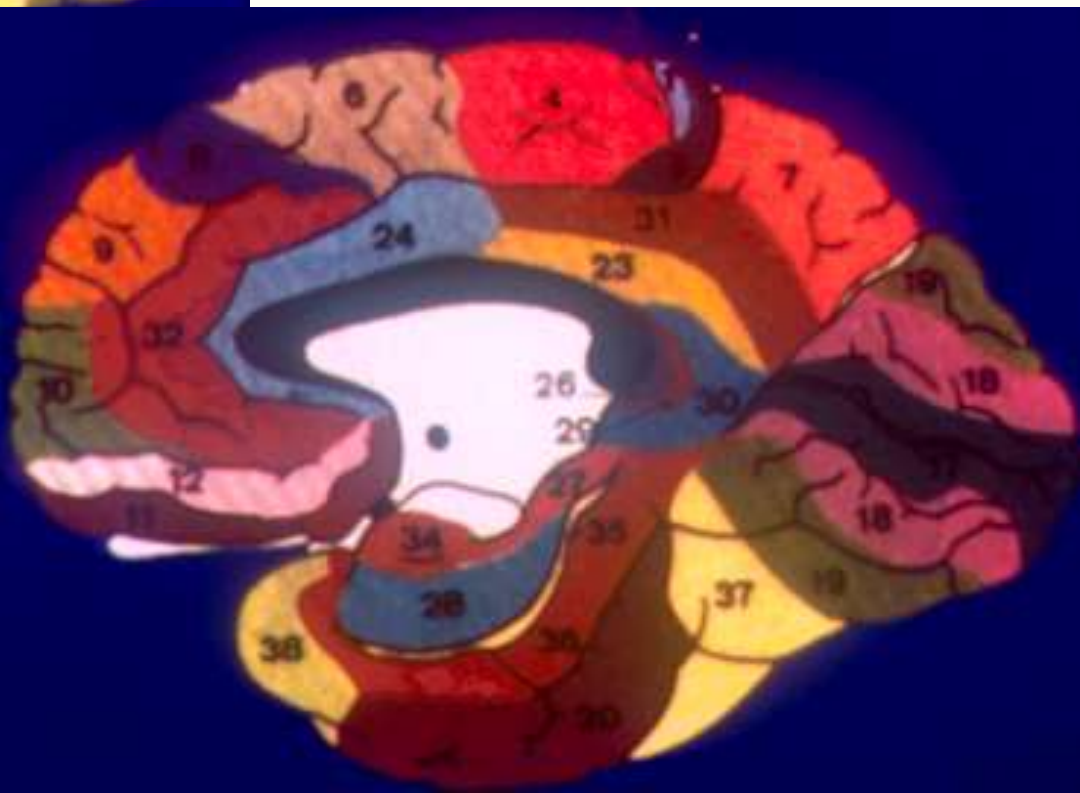
GYRUS FRONTAL INFERIEUR (F3)

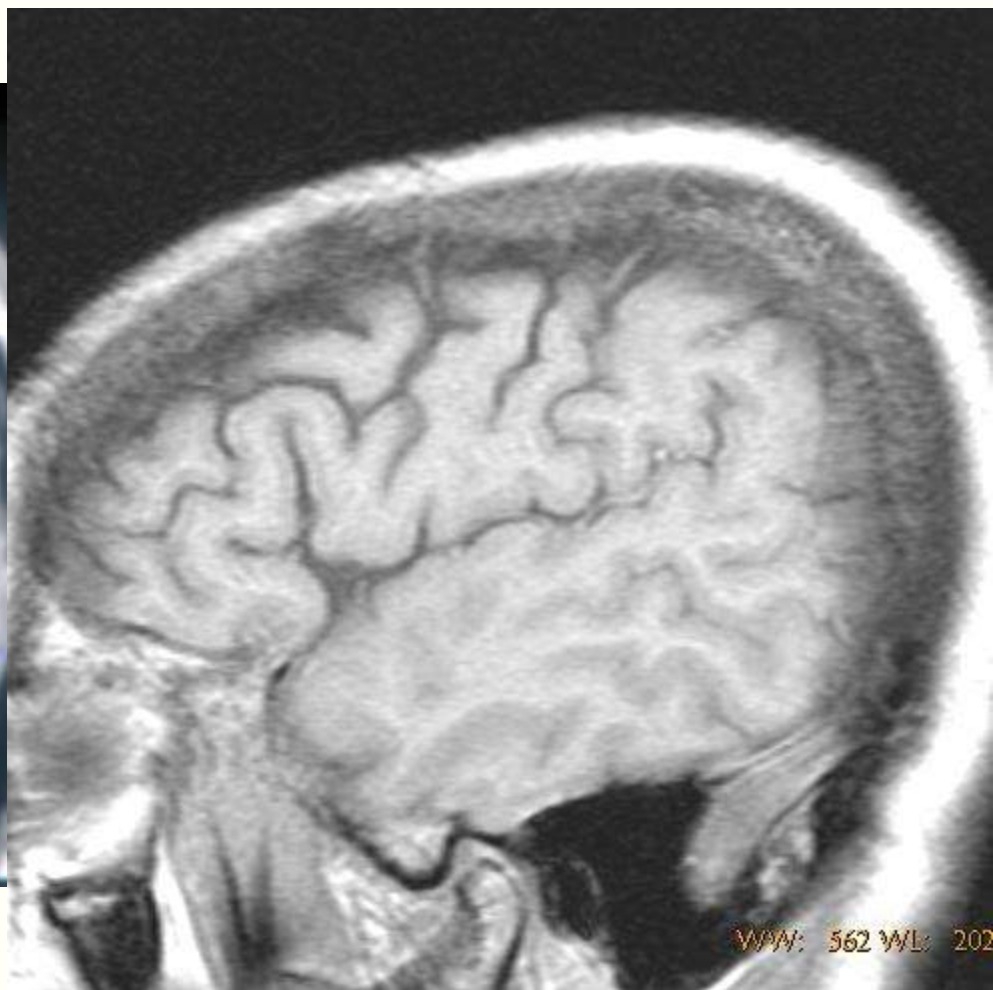
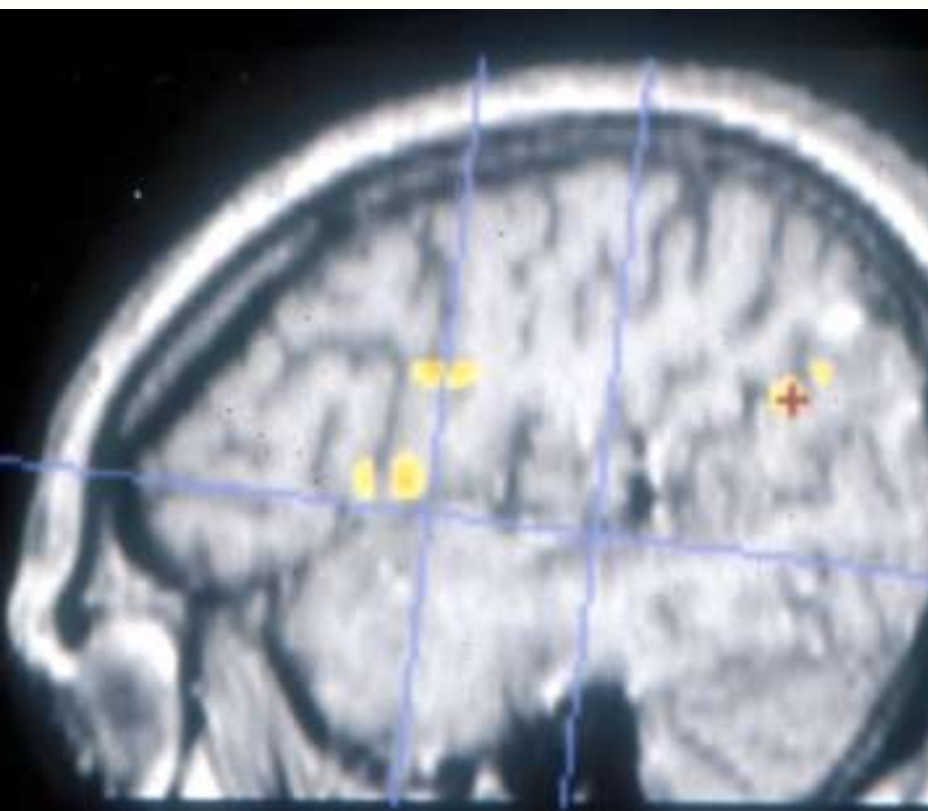
LIMITES :
SILLON FRONTAL INFERIEUR
FACE INFERIEURE

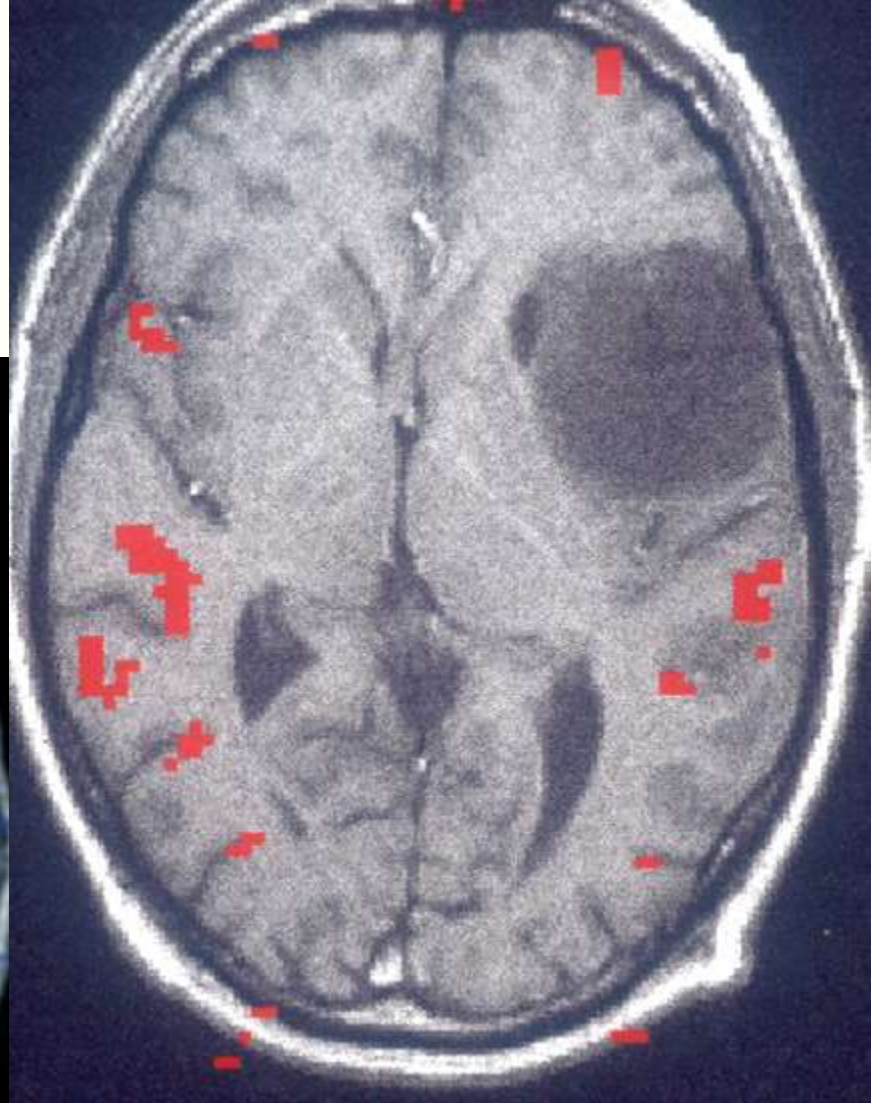
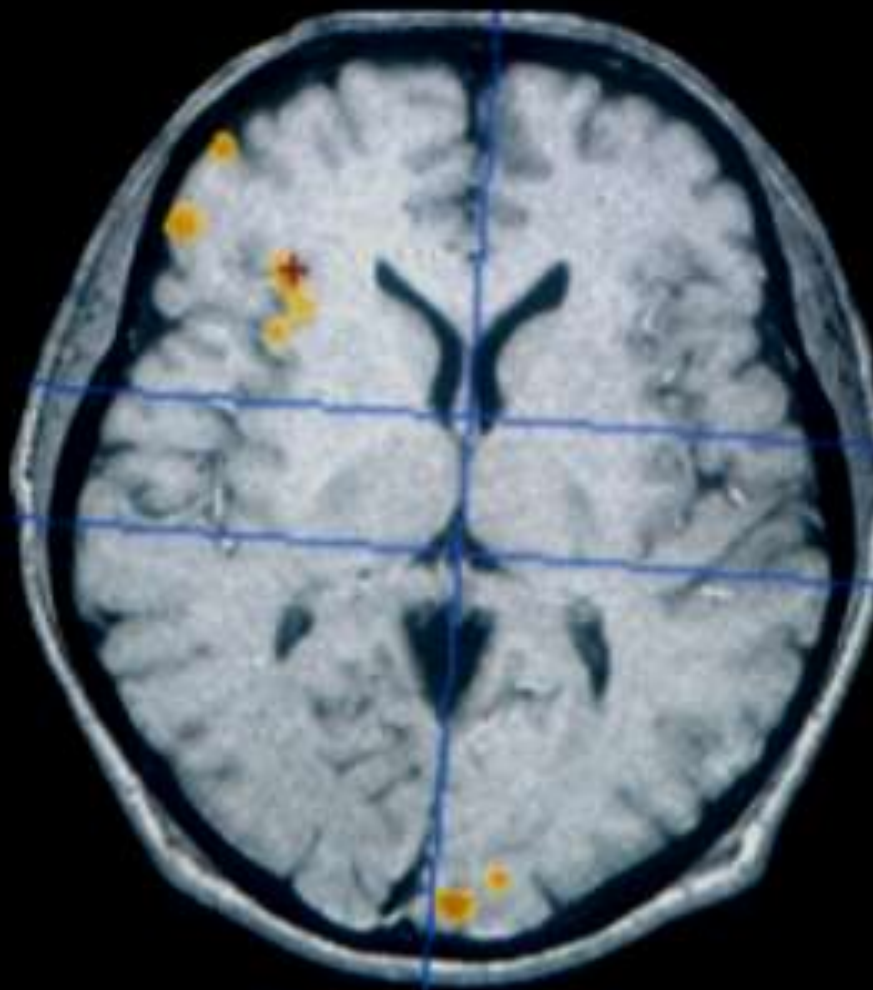


AIRES DU LANGAGE (I)

- AIRE DE BROCA (F3, 45 et 44)
- FAISCEAU ARQUE
- AIRE DE WERNICKE (Gy. Angulaire 39, aires Visuelles 17-19)





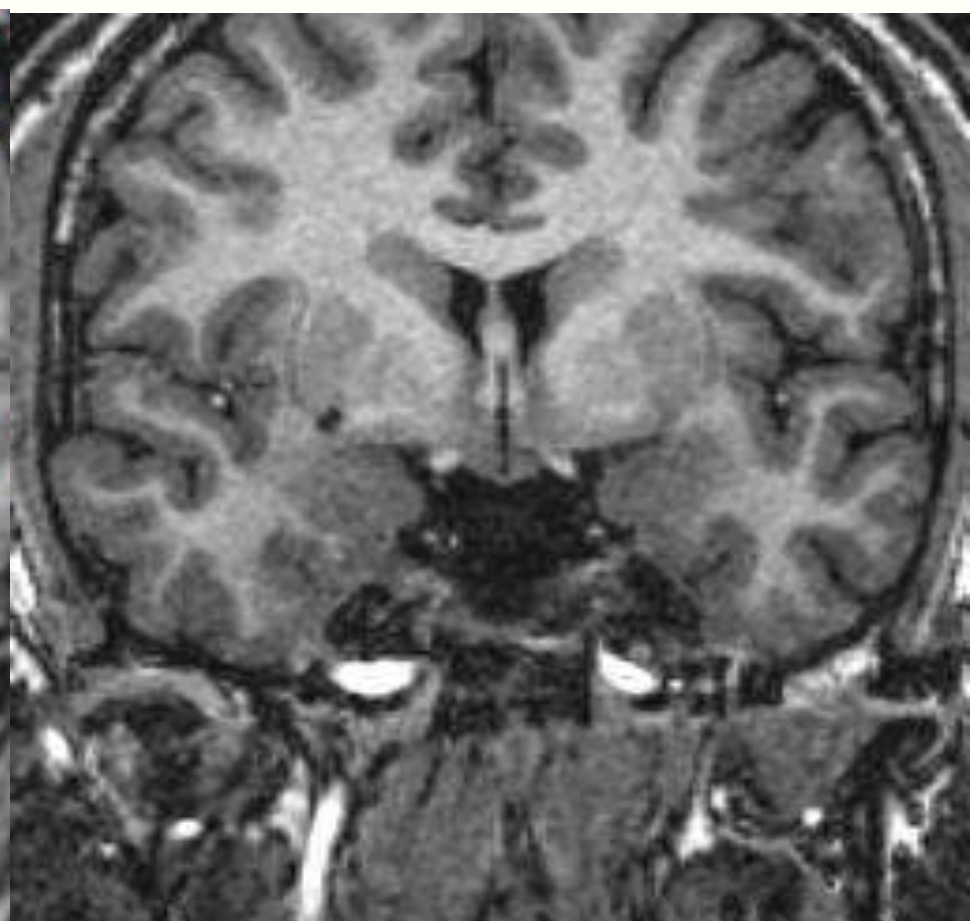
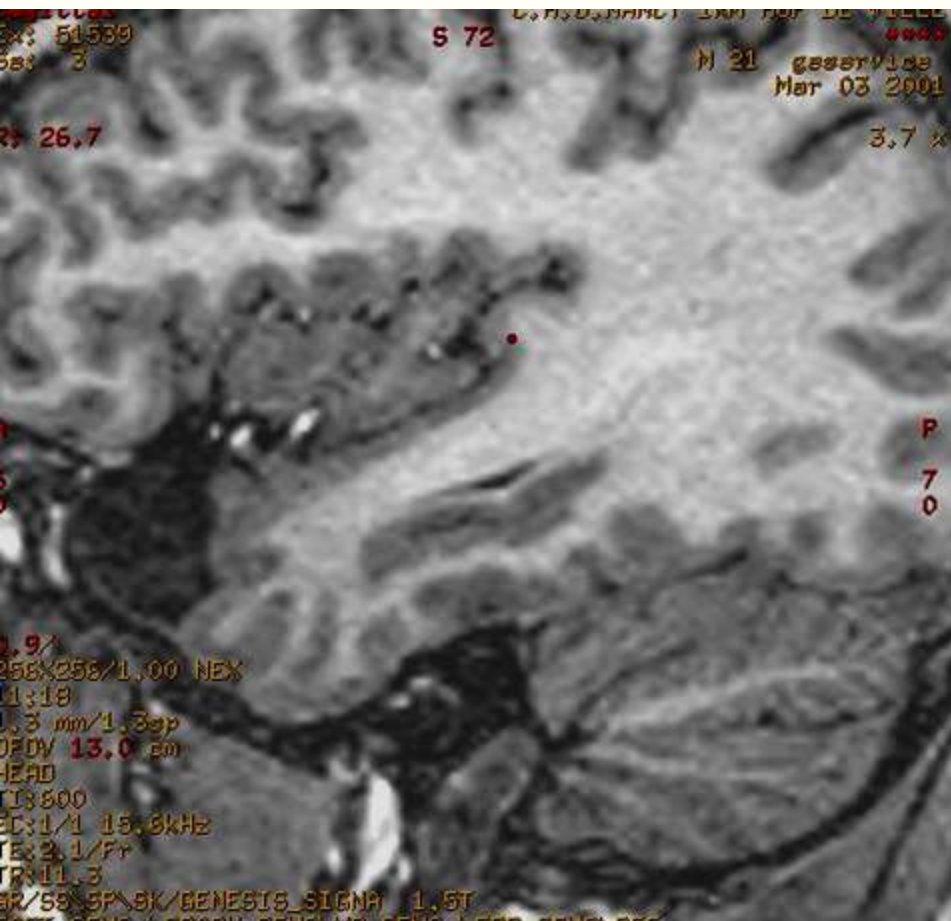


AIRES DU LANGAGE (II)

- F3 : FORMULATION D'UN PROGRAMME COORDONNEE DE VOCALISATION
- LESIONS DOMINANTES : APHASIE MOTRICE
- LESIONS DROITES : APROSODIE (monotone et amélodique)

INSULA

- Cytoarchitecture :
 - Antérieur : agranulaire
 - Sillon central insulaire
 - Postérieur : pariétal
- Somatotopie : très frustrée
- Stimulation : effets viscéro-sensibles, salivation, motricité gastrique, nausées et « sensations abdominales »
- Lésions : mutisme similaire aux lésions cingulaires

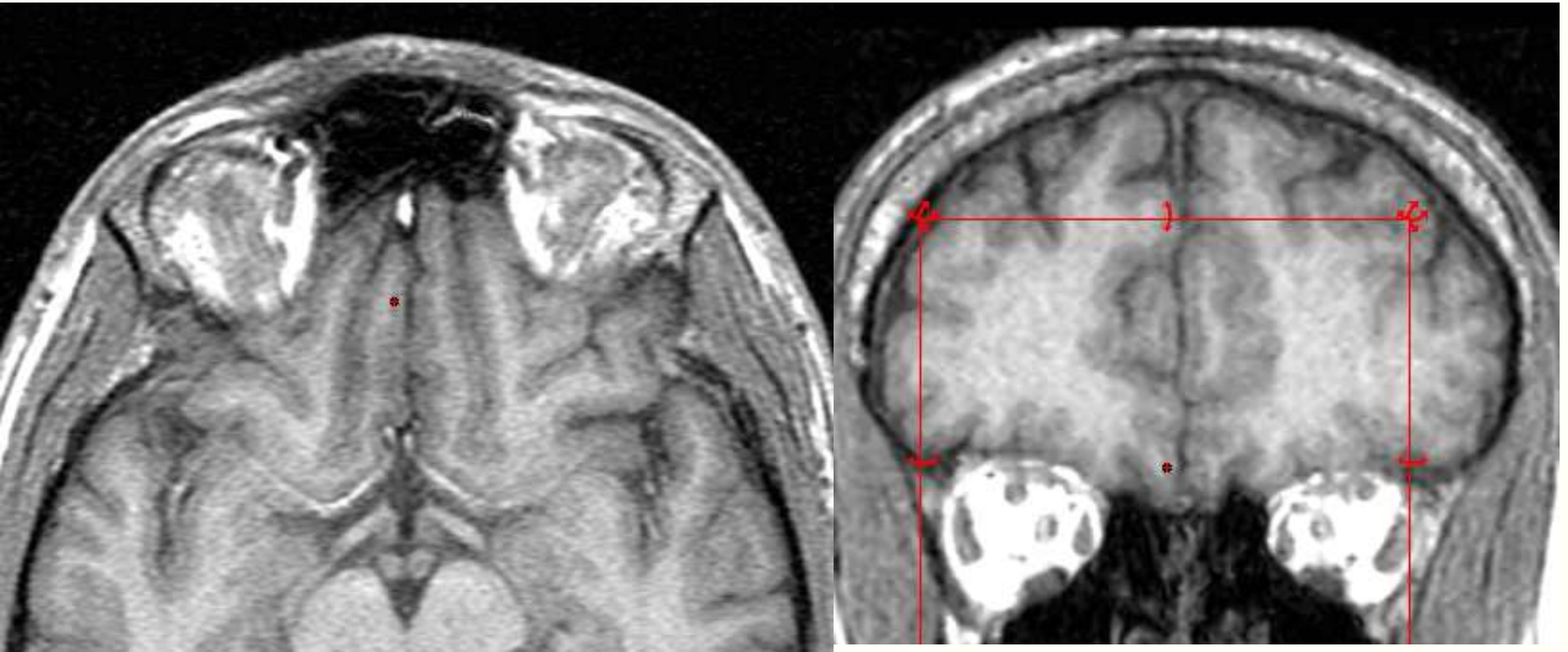


LOBE FRONTAL

FACE INFÉRIEURE

GYRUS RECTUS,
GYRI ORBITAIRES MÉDIAL,
MOYEN, LATÉRAL

GYRUS RECTUS

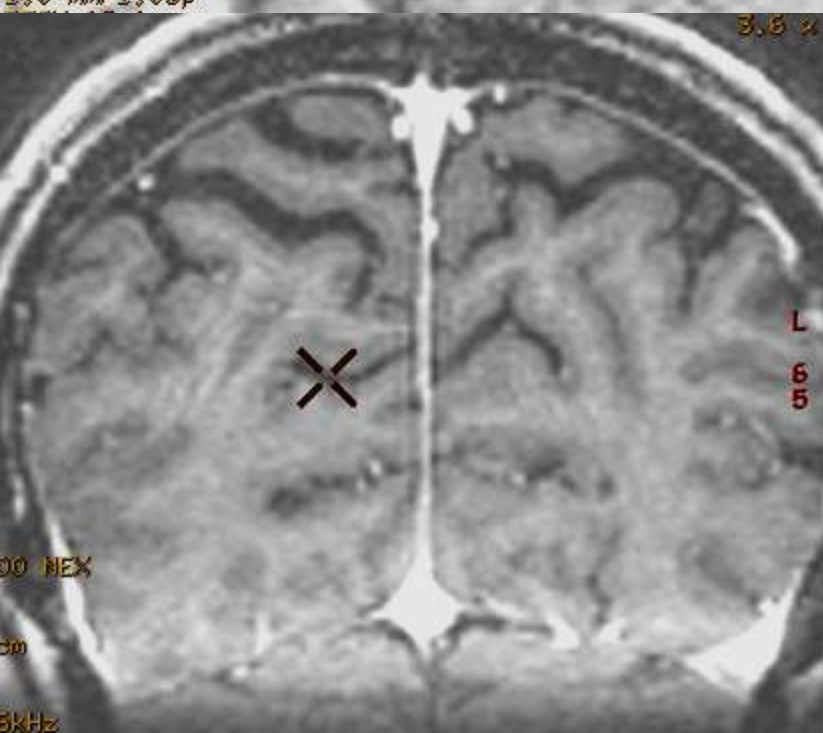
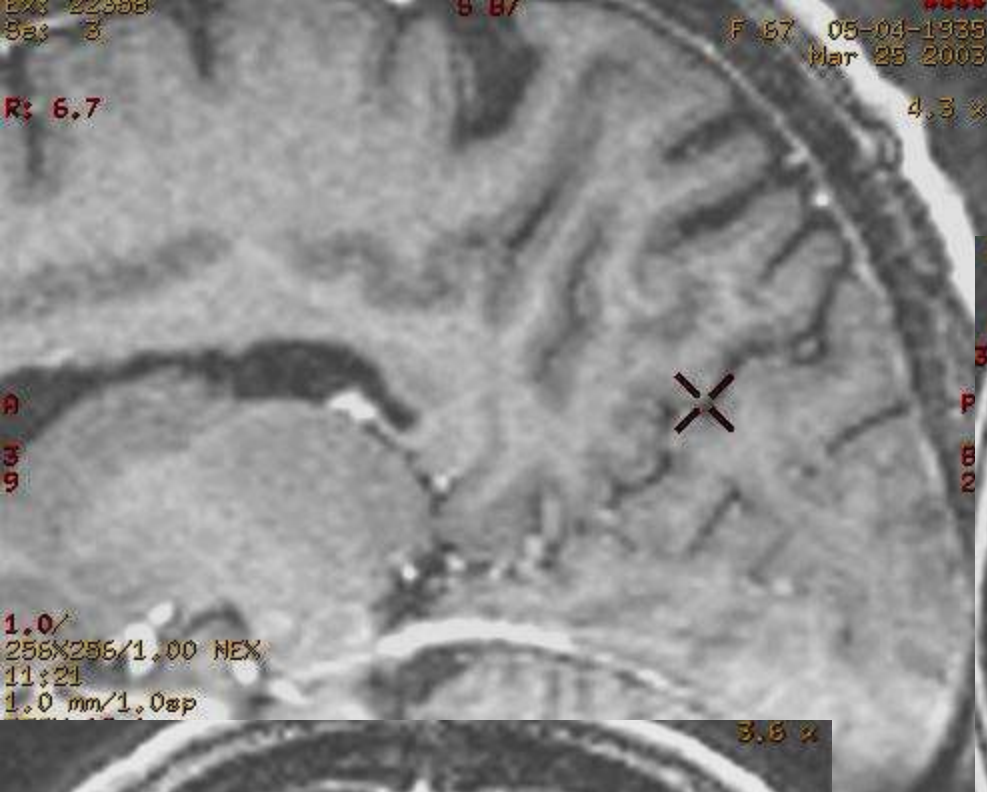


LOBE PARIETAL

- FACE MEDIALE :
- Sillon INTRAPARIETAL
- Limites :
 - Sillon cingulaire
 - Sillon P-Occipital médial
 - Sillon central

SURFACE MEDIALE du LOBE PARIETAL



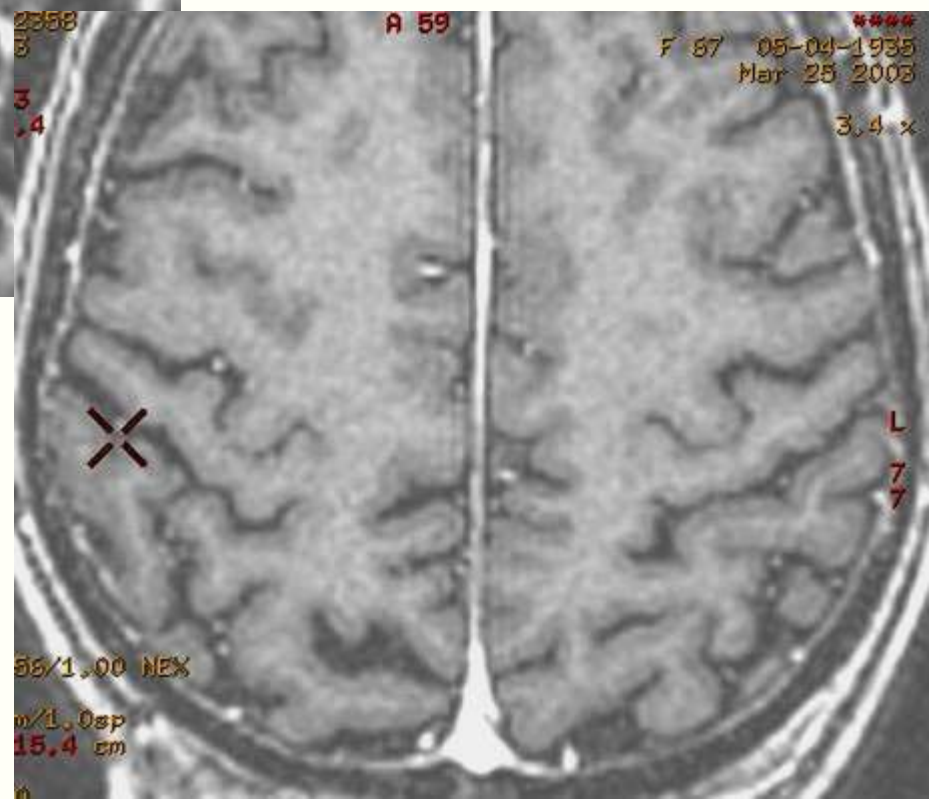
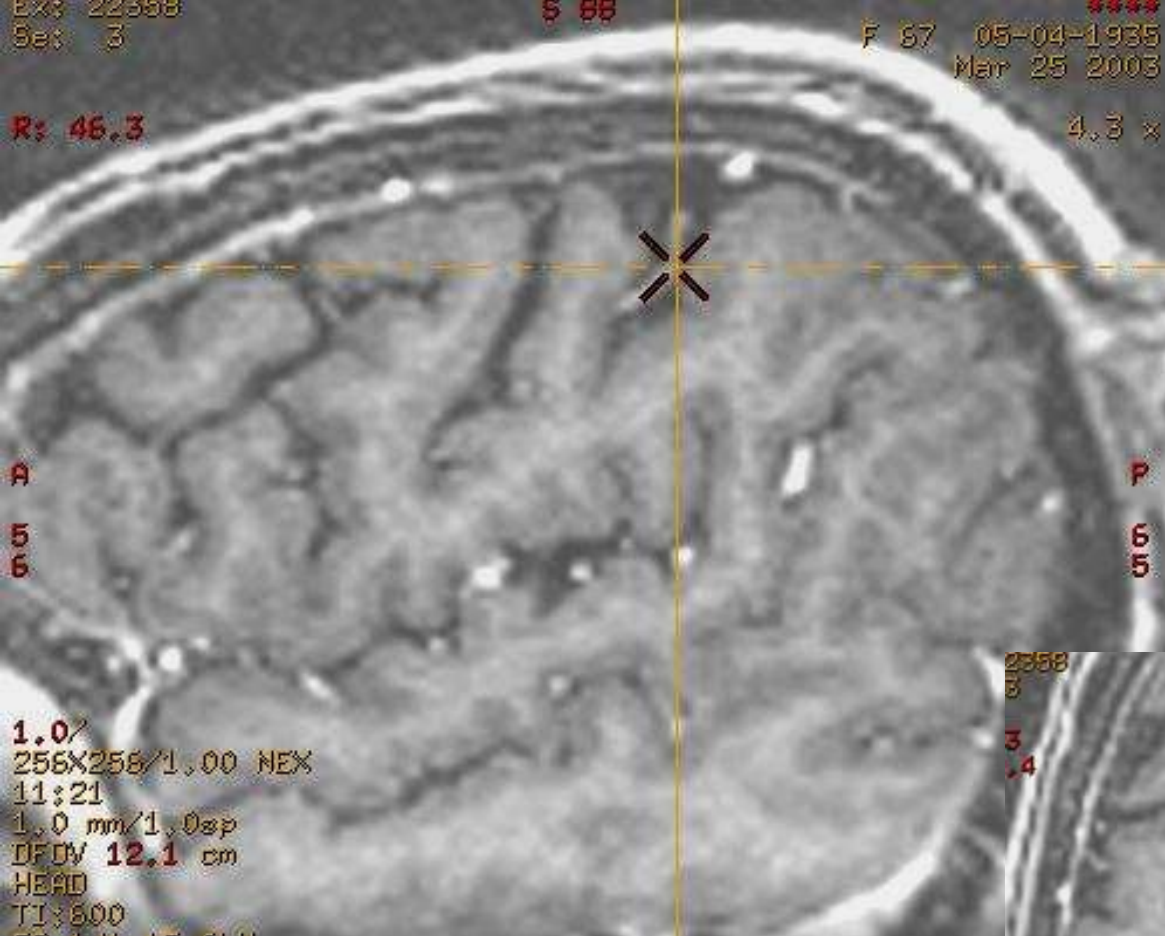


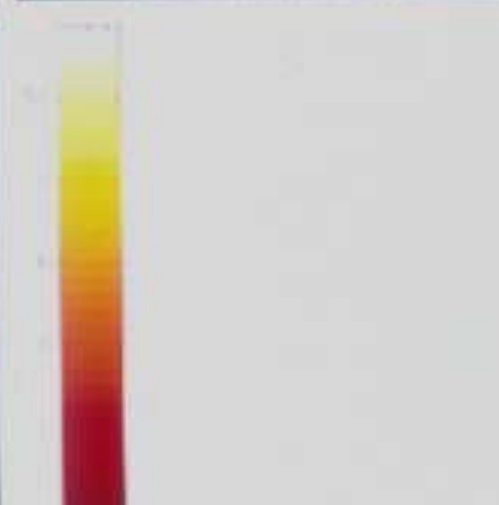
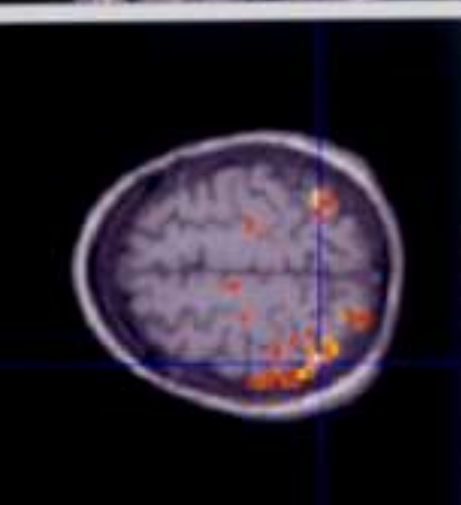
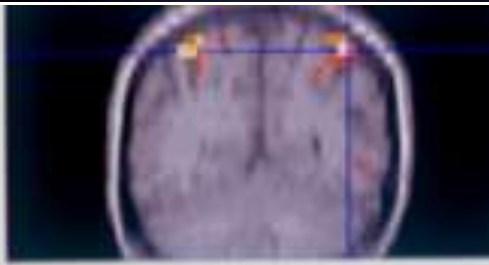
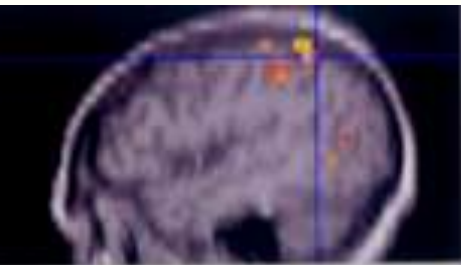
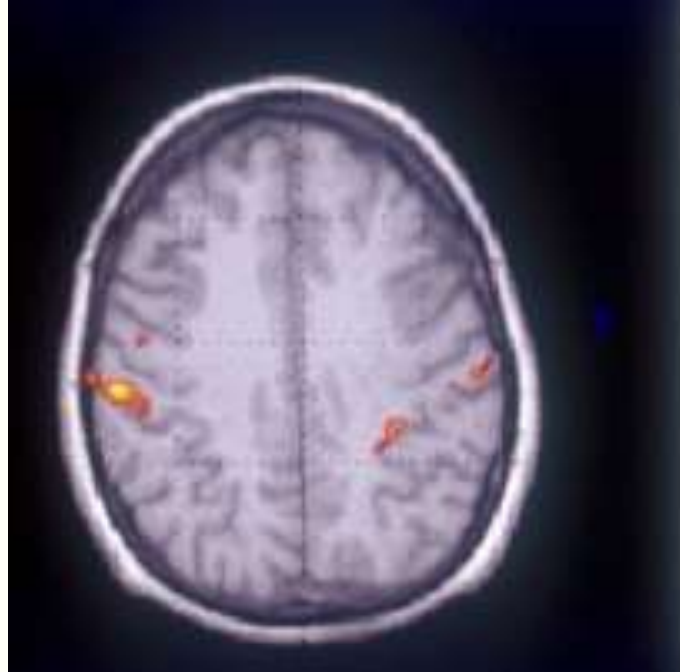
LOBE PARIETAL

- **FACE LATERALE**
- **SILLON PARIETO-OCCIPITAL LAT.**
- **SILLON CENTRAL**
FISSURE LATERALE
- **SILLON POST-CENTRAL**

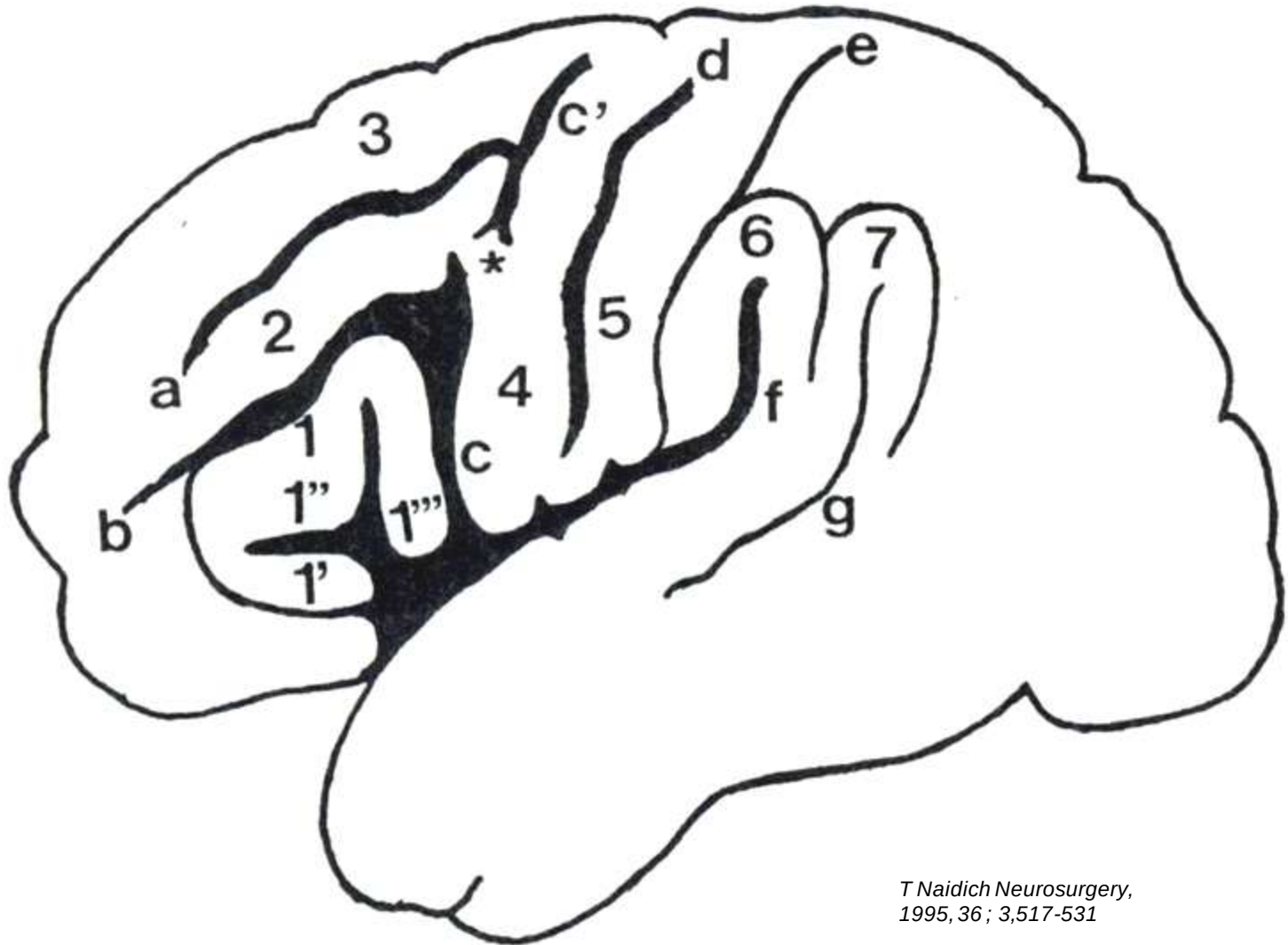
LOBE PARIETAL : SURFACE CONVEXITE LATERALE

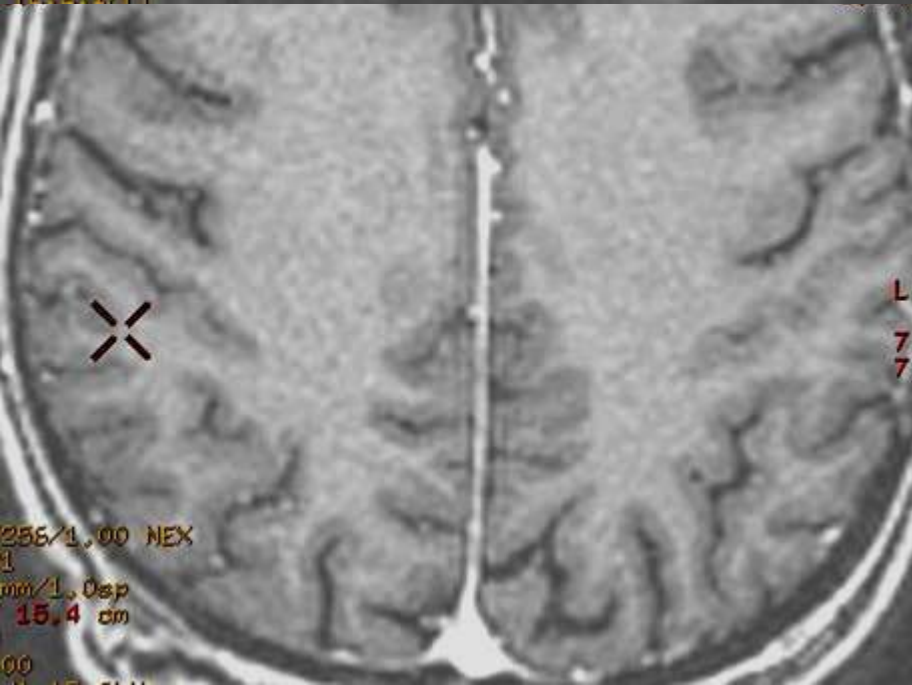
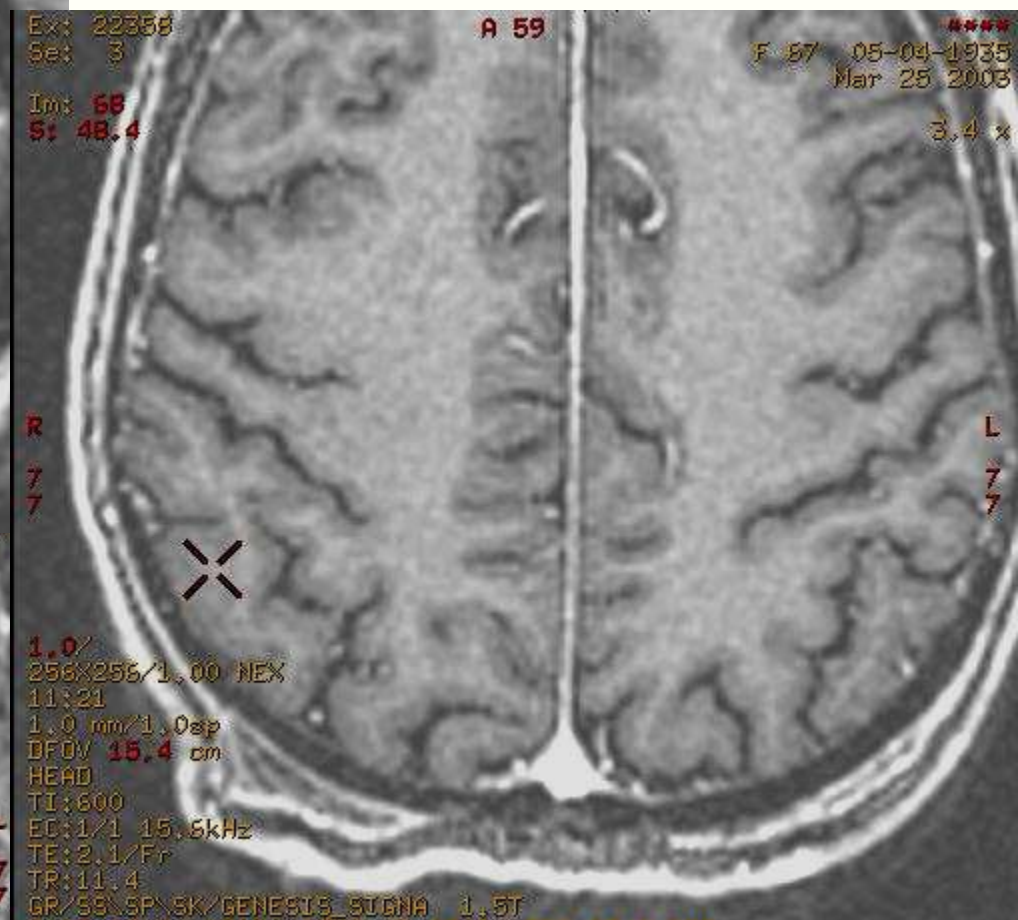
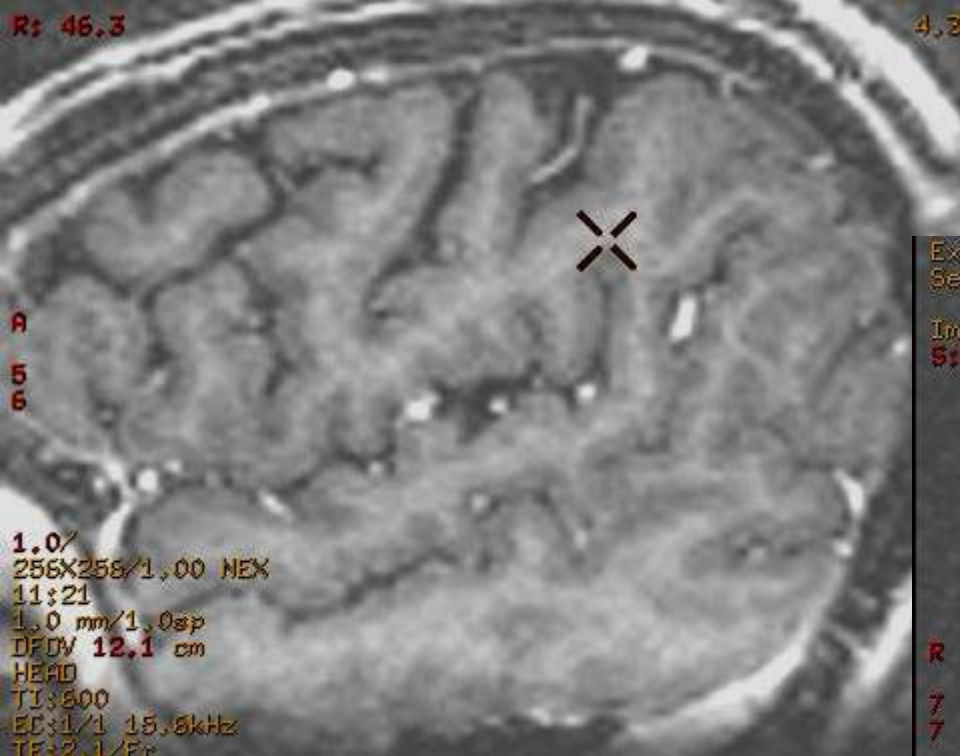


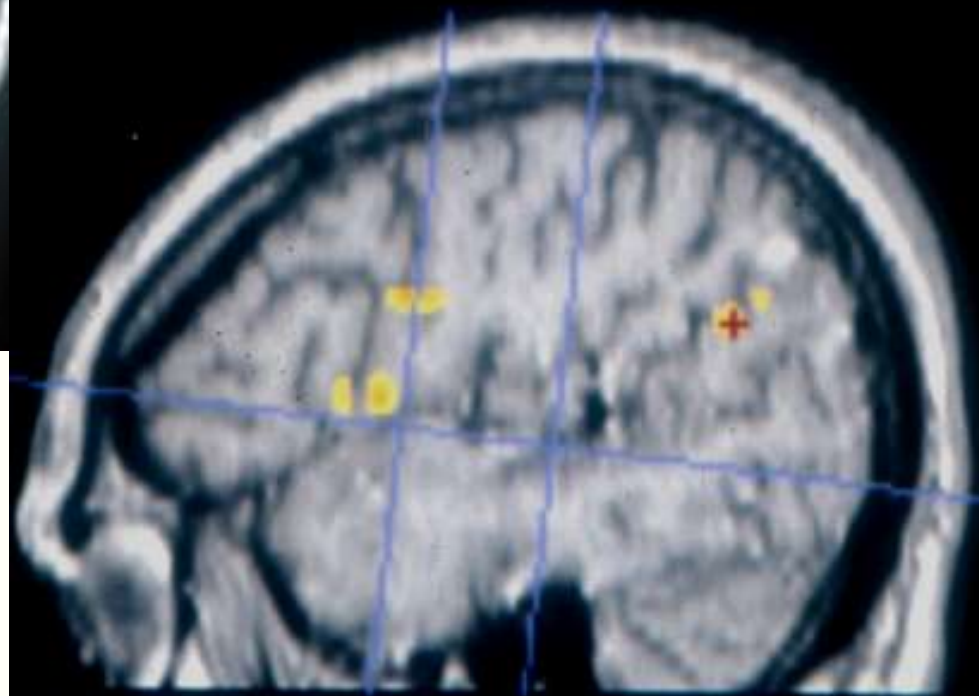




REGION PARIETO-TEMPORO- OCCIPITALE







LOBE OCCIPITAL

- **CUNEUS**
- **Face Médiale : S POMédial**
- **Face Latérale : S POLatéral**
- **CONTINUE Lobe Temporal**
- **FISSURE CALCARINE**
 - **Aspects et fusions**

LOBE OCCIPITAL : SURFACE CONVEXITE LATERALE



SURFACE CONVEXE INFERIEURE du LOBE OCCIPITAL



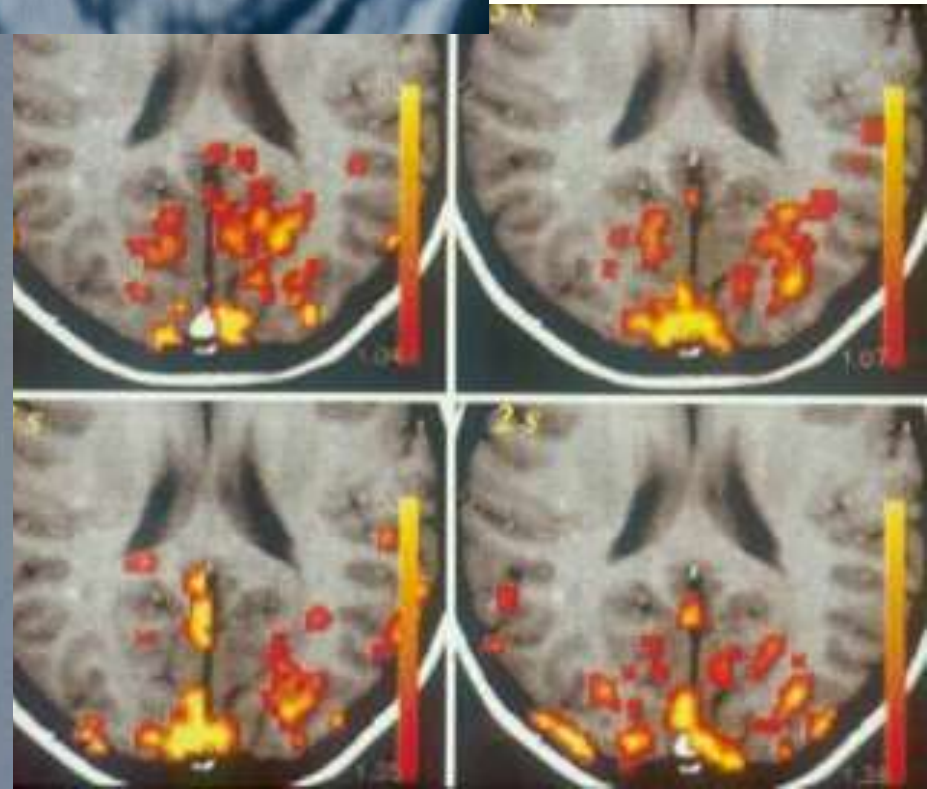
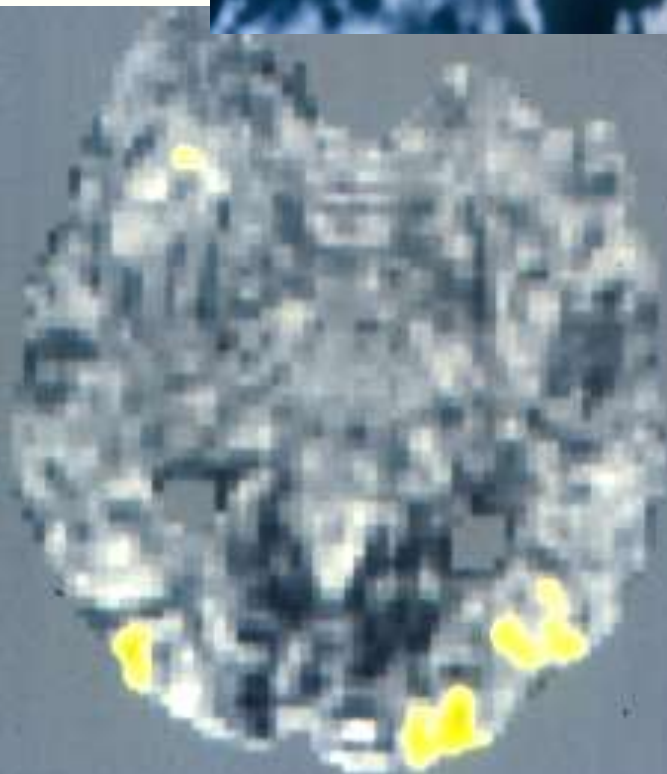
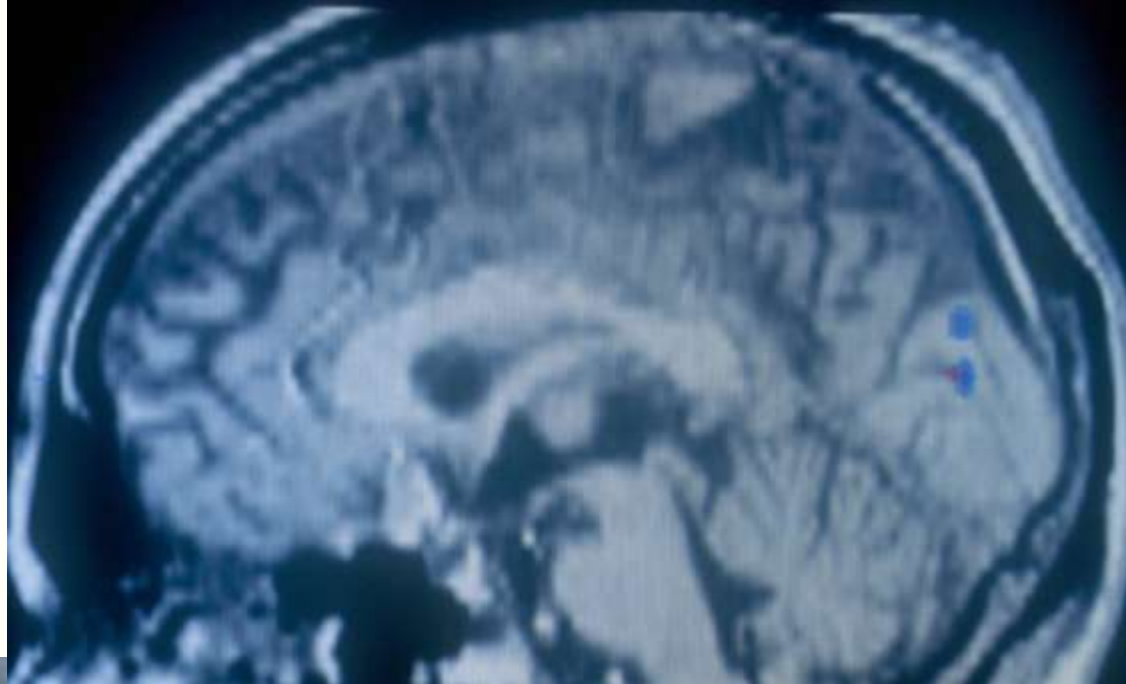
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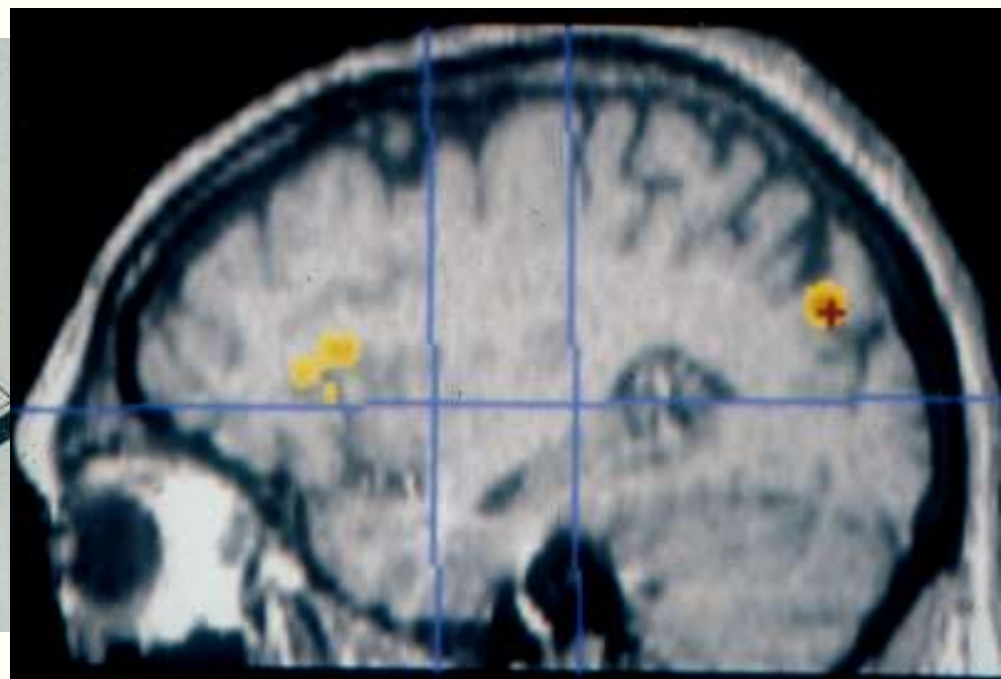
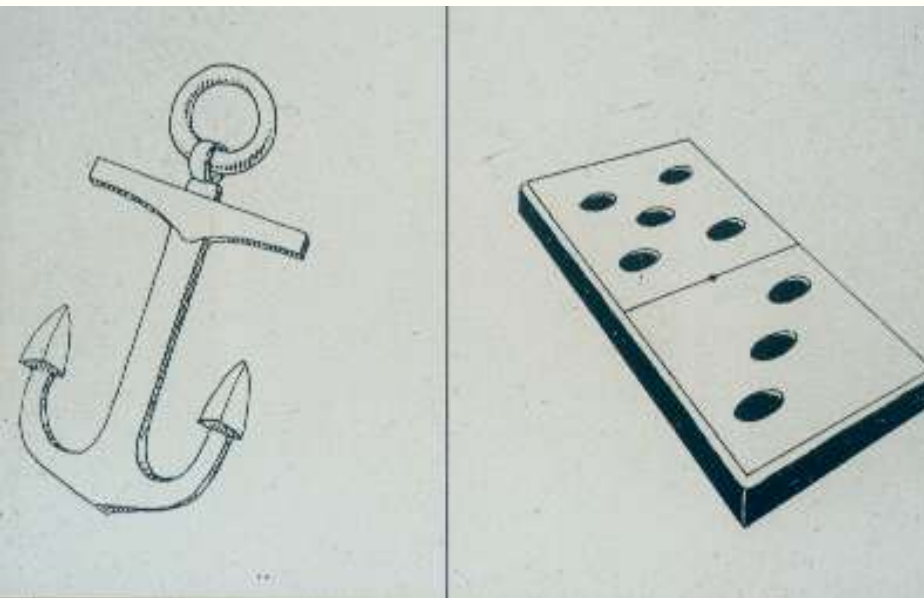
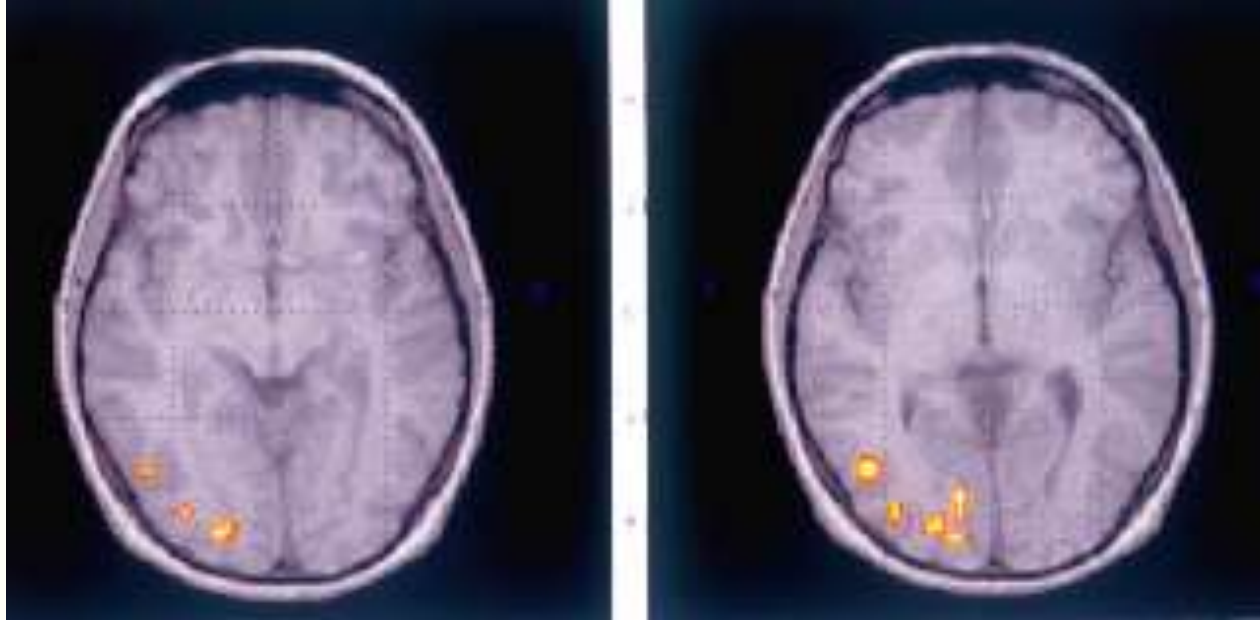
4,3 %

1.0/
256X256/1.00 NEX
11:21
1.0 mm/1.0sp
DFOV 12.1 cm
HEAD
TI:600
EC:1/1 15.5kHz

00 NEX
cm
3kHz

[illegible]

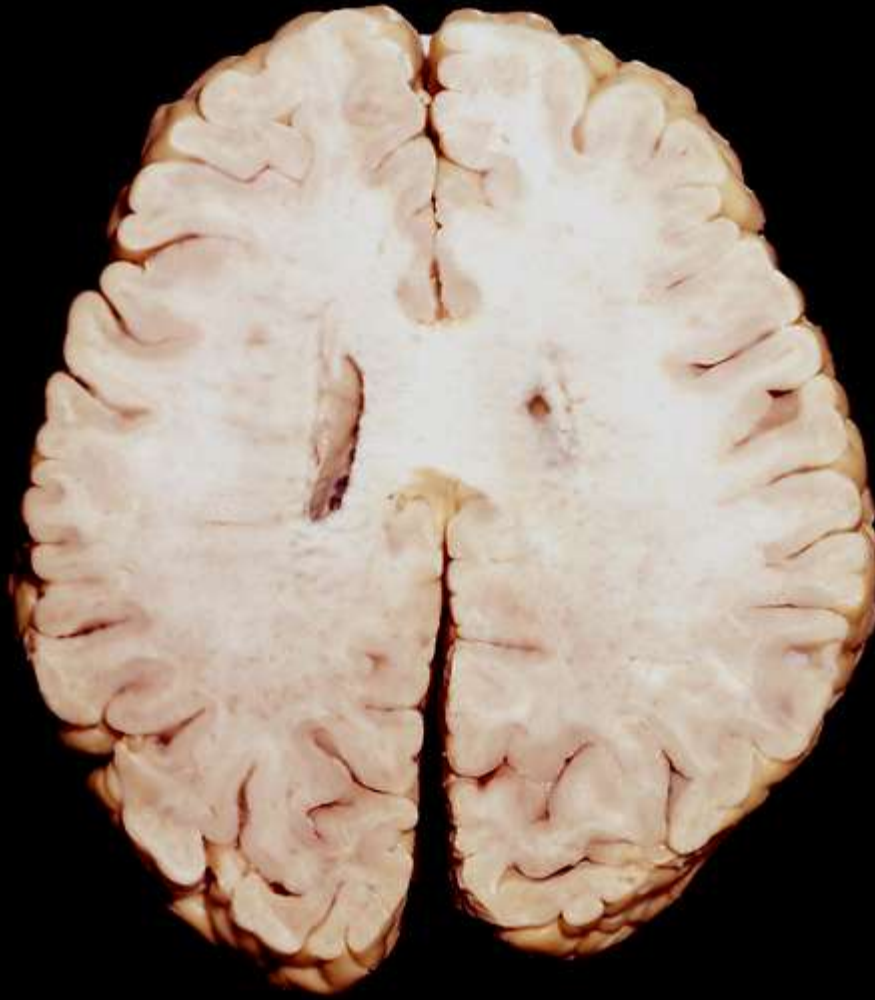




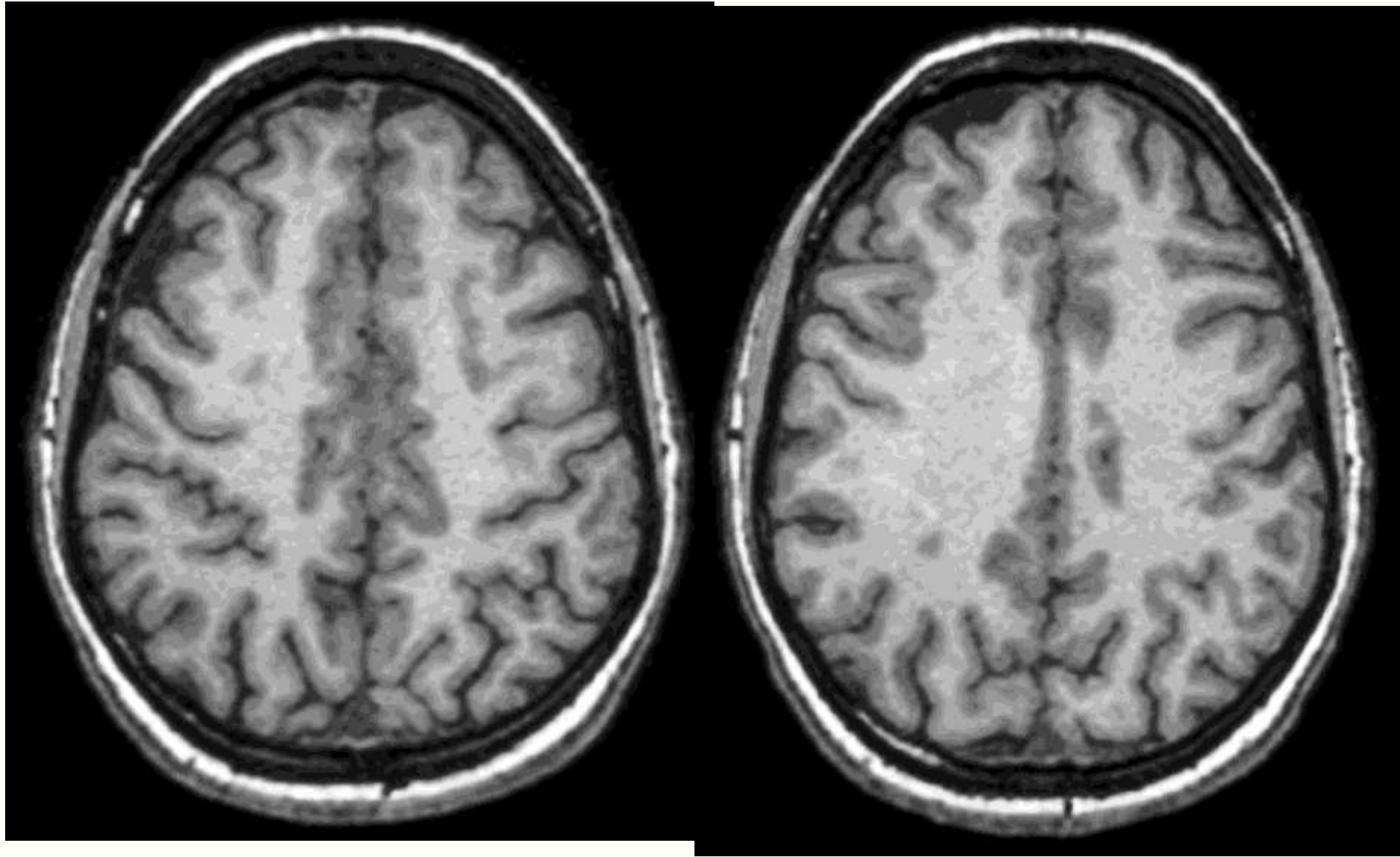
SILLON INTRA -OCCIPITAL

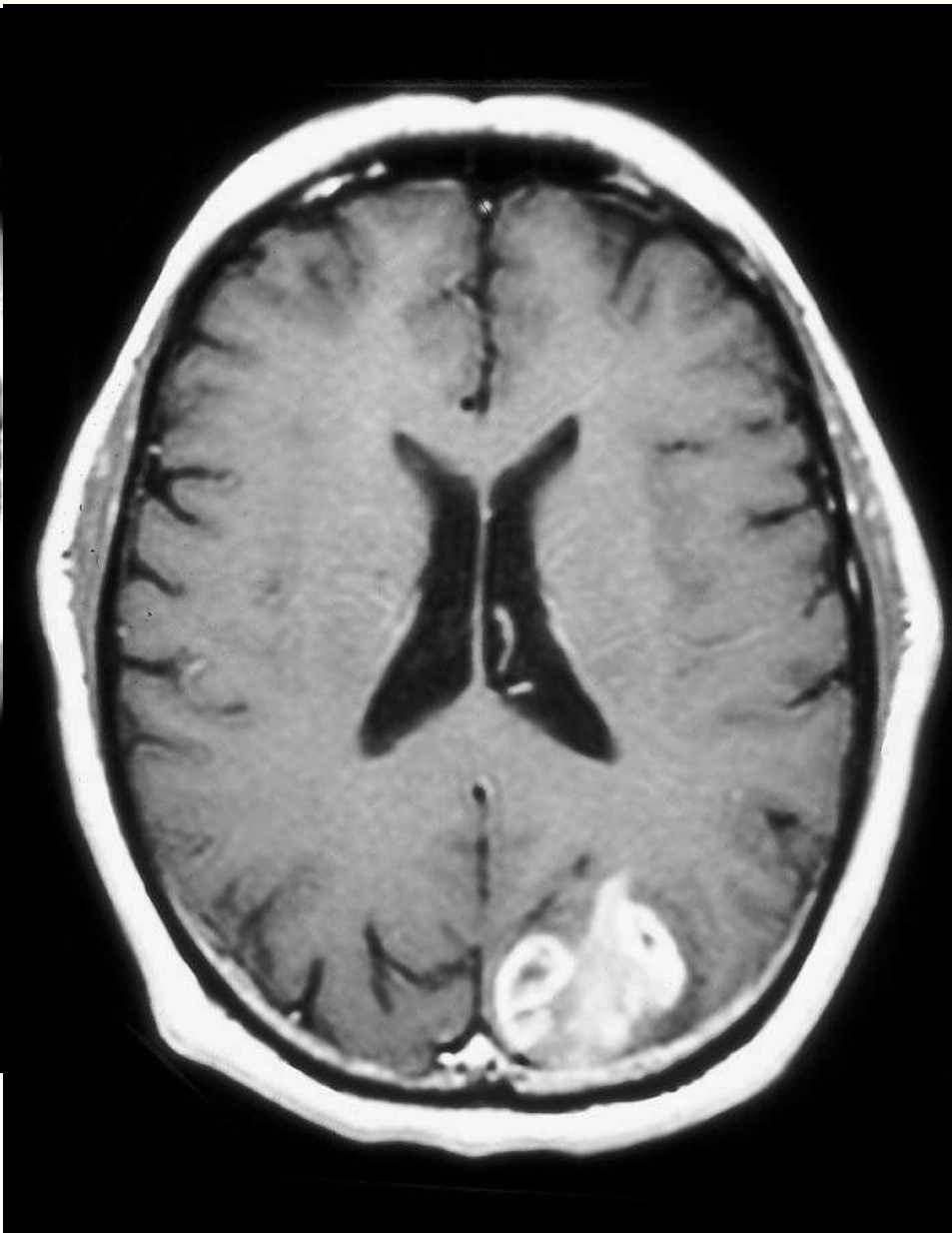


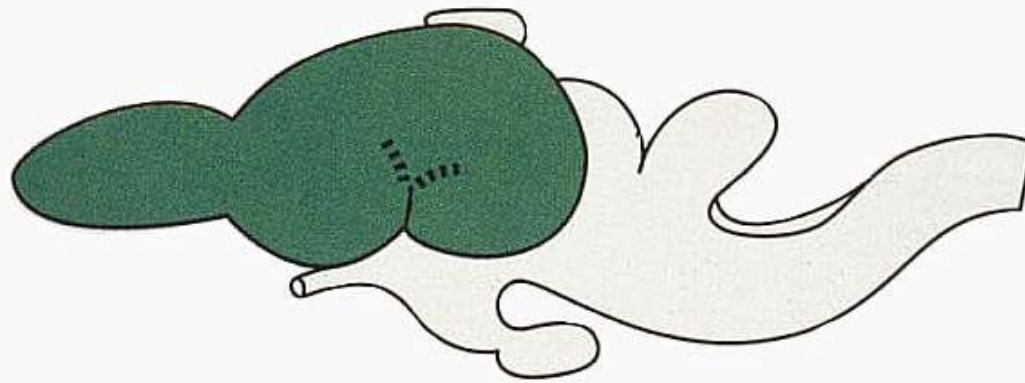
SIGNE DU “M CASSE” OCCIPITAL



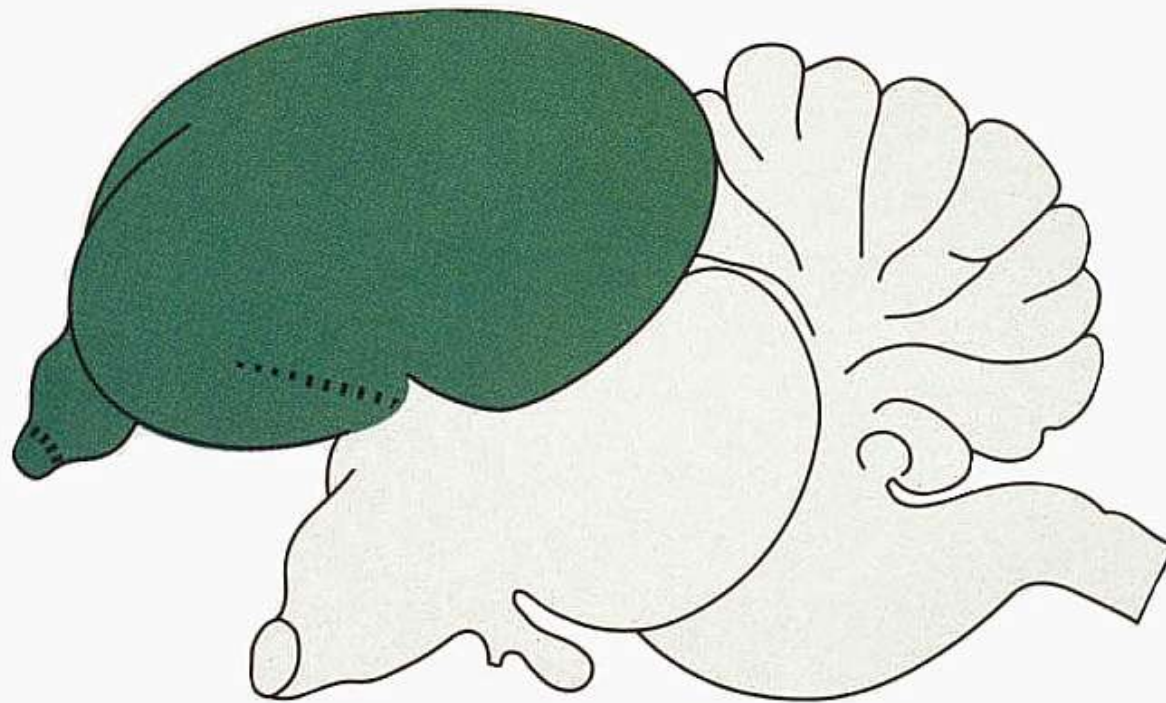
SIGNE DU “M CASSE” OCCIPITAL



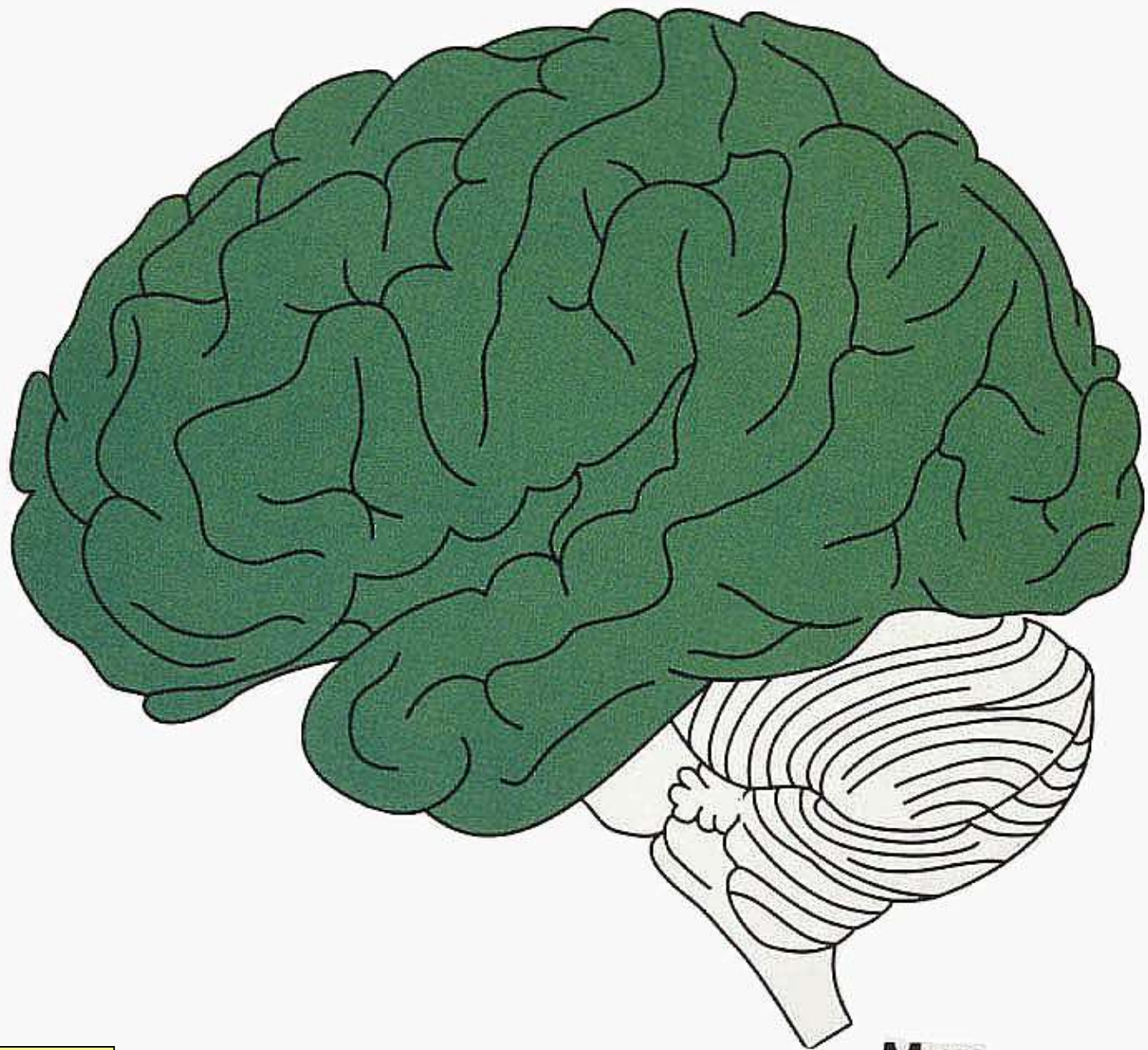


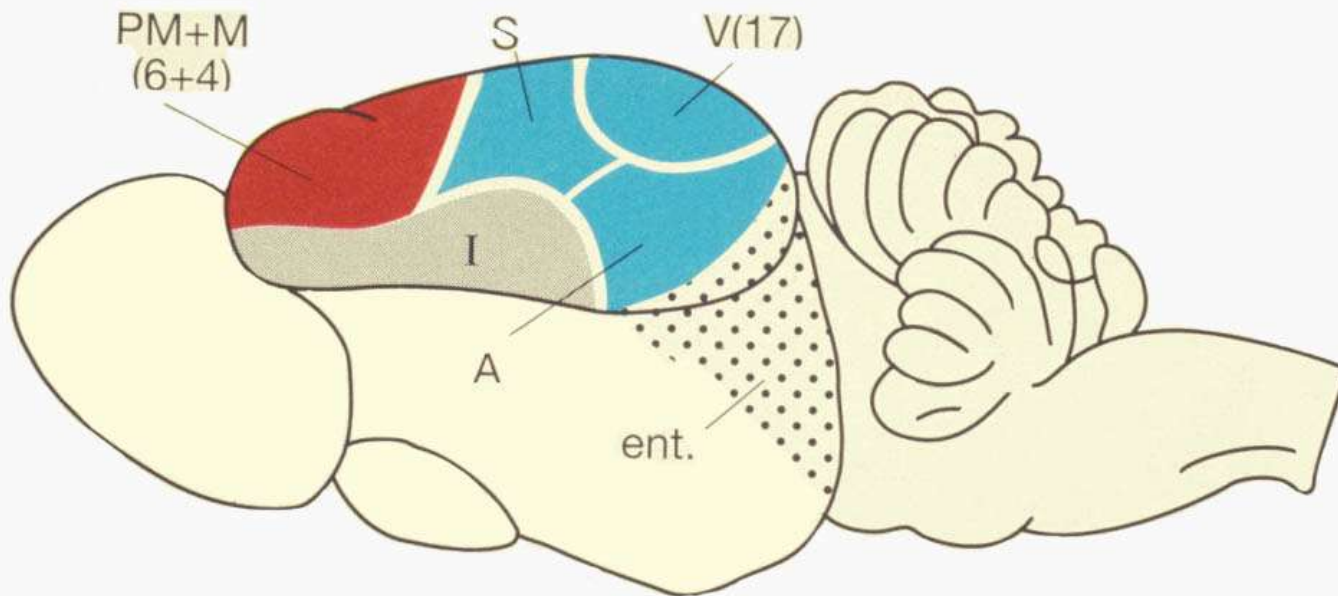
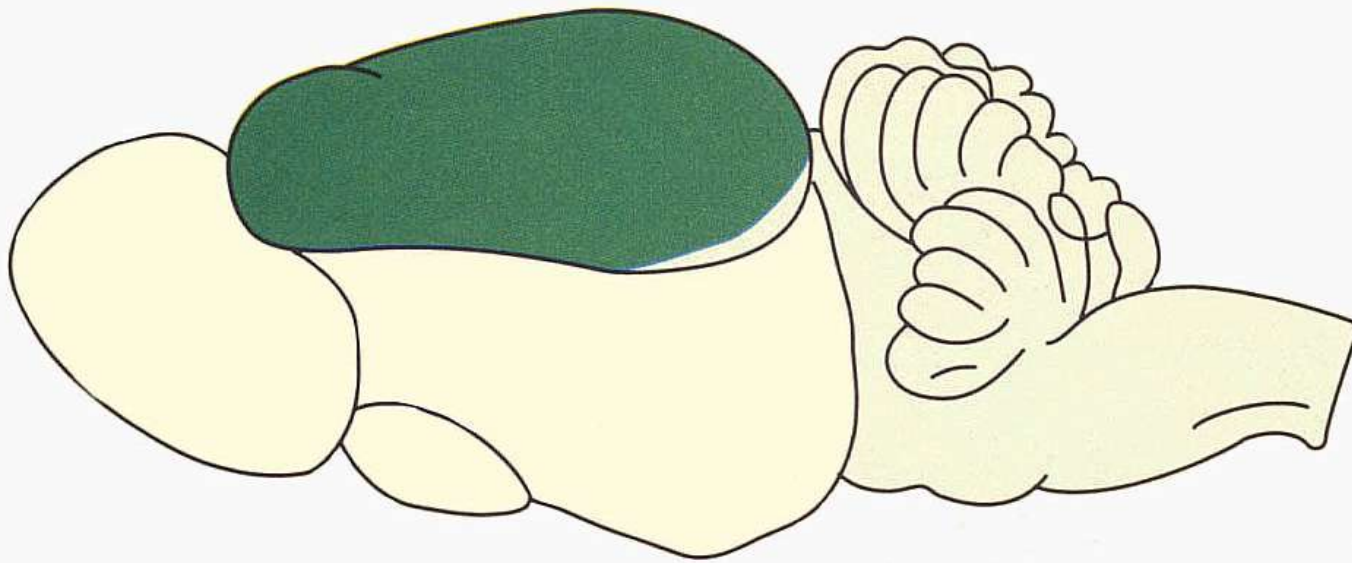


Turtle



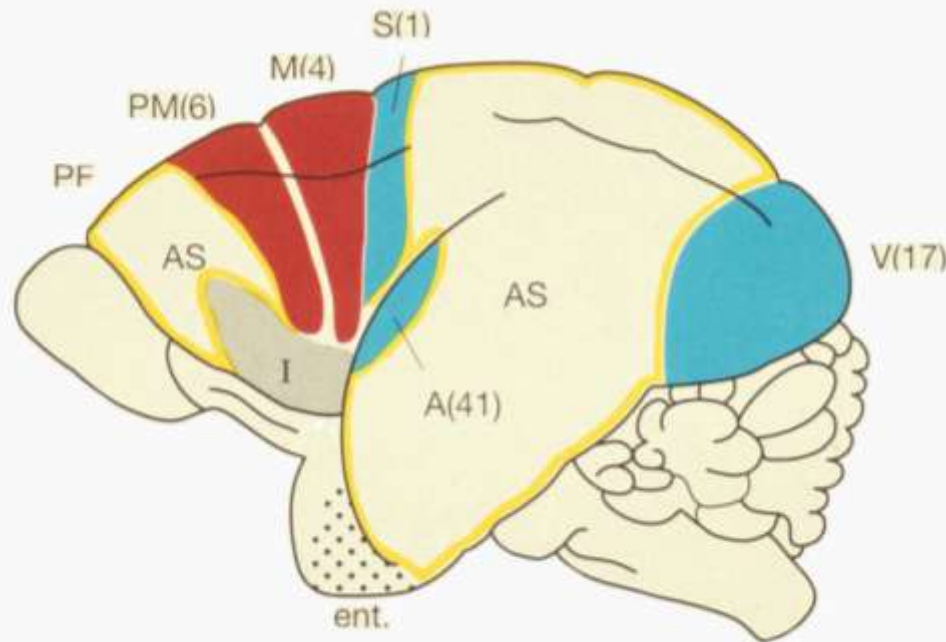
Pigeon



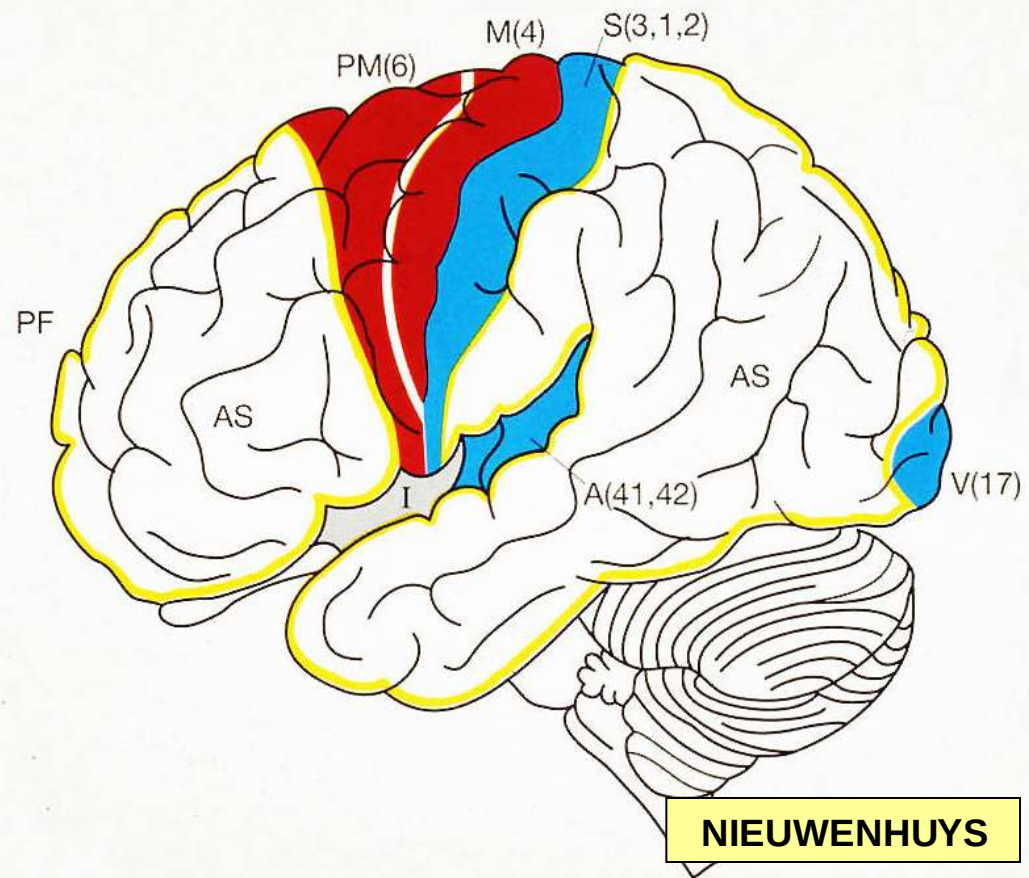


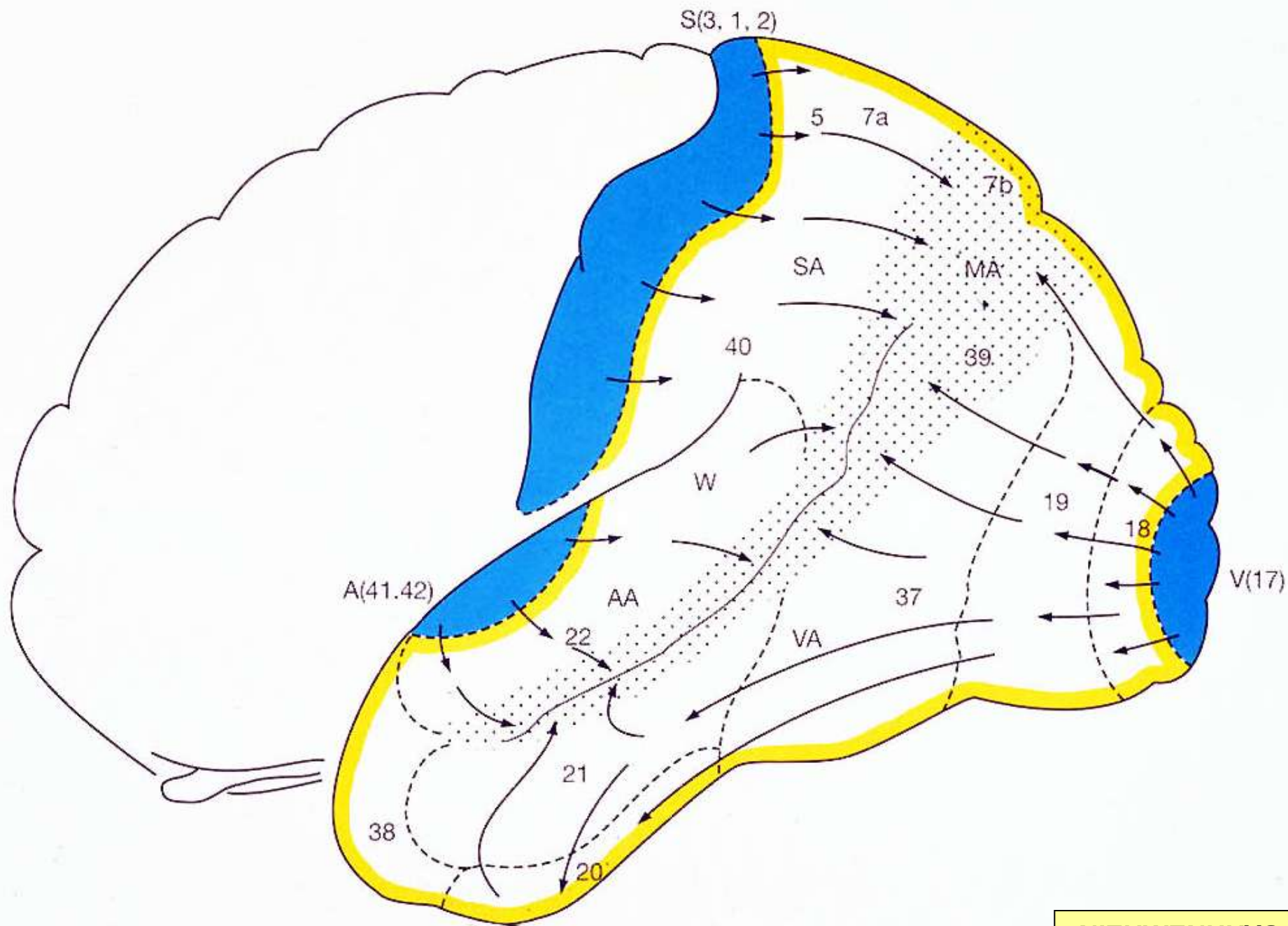


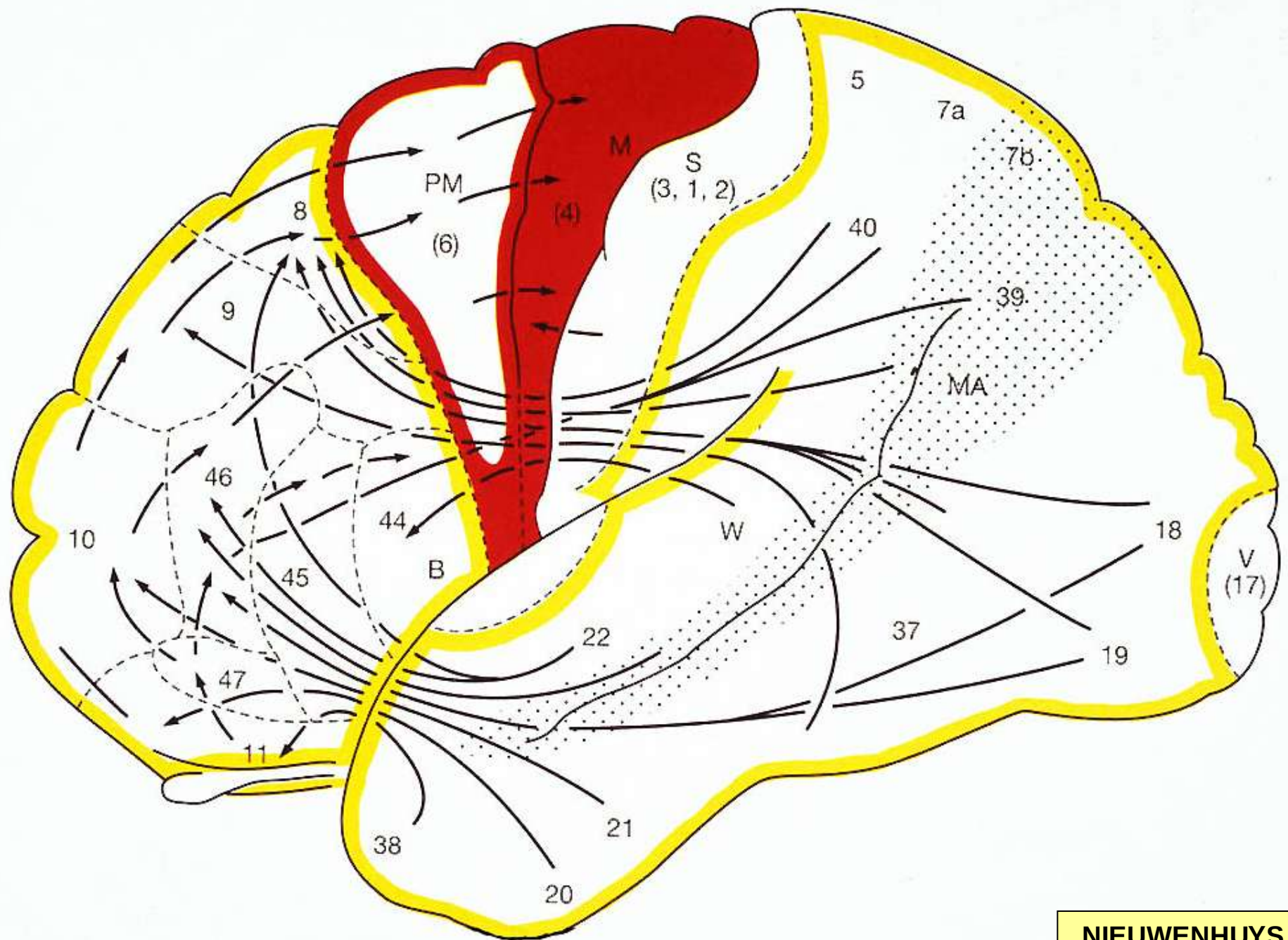
MACAQUE



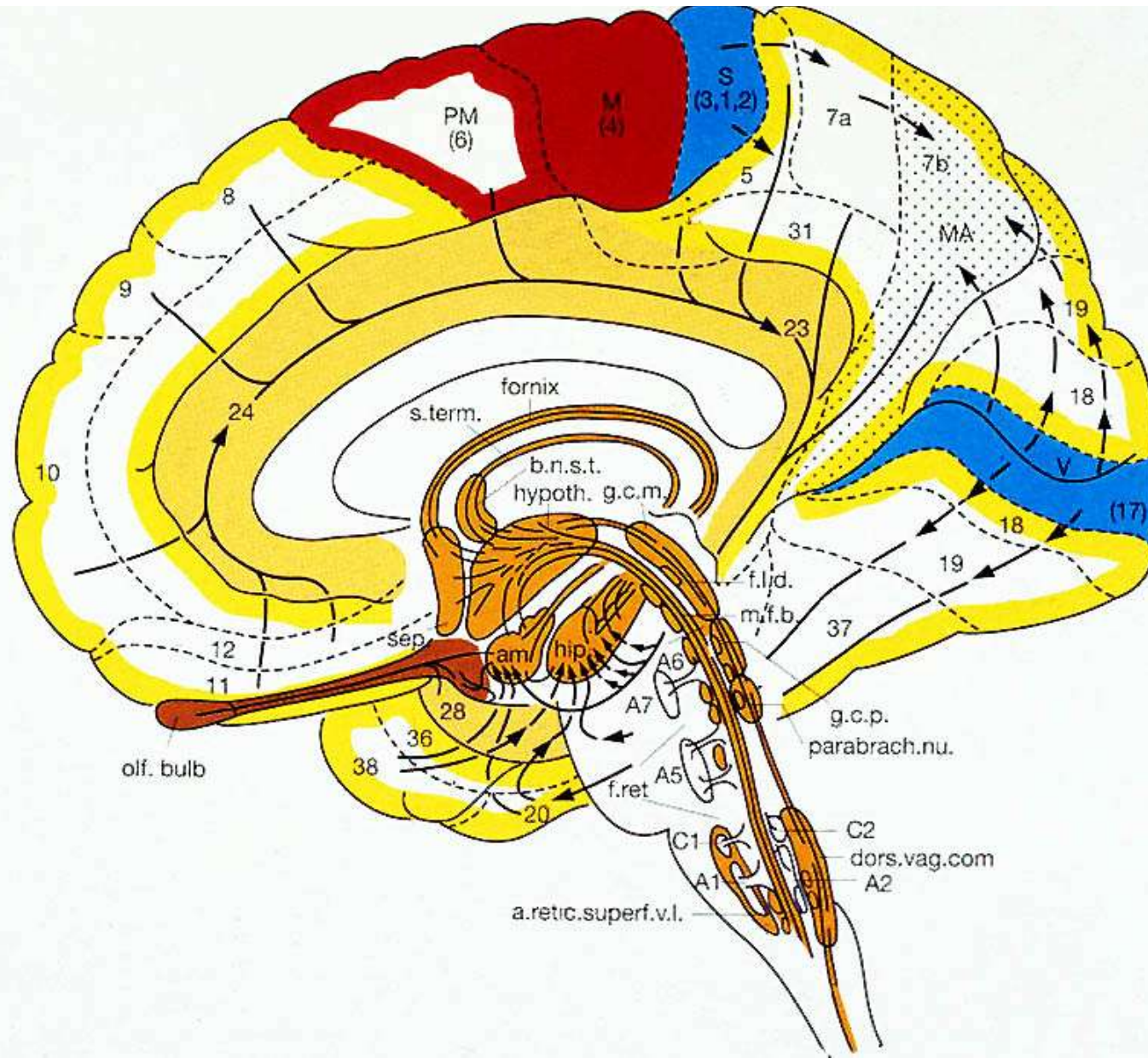
Galago (Prosimian)



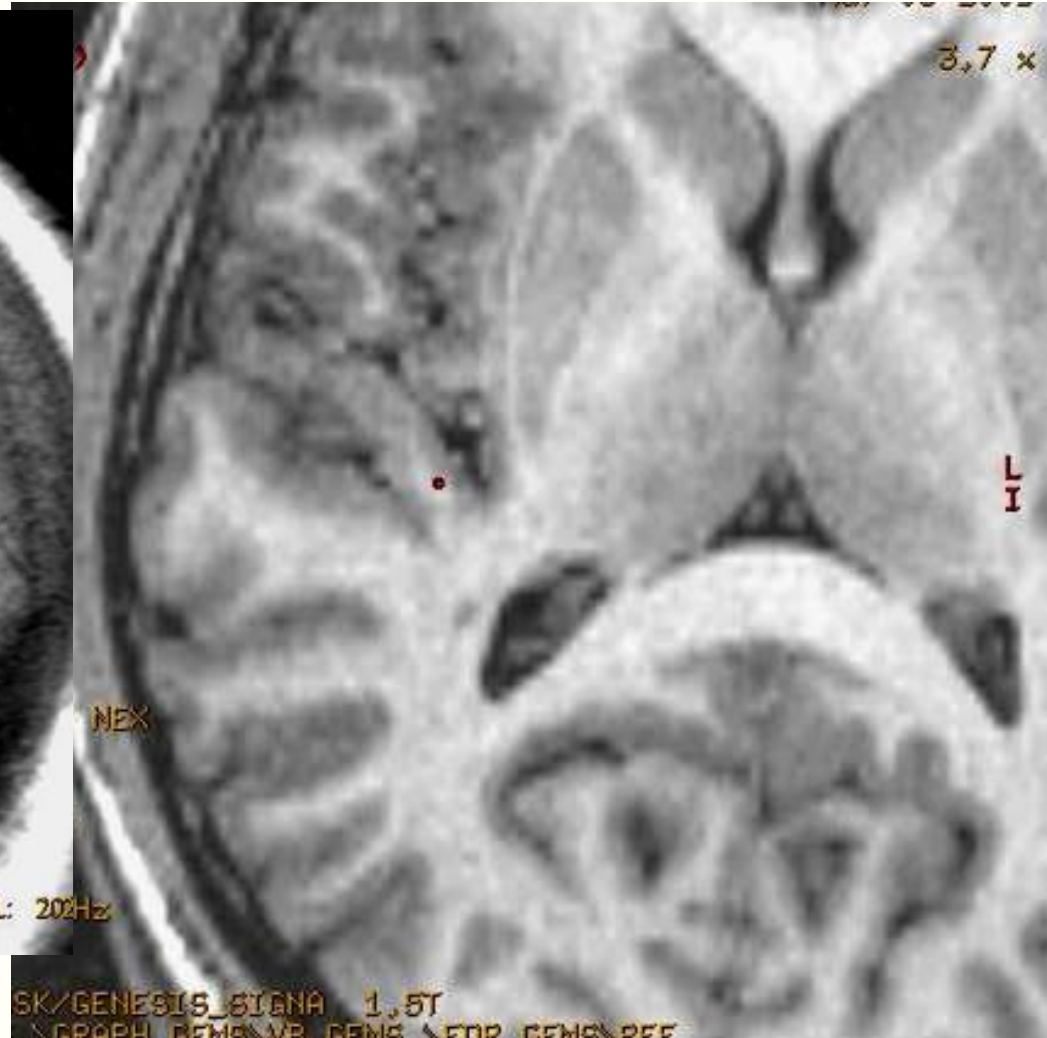




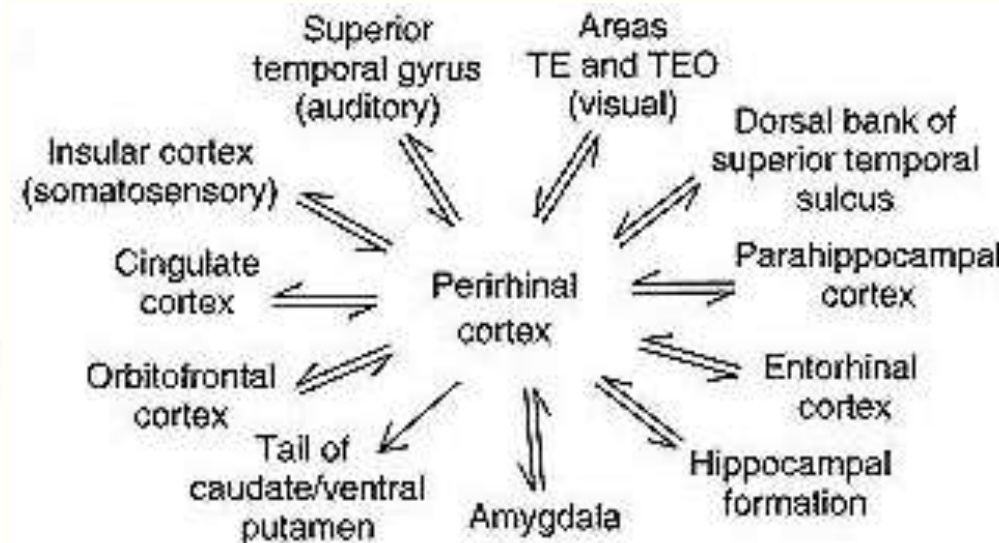
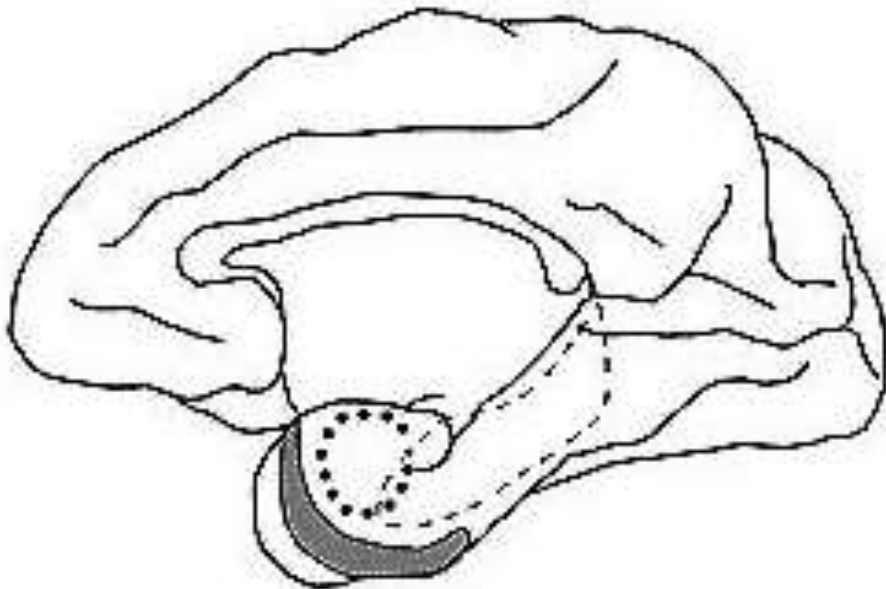
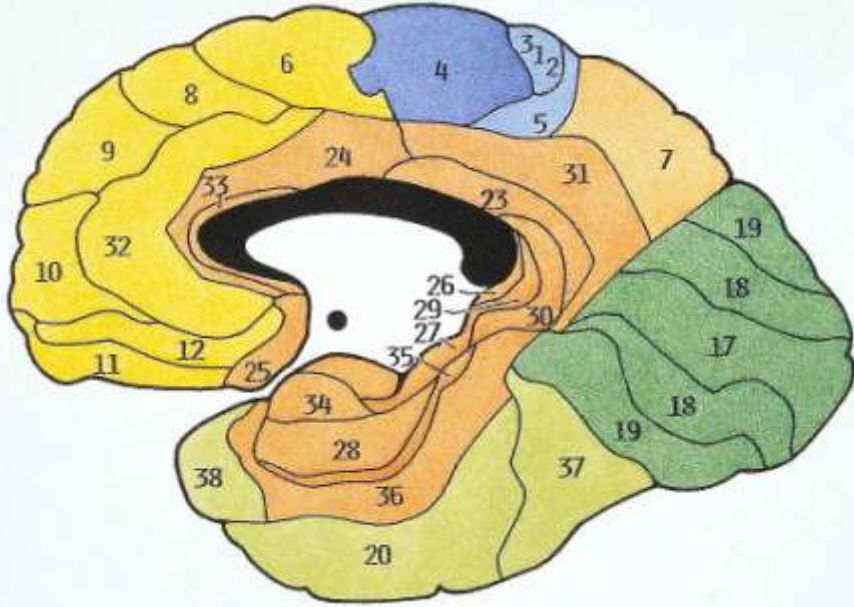
CORTEX ASSOCIATIF TEMPORO-PARIETAL



Cortex Carrefour



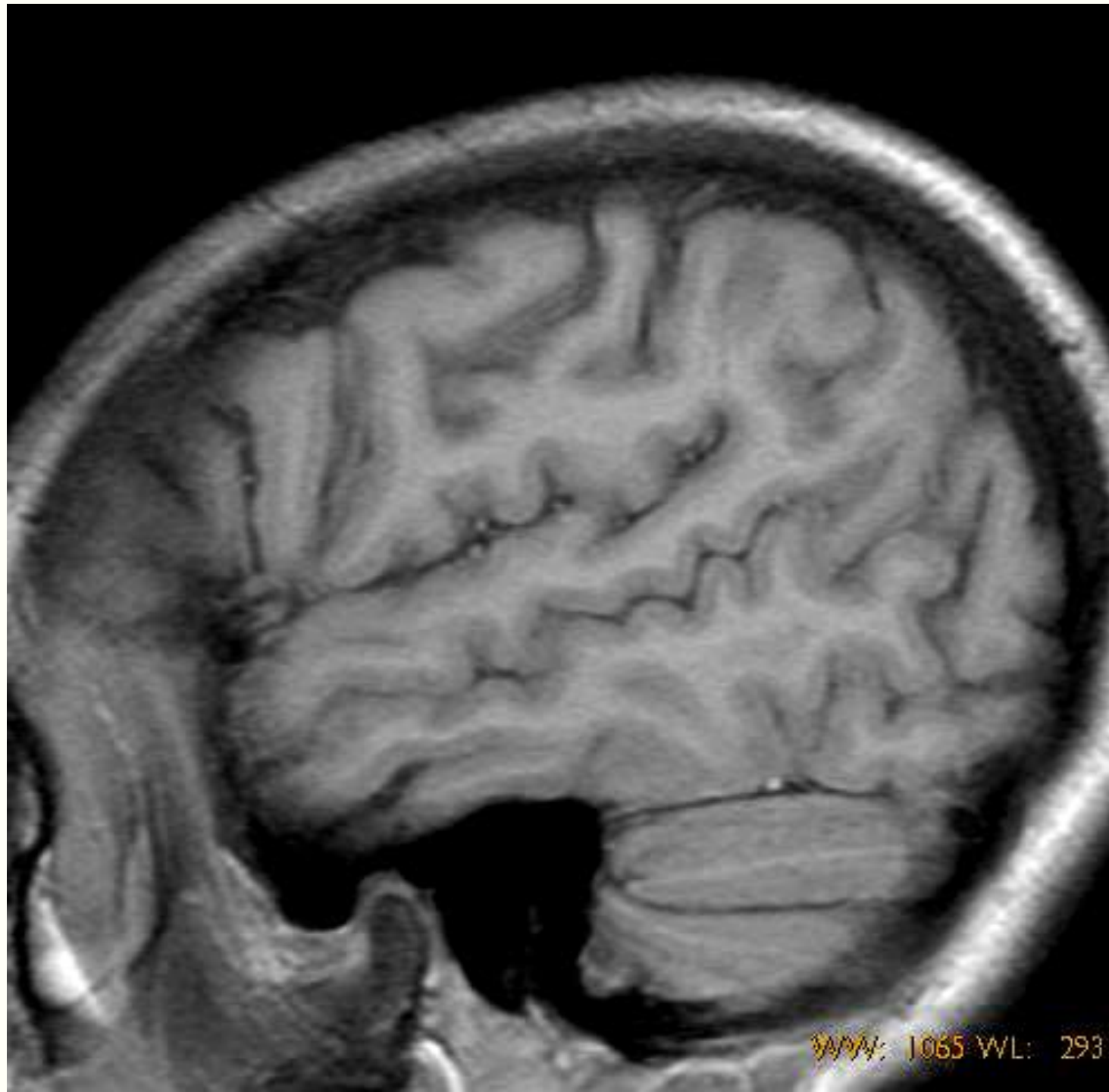
CORTEX PERIRHINAL (AB 36)



LOBE TEMPORAL

**MORPHOLOGIE ET
STRUCTURES ASSOCIEES**

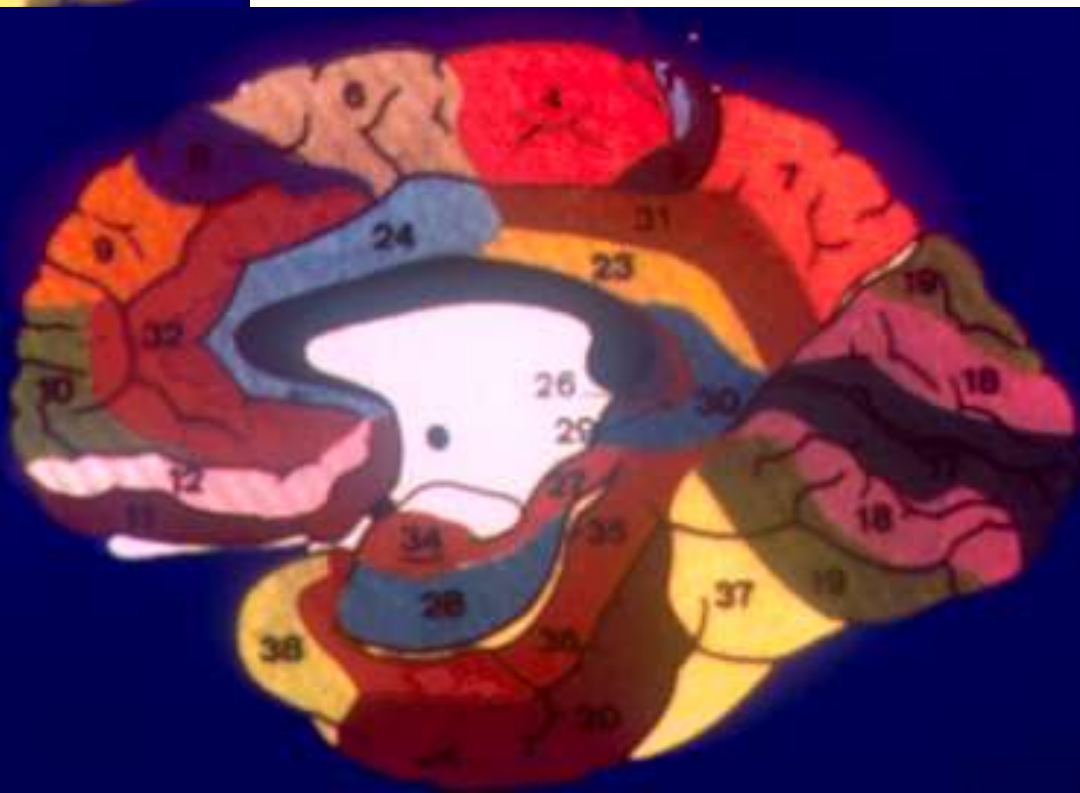
CORTEX SUPERIEUR

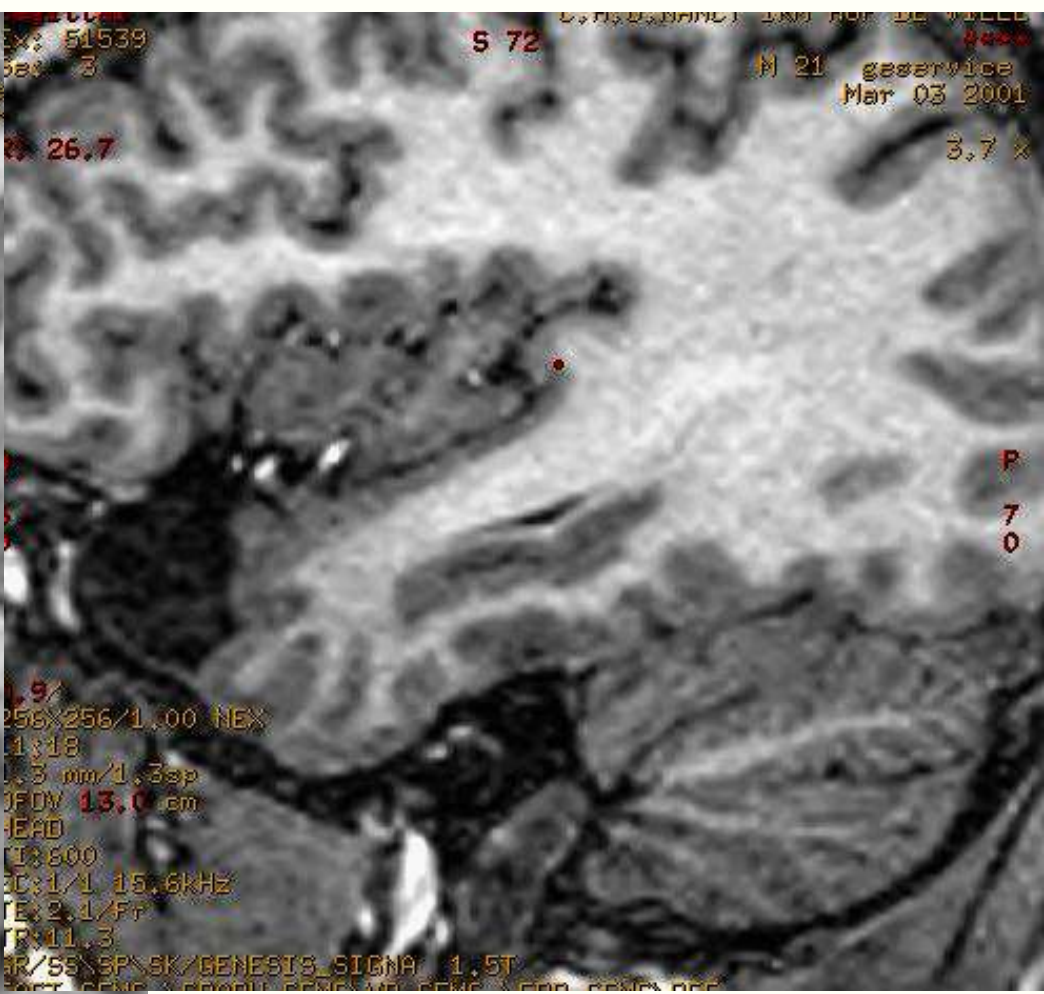


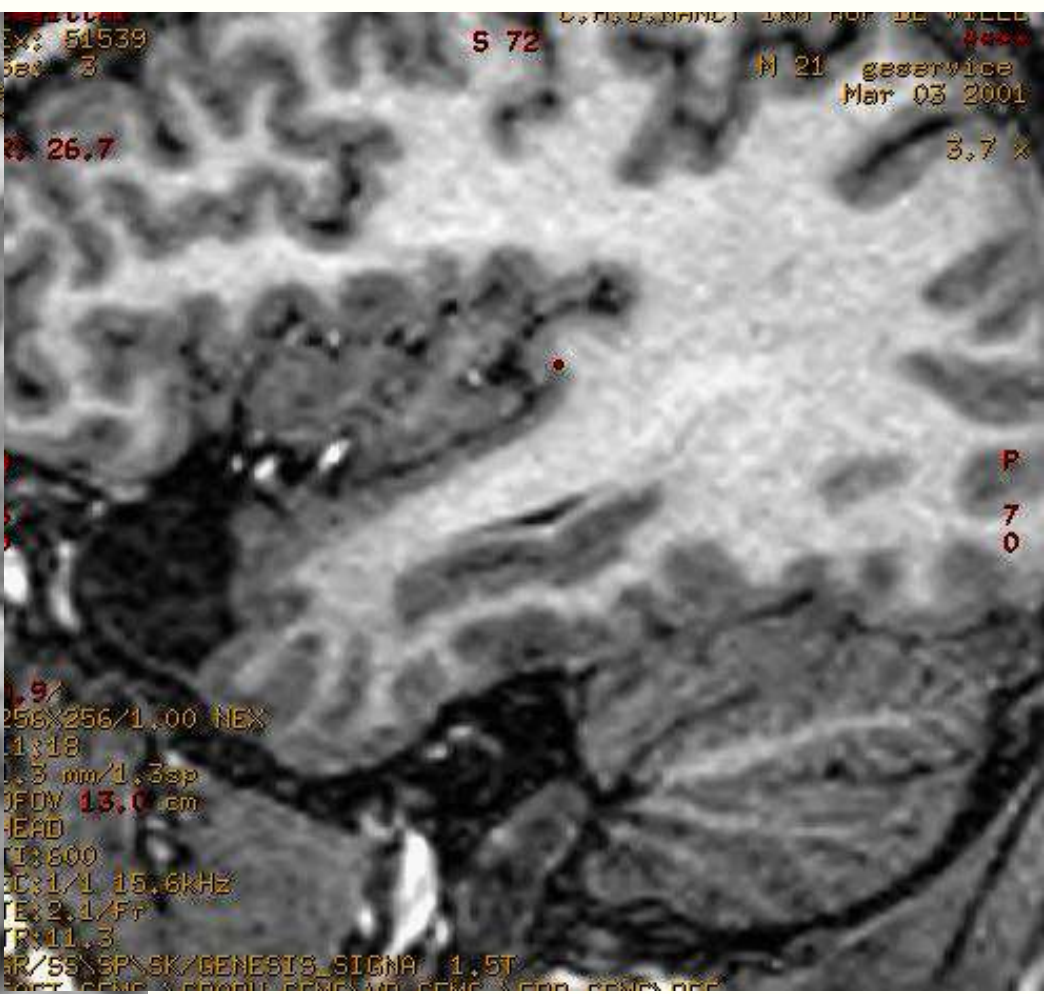
WPM: 1065 WVL: 293

GYRUS DE HESCHL

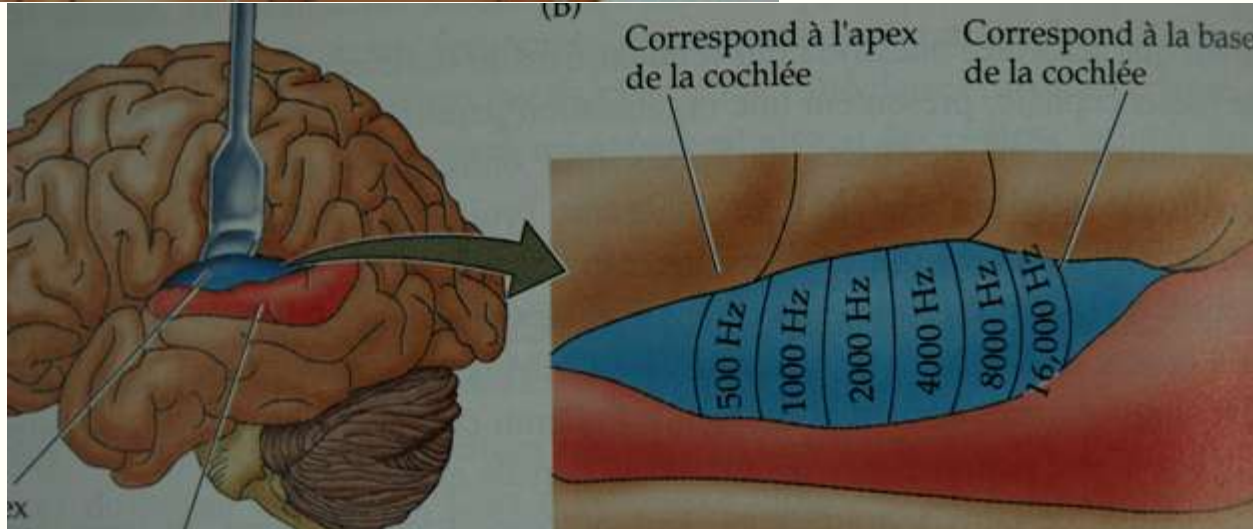
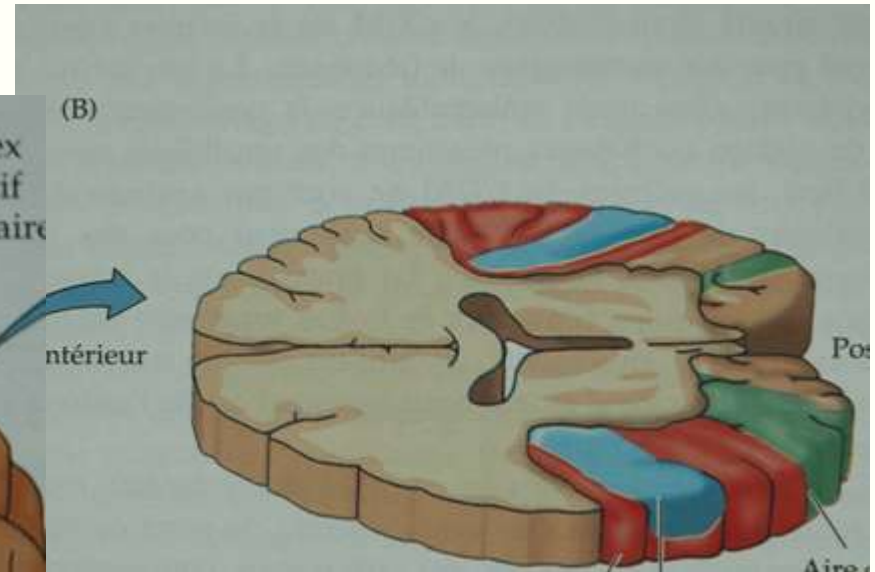
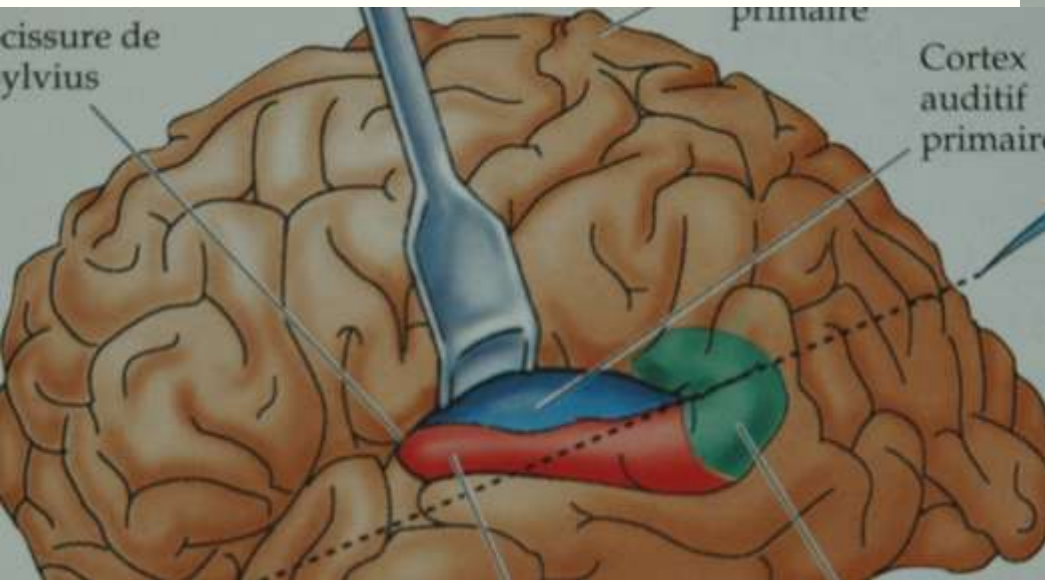
- **AIRE TEMPORALE DE L'AUDITION A1 :
AB 41- 42**
- **SITE : FACE SUPERIEURE TEMPORALE**
- **TONOTOPIE**

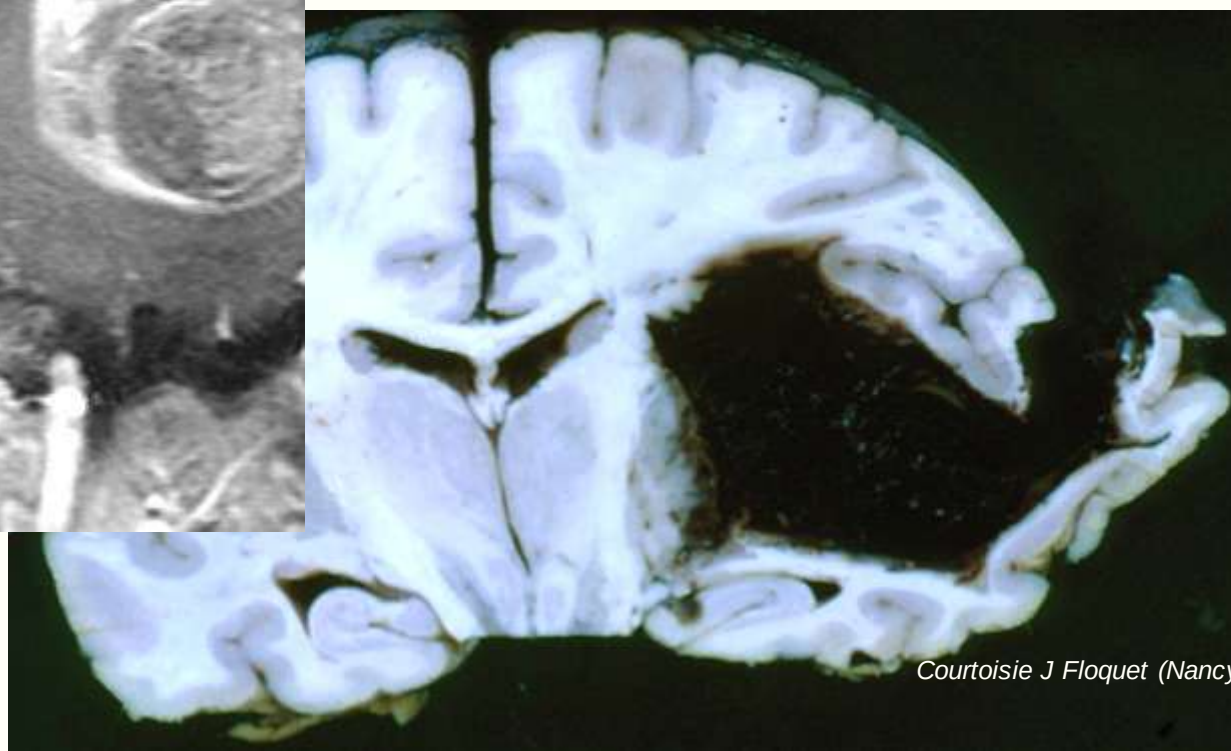
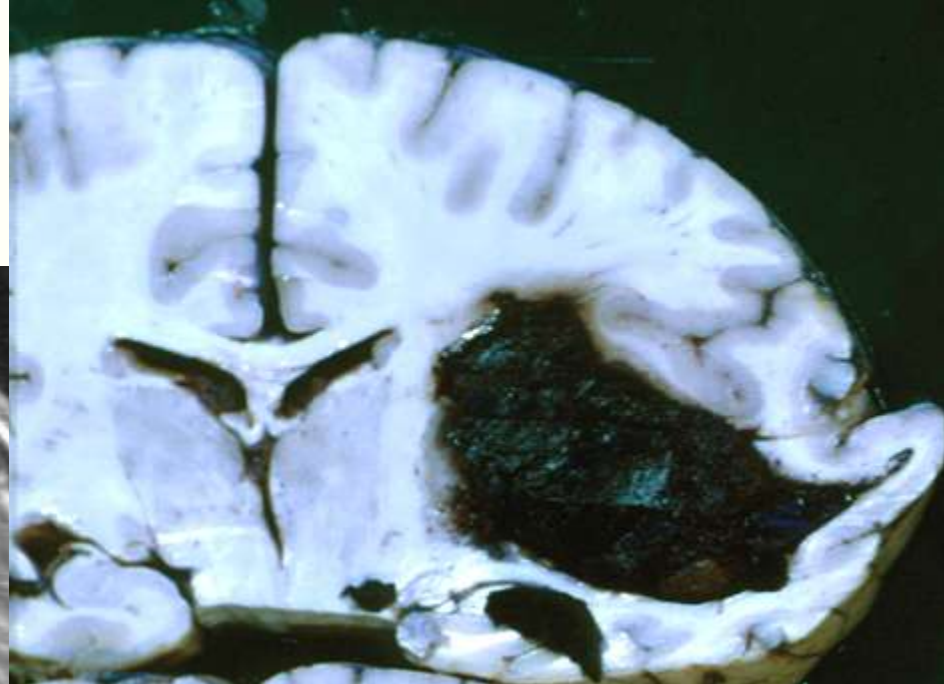
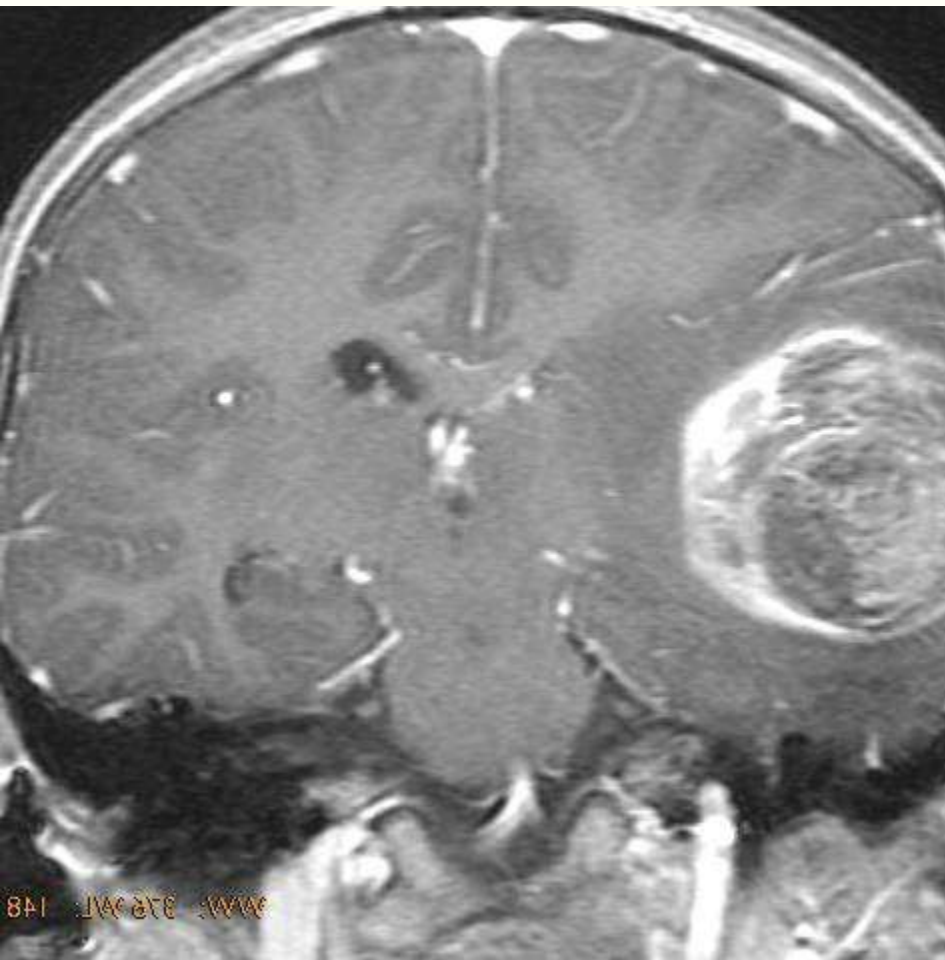




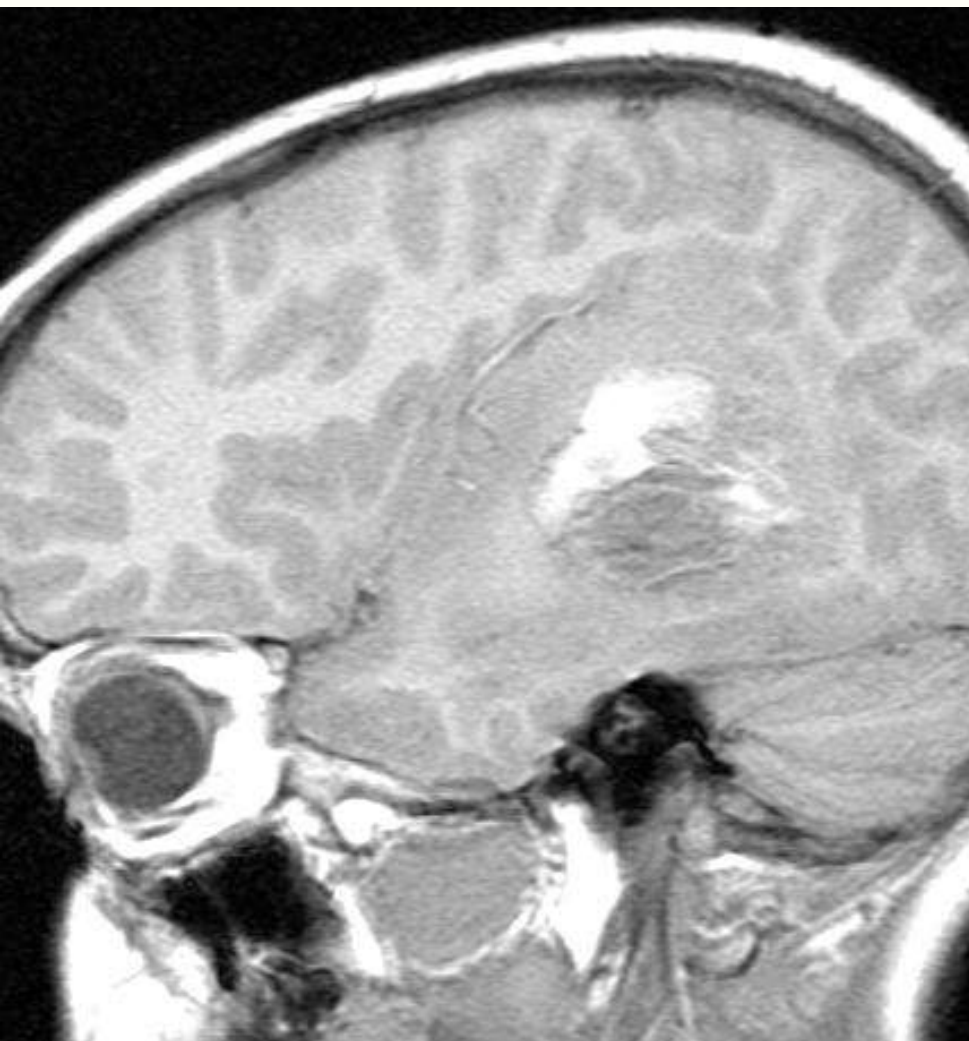


CORTEX AUDITIF

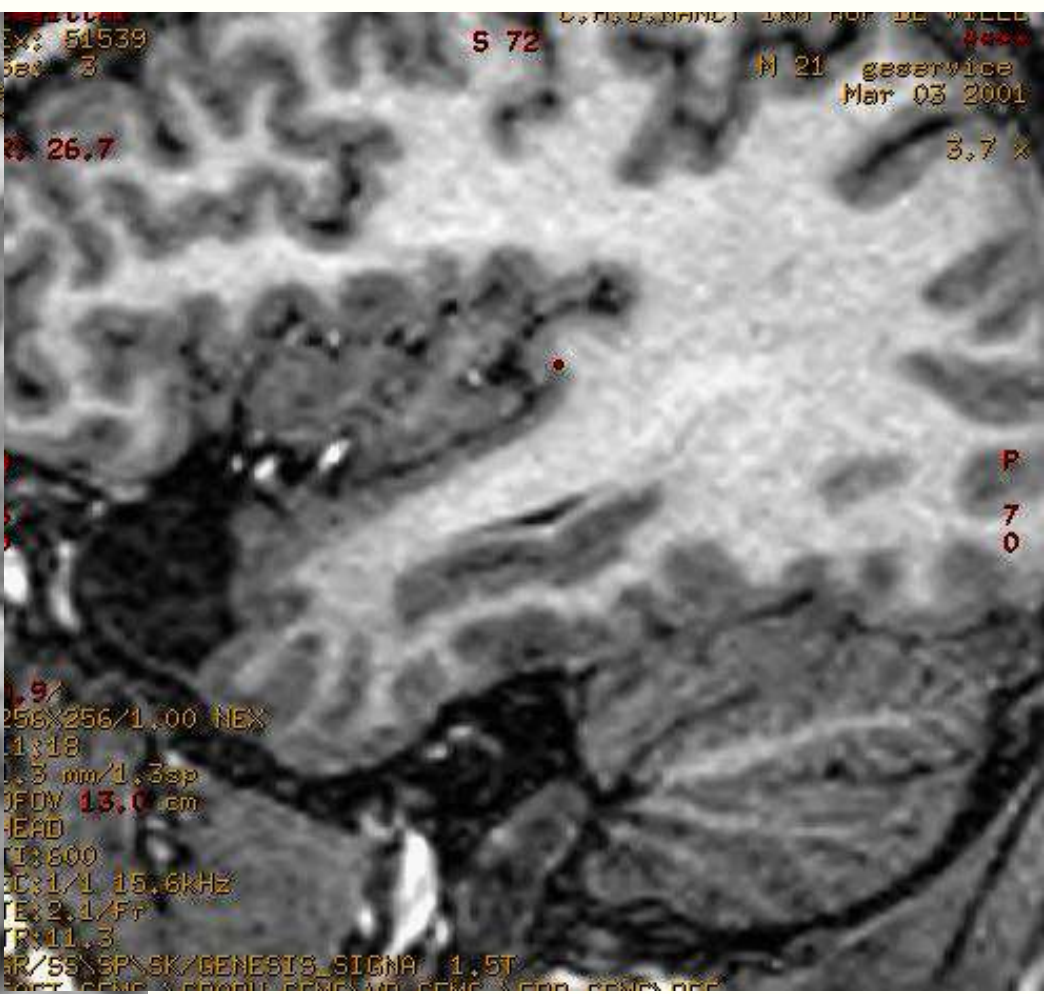




Courtoisie J Floquet (Nancy)



Courtoisie J Floquet (Nancy)

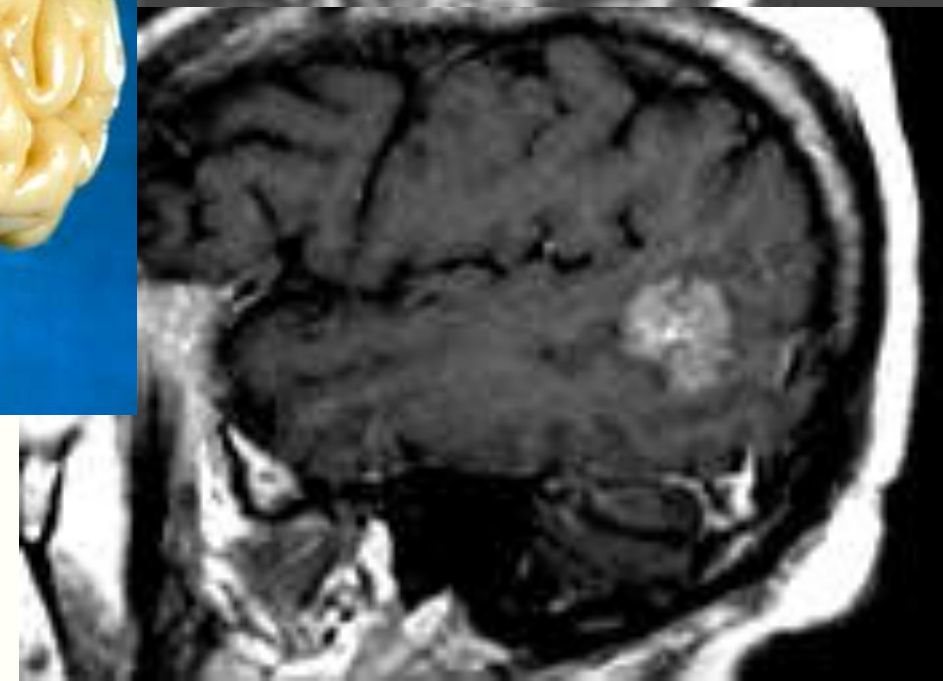
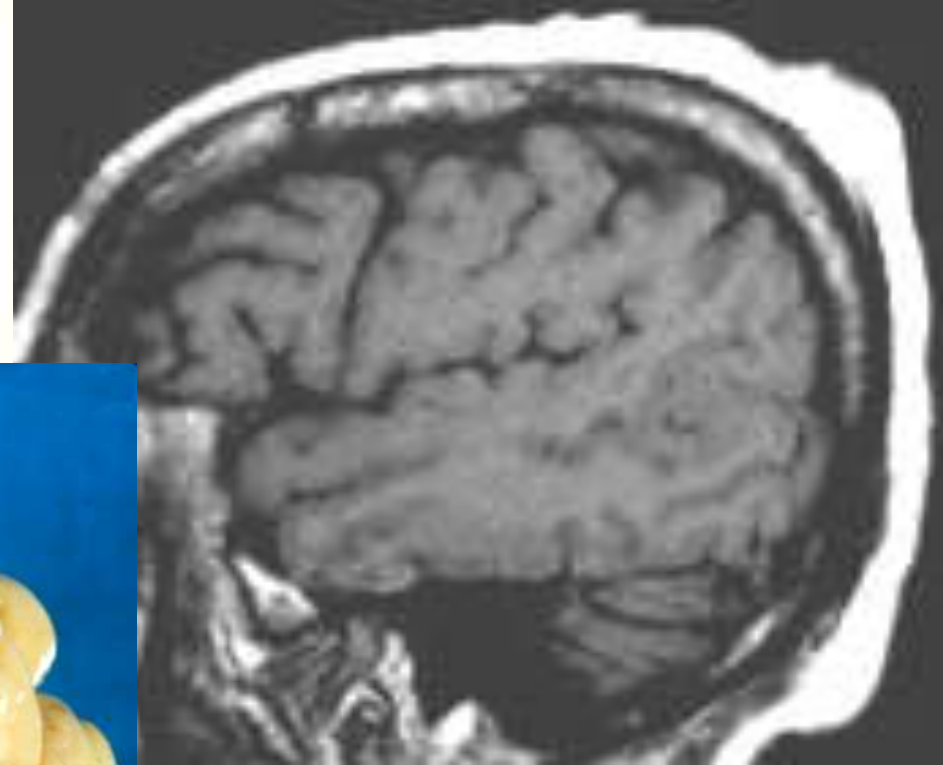


CORTEX LATERAL

LOBE TEMPORAL : SURFACE CONVEXITE LATERALE



S. TEMPORAL SUP. & GY. TEMP. MOYEN



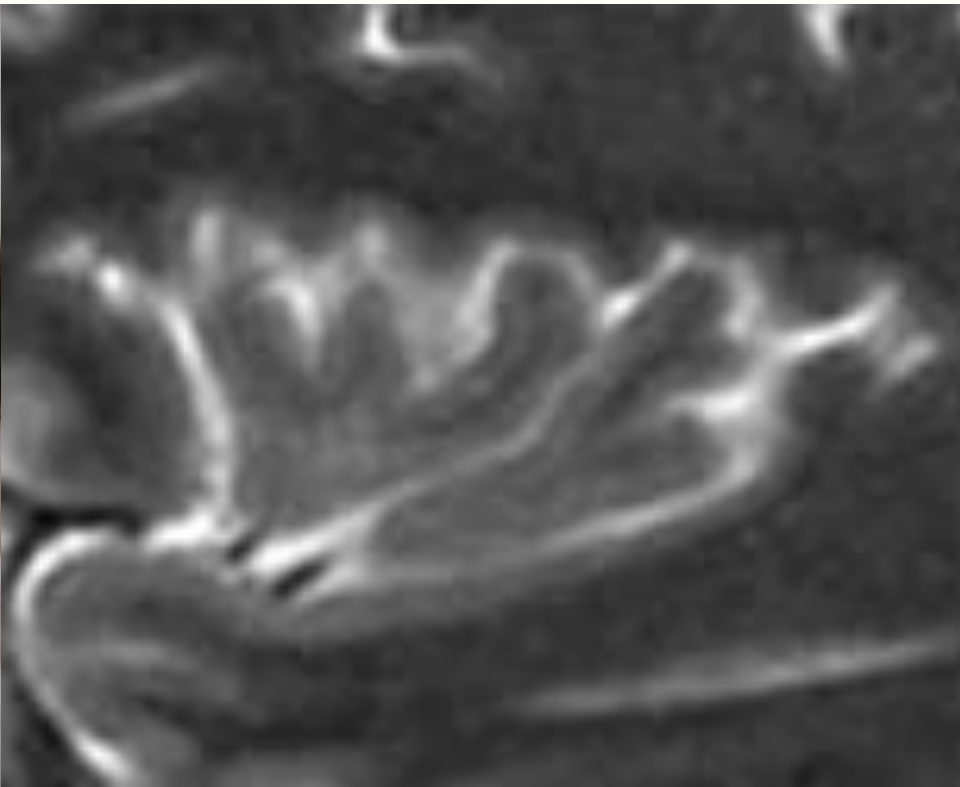
SURFACE CONVEXE INFERIEURE du LOBE TEMPORAL



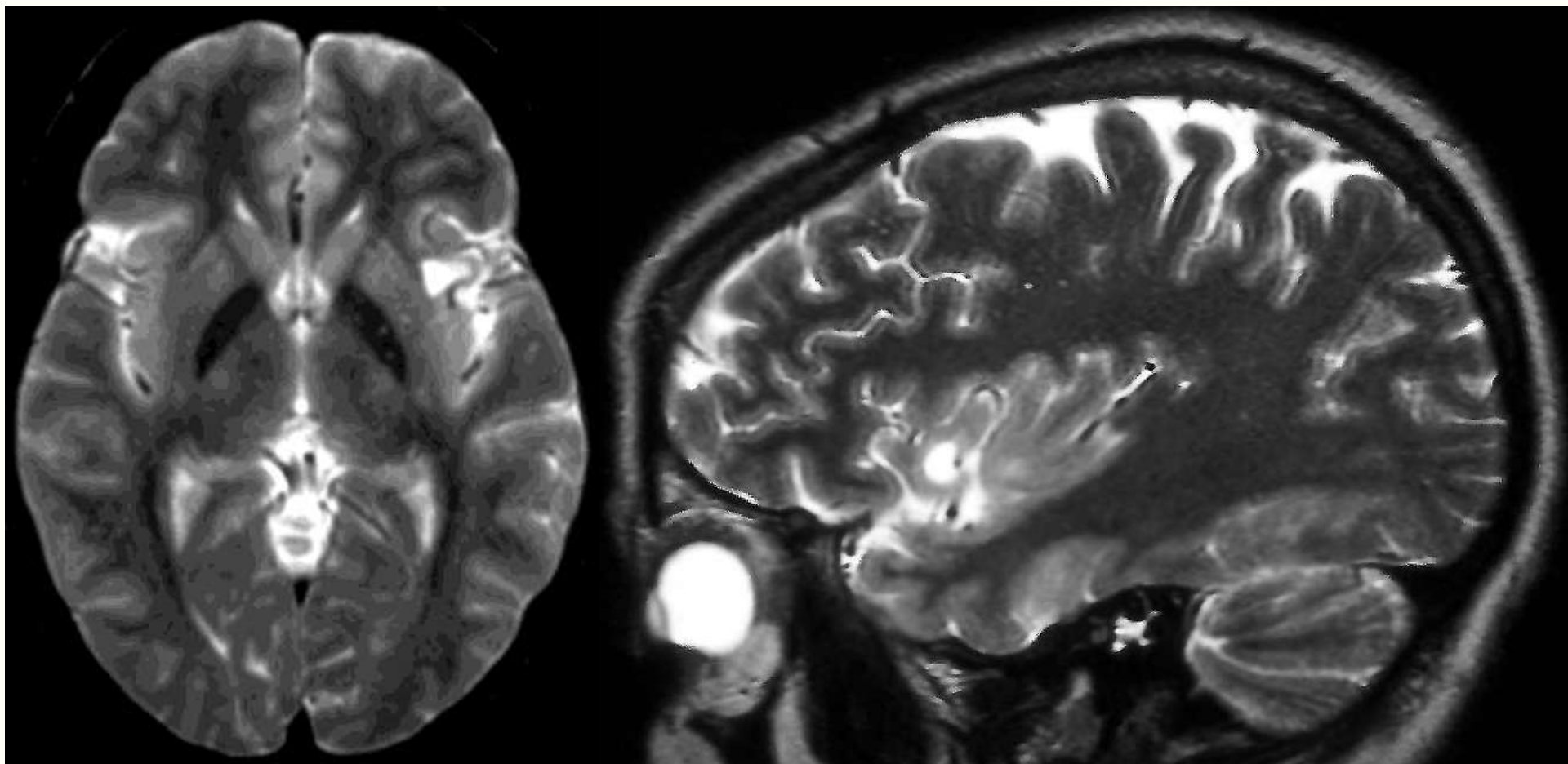
INSULA : LOBULES ANTERIEUR & POSTERIEUR



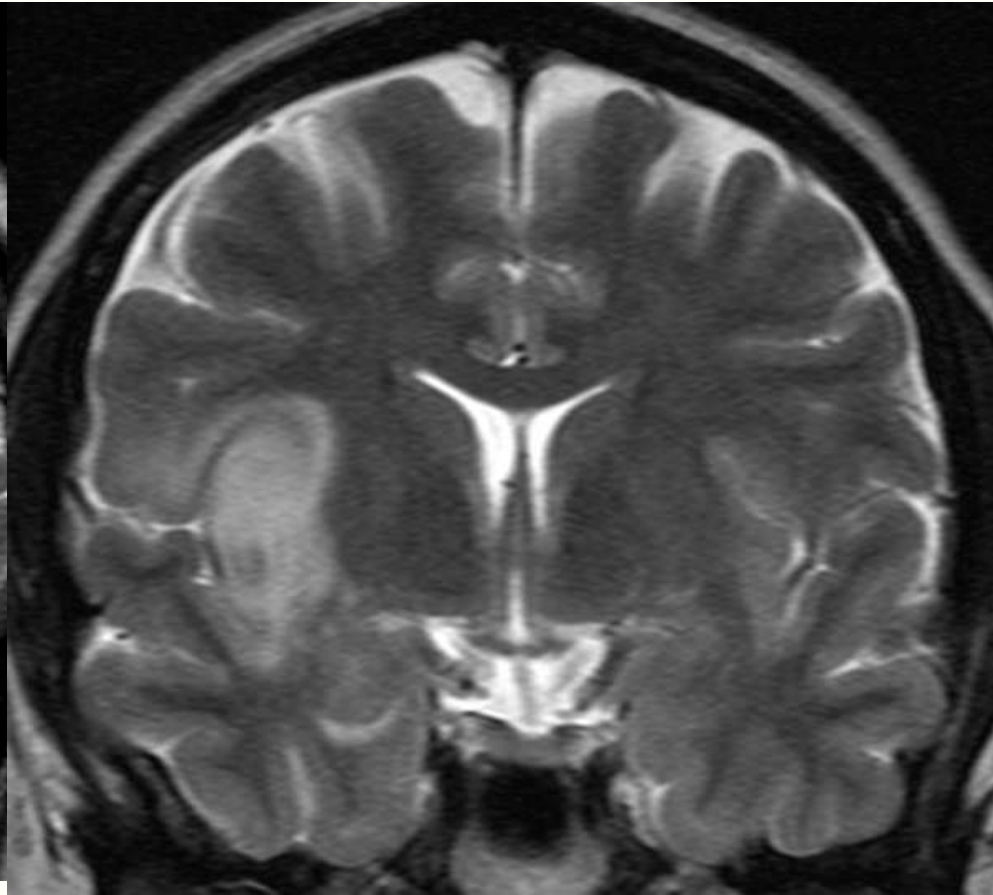
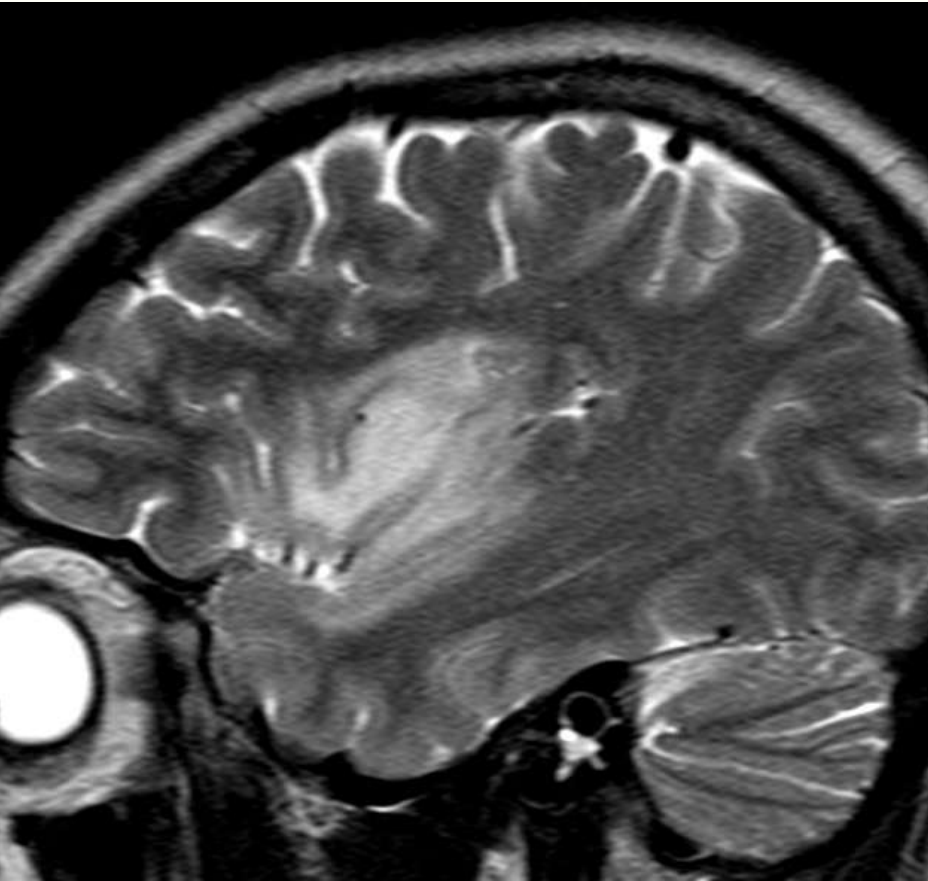
INSULA : LOBULES ANTERIEUR & POSTERIEUR



BROCA EST-IL DANS L'INSULA ANTERIEUR ?



GLIOME INSULA: ANT. & POST.



ORSURFACE ORBITAIRE DU LOBE FRONTAL



RAPPORTS AVEC L'INSULA

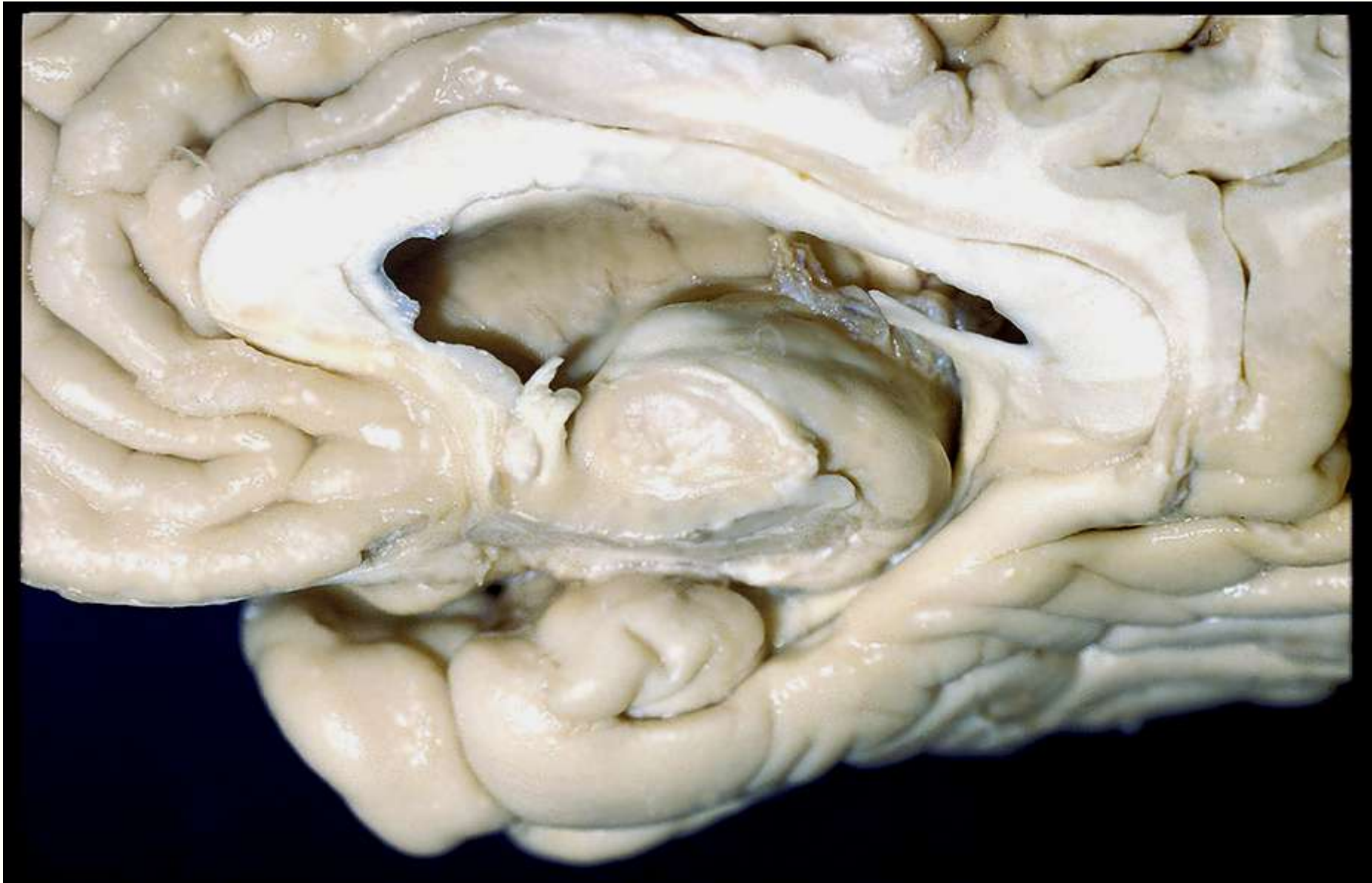


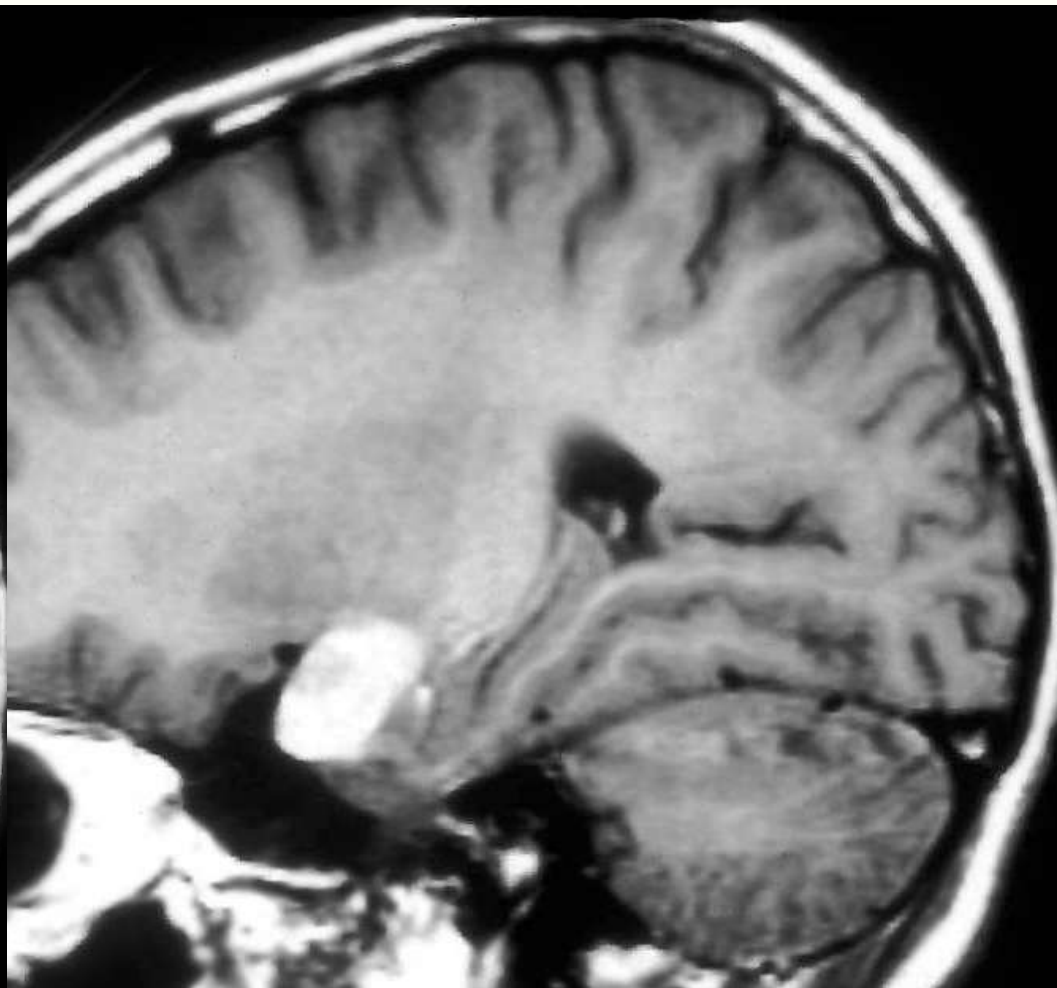
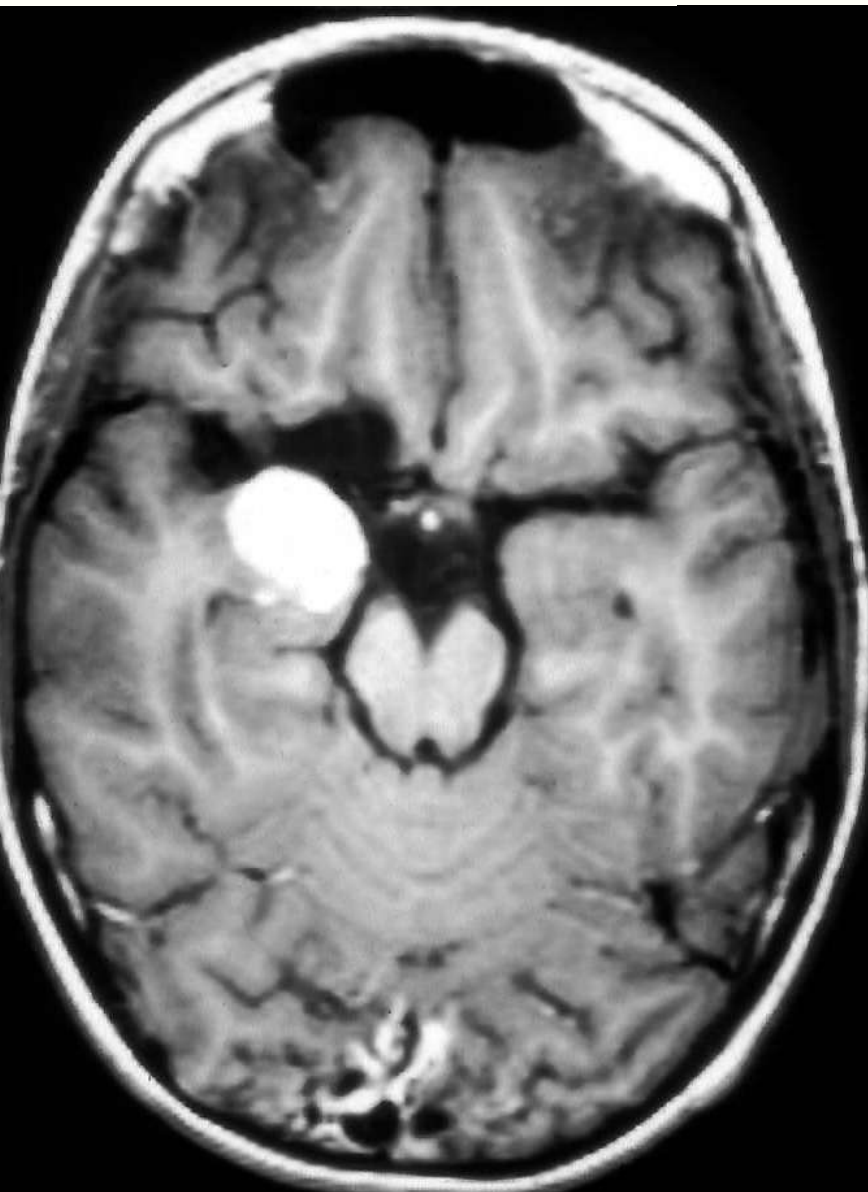


SURFACE MEDIALE du LOBE TEMPORAL



SURFACE MEDIALE du LOBE TEMPORAL



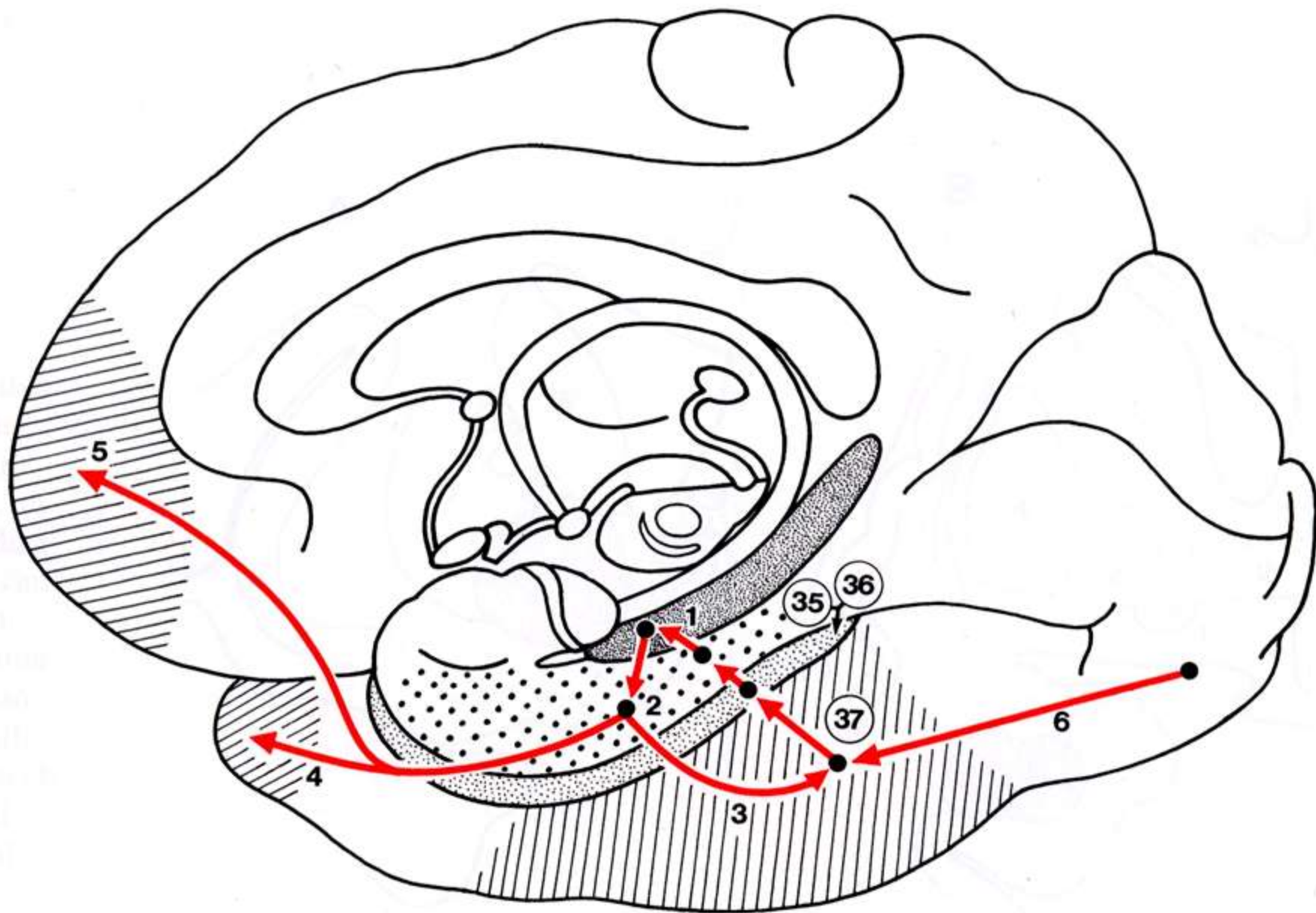


SYSTEME LIMBIQUE

- **Appareil olfactif**
- **Hippocampe**
- **Amygdale**
- **Région septale**
- **Cortex limbique (T5 + cingulum)**

SURFACE MEDIALE du LOBE LIMBIQUE





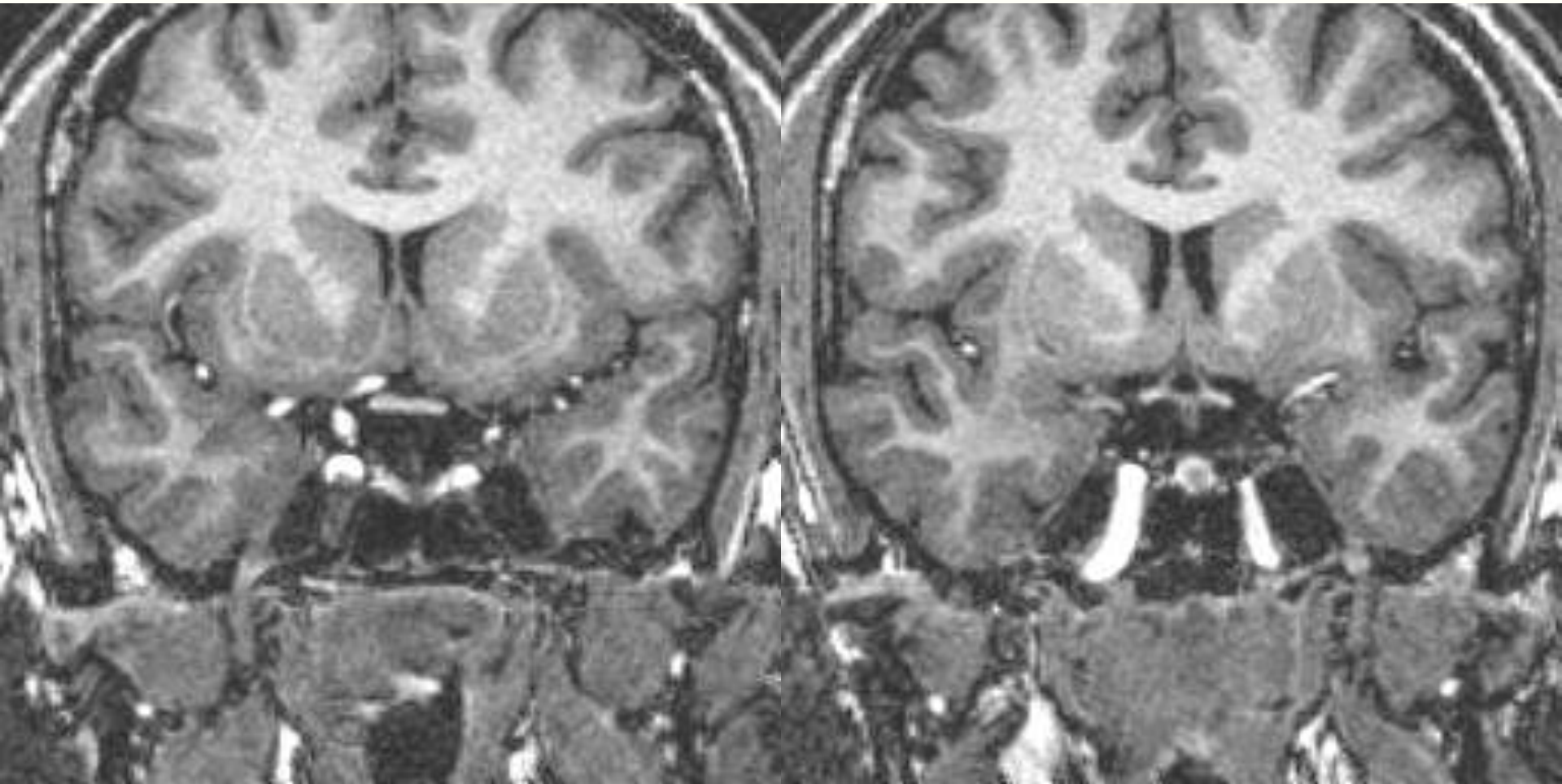
LOBE TEMPORAL

HIPPOCAMPE

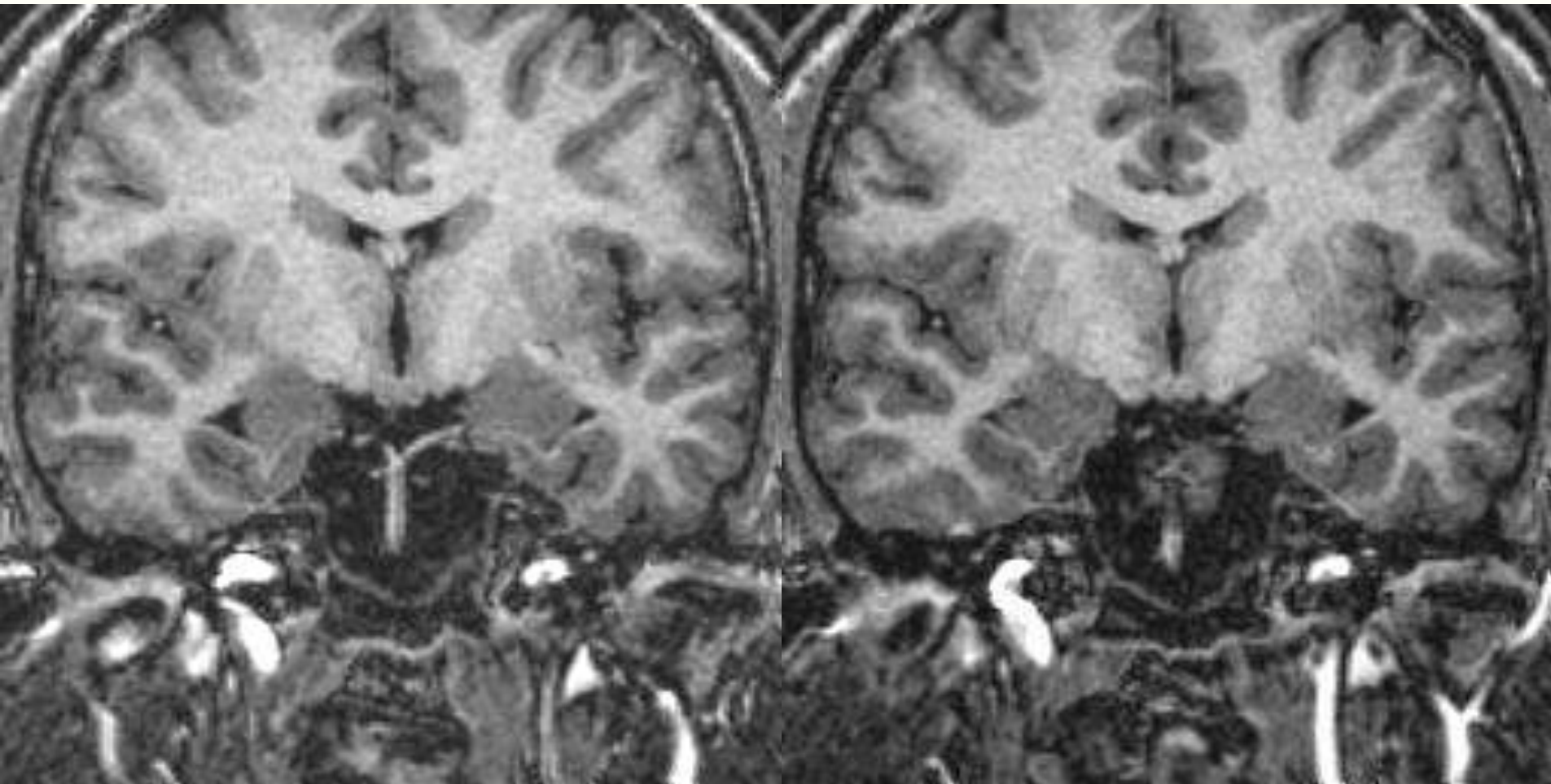
ET

CORTEX MEDIAL ET INFÉRIEUR

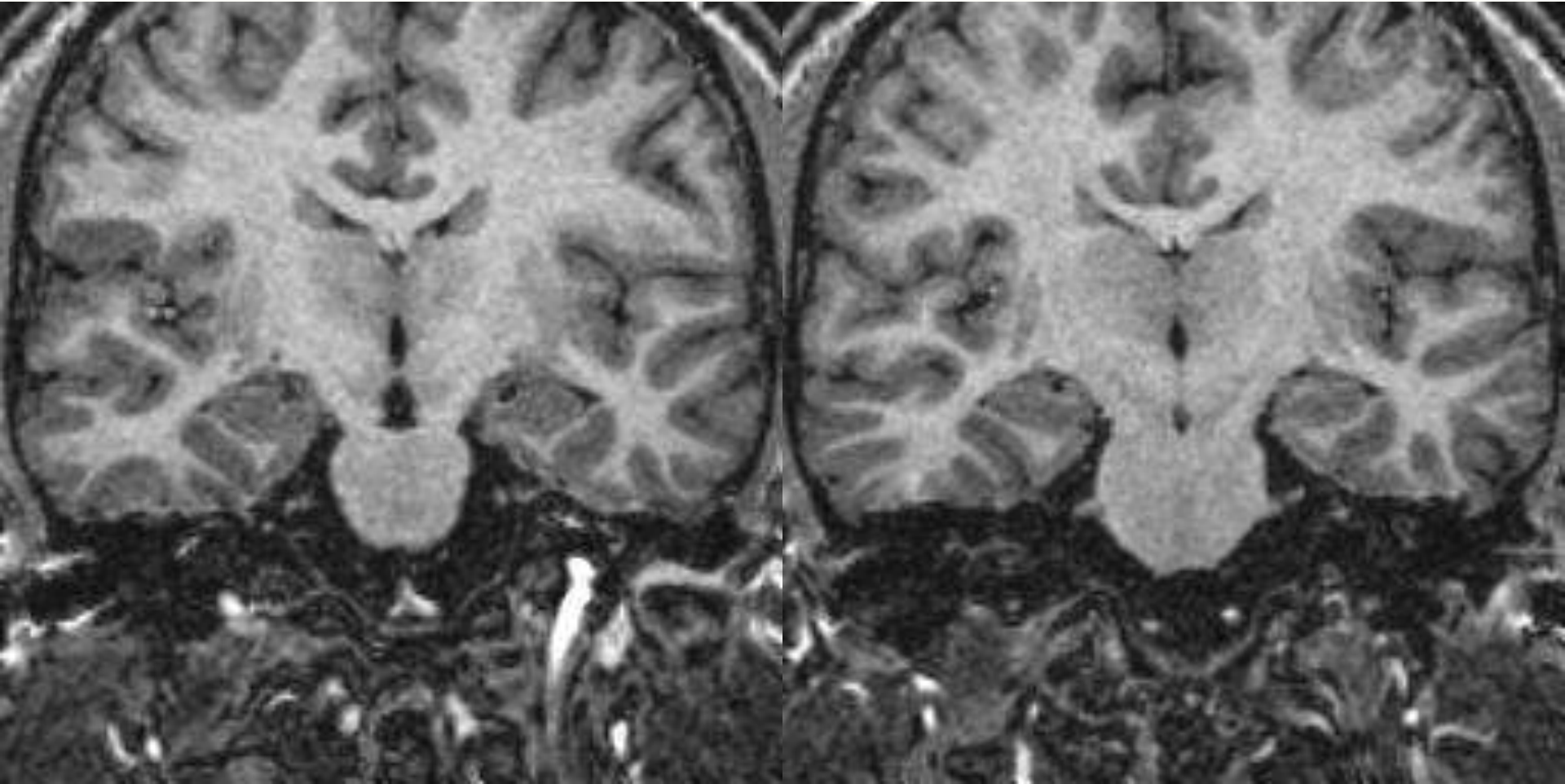
S. Temp. Inf. & Sup et Collatéral



Sillons T-Occ Lat et Collatéral Amygdale

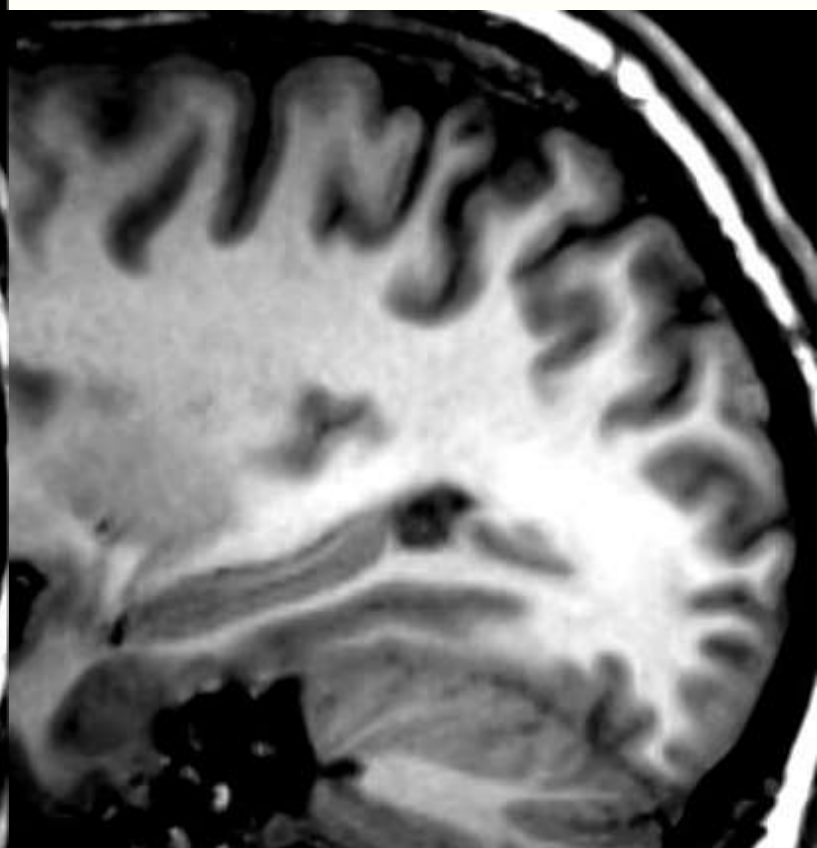
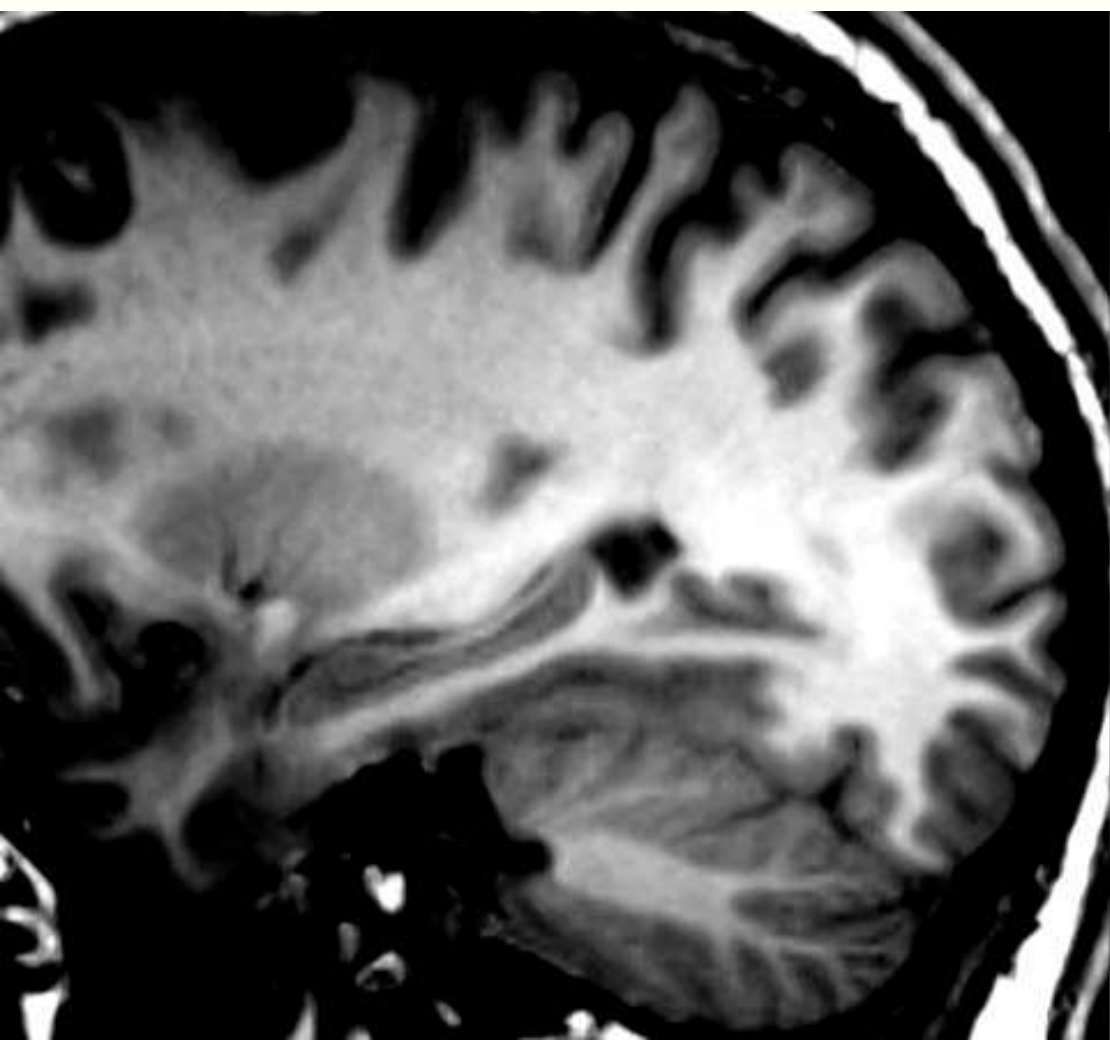


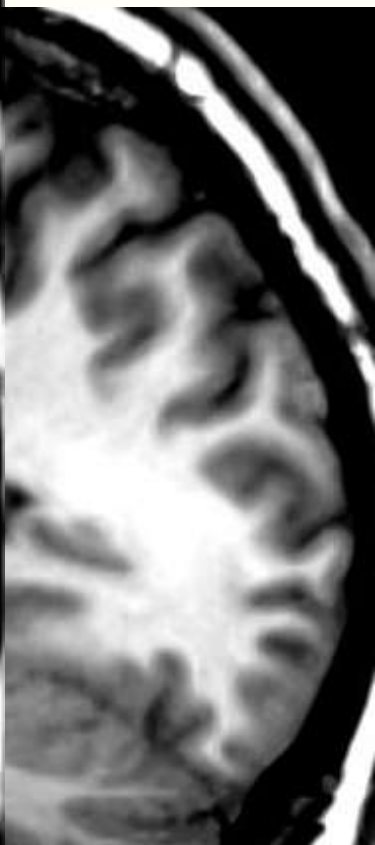
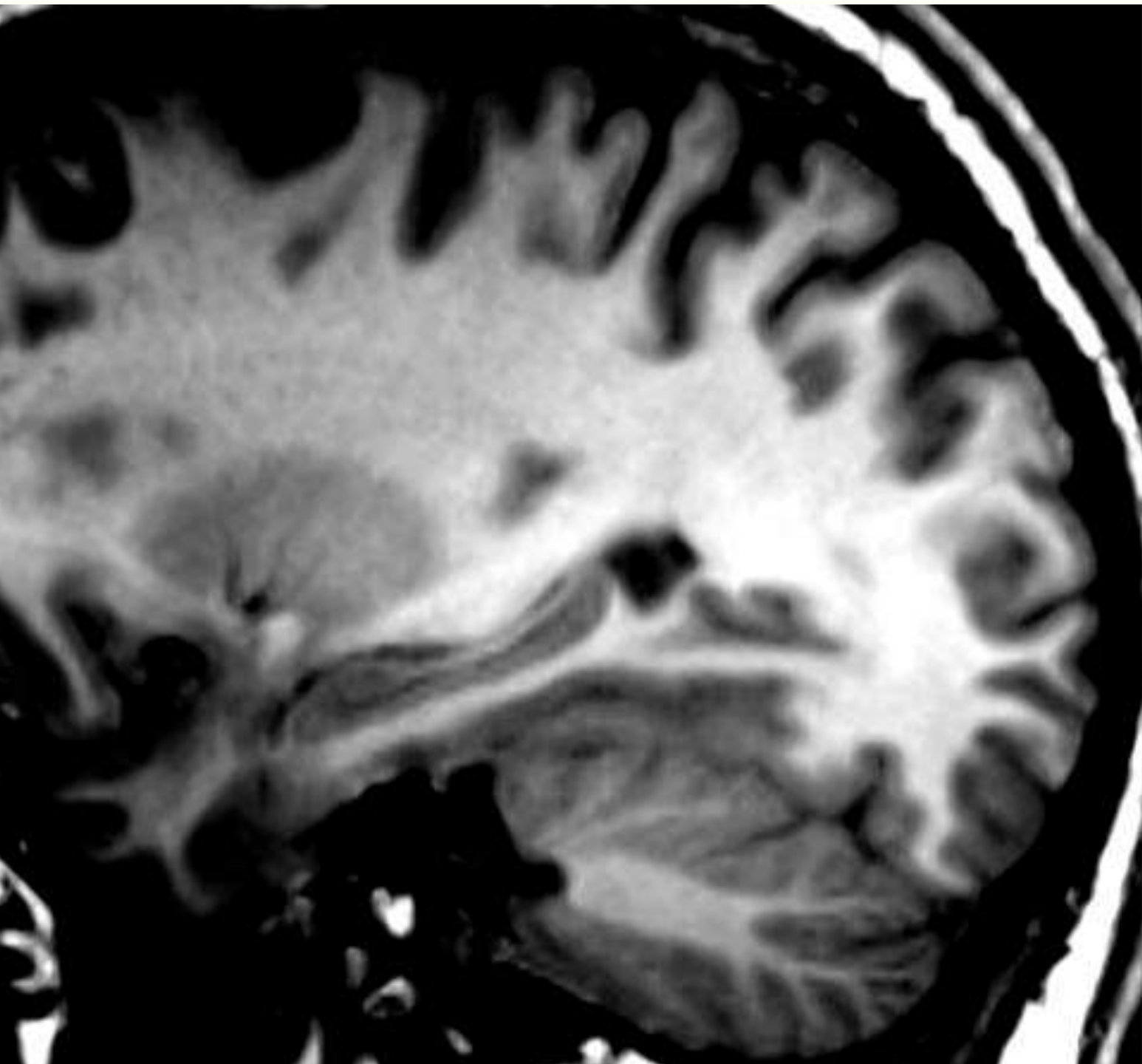
Gyri Temp.Occ.Lat & ParaHippocampique

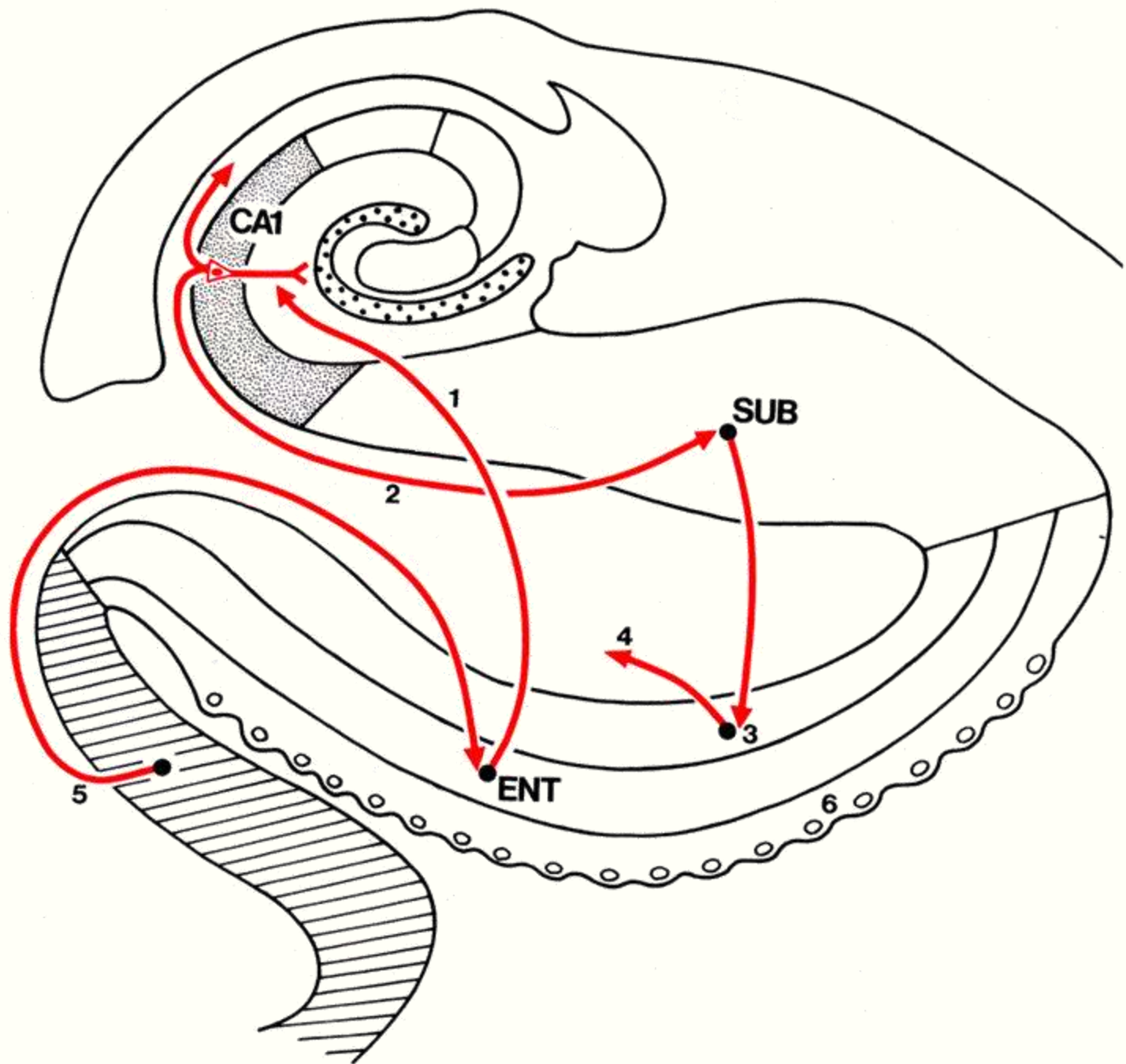


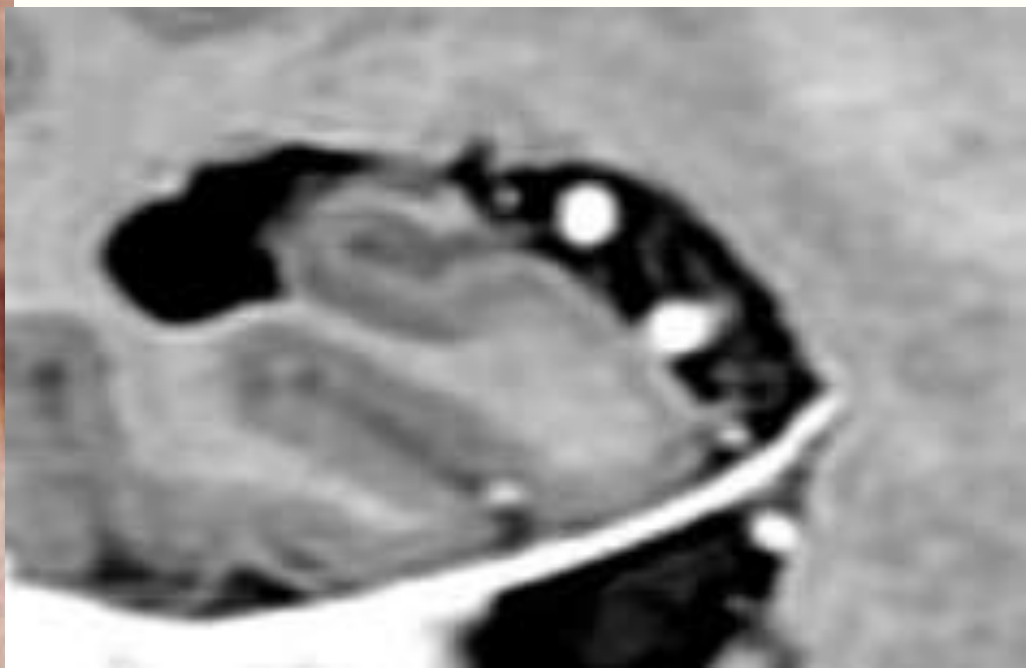
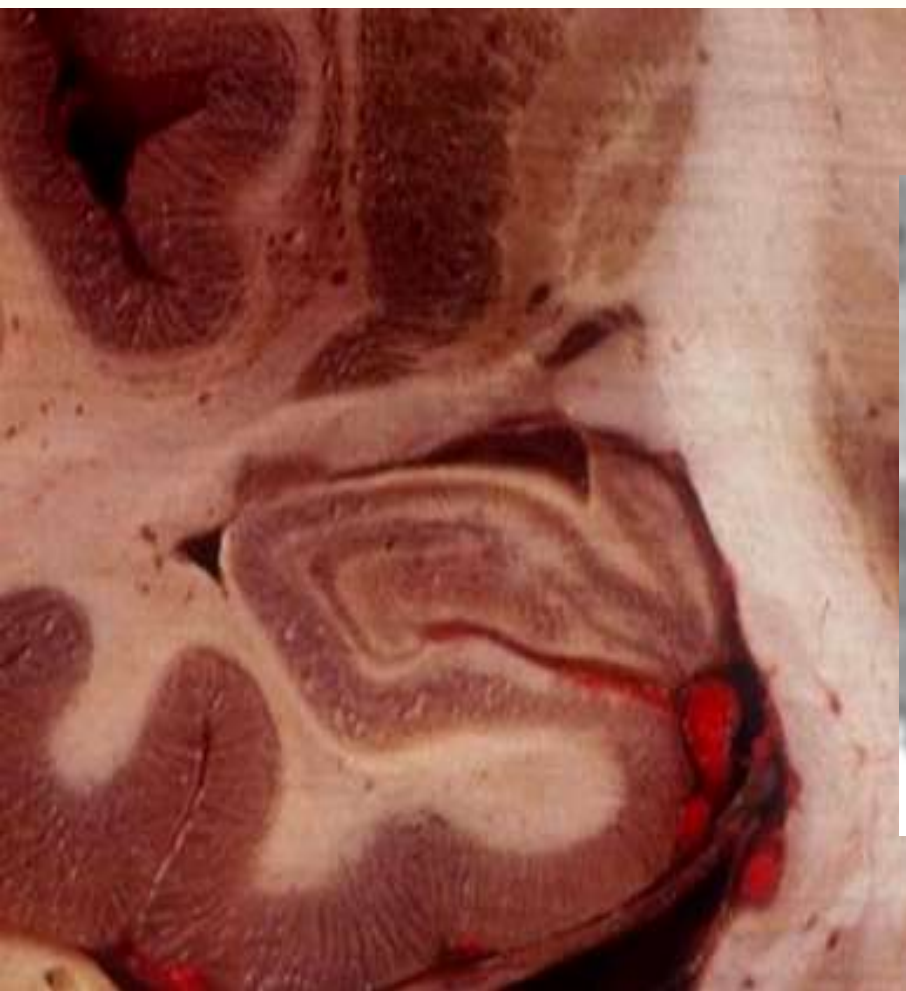
FORMATIONS HIPPOCAMPIQUES

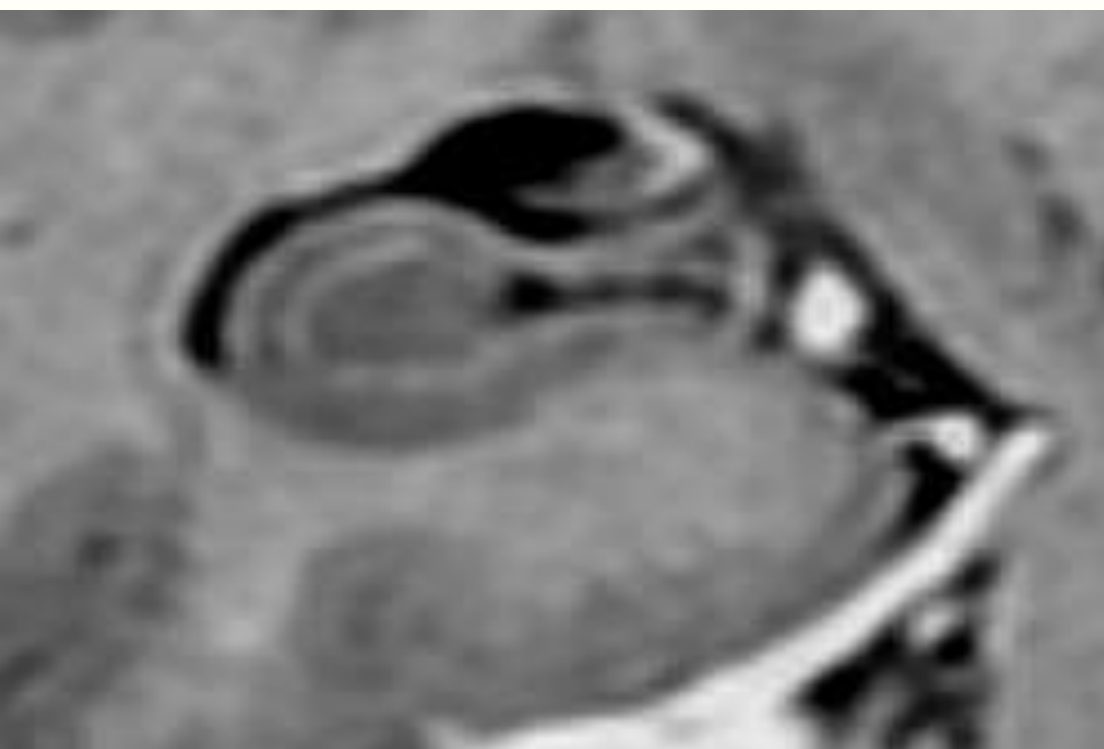
- **SUBICULUM**
- **CORNE D'AMON (CA)**
- **GYRUS DENTATUS**
- **FIMBRIA (ALVEUS)**

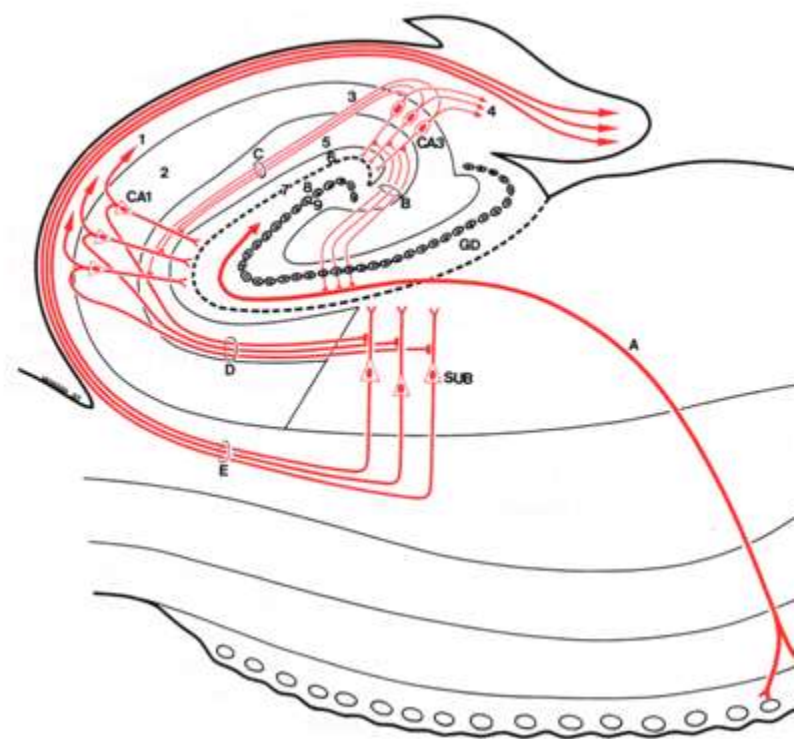
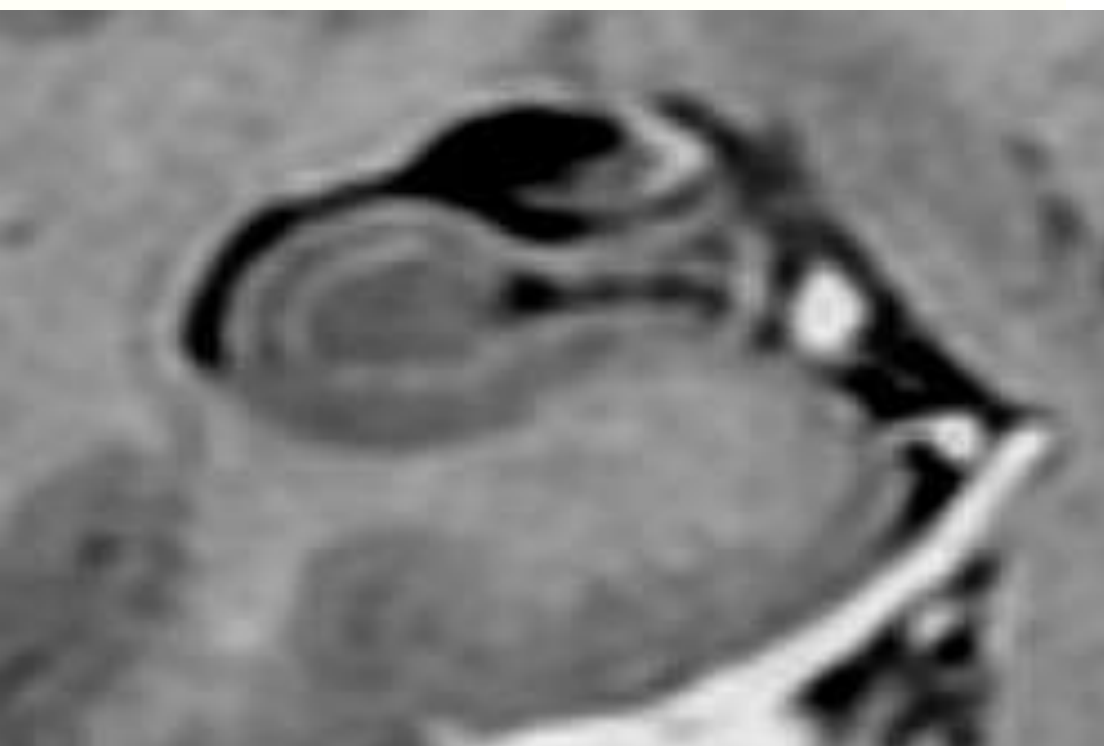


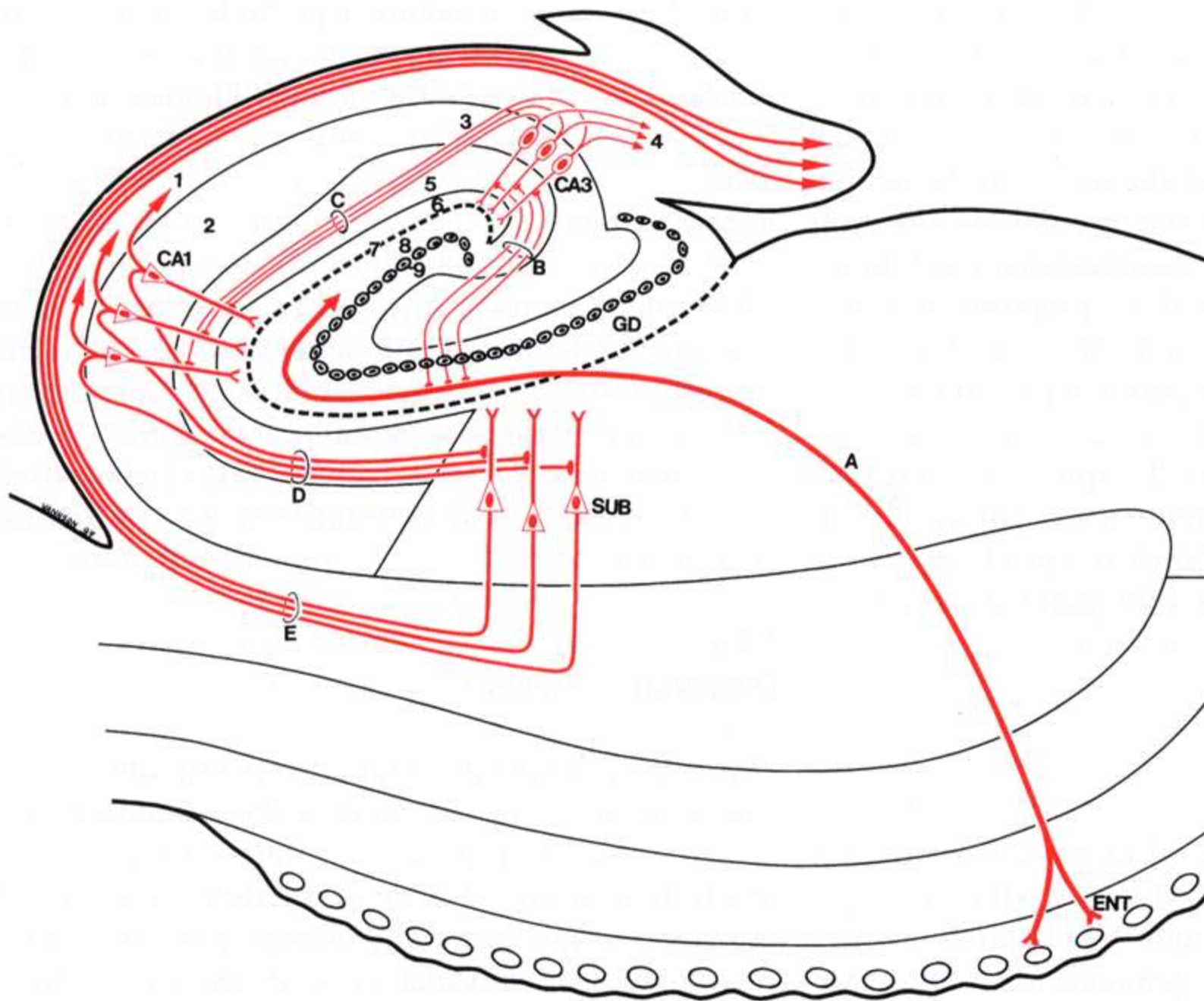


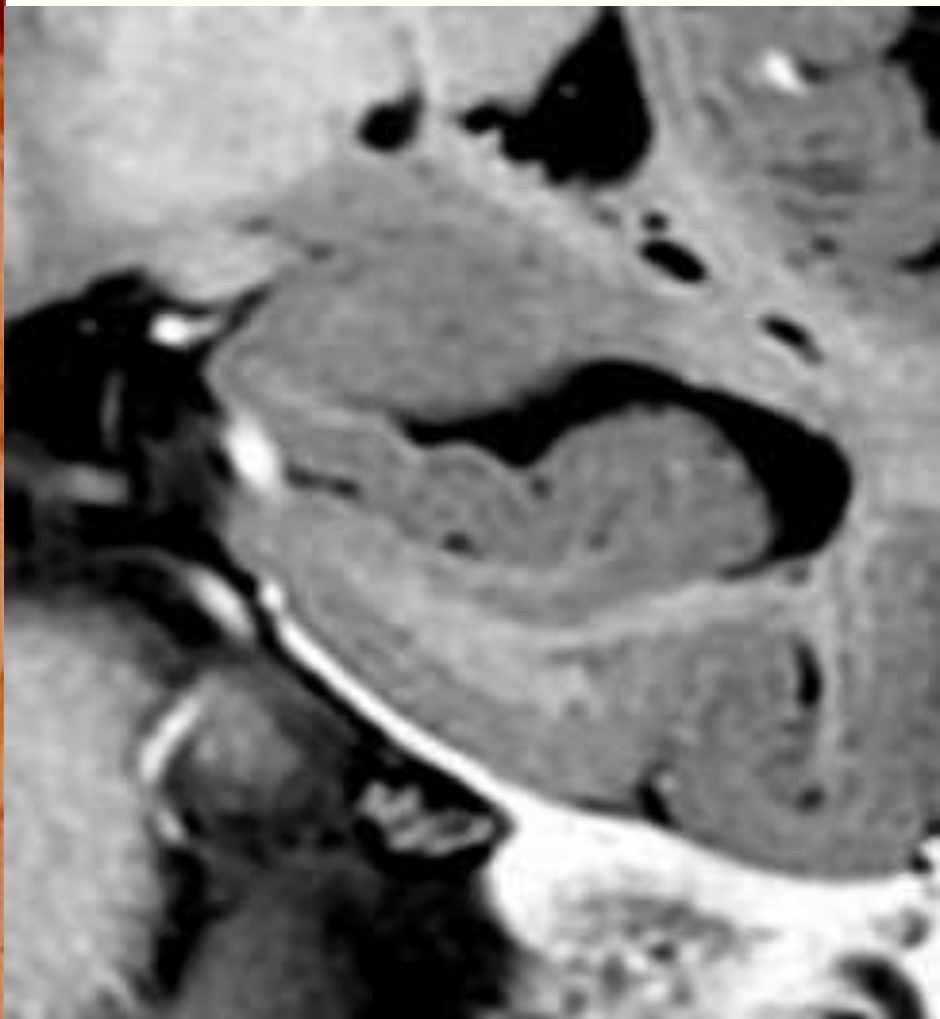


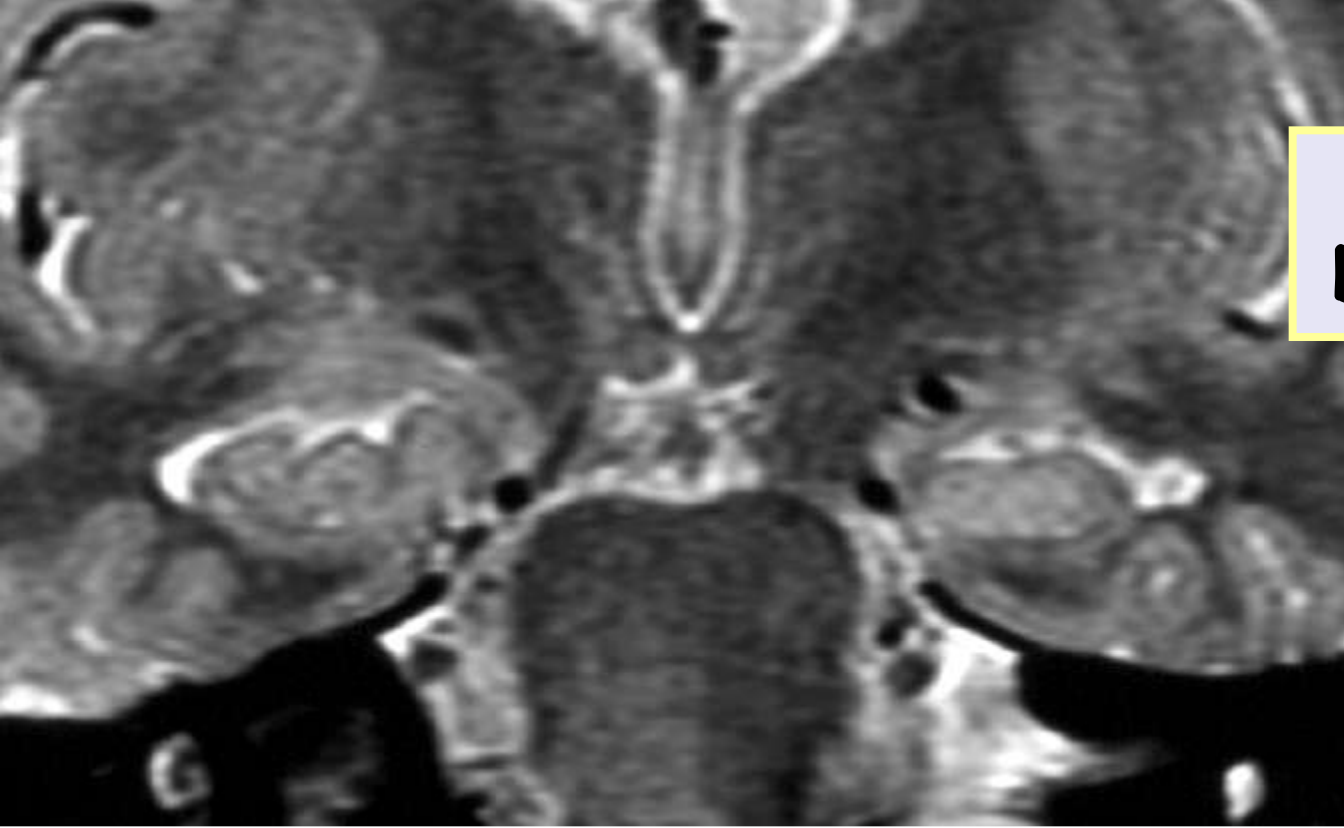




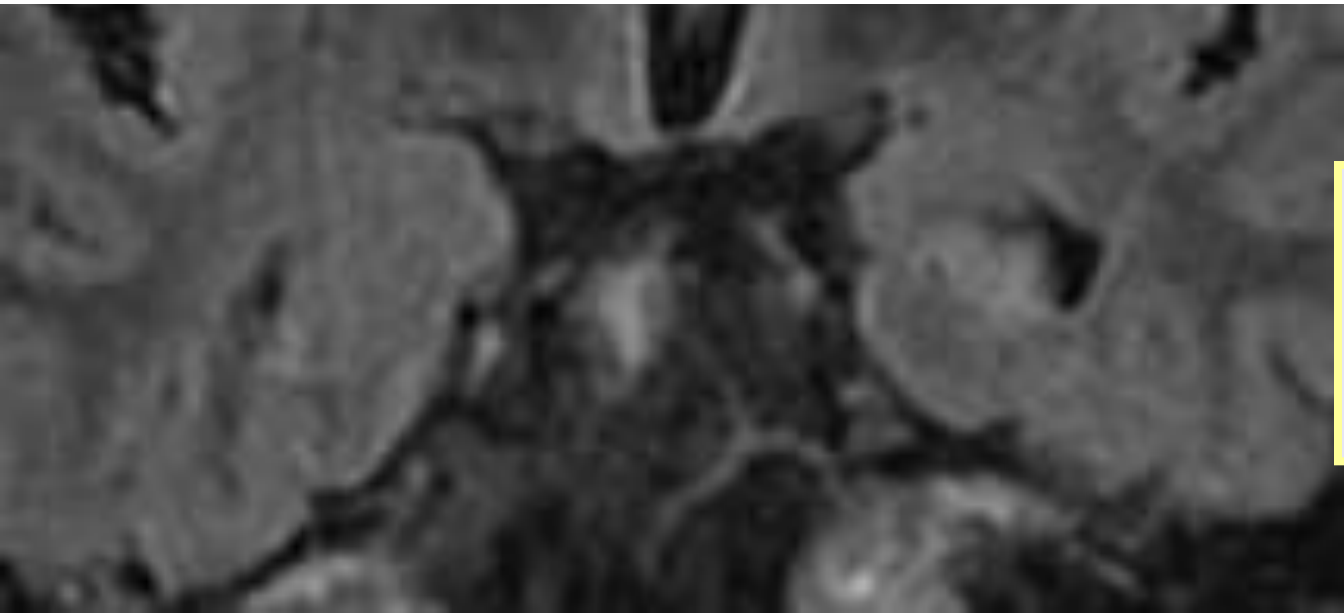








**PERTE DES
DIGITATIONS**



**DILATATION
CORNE
TEMPORALE**

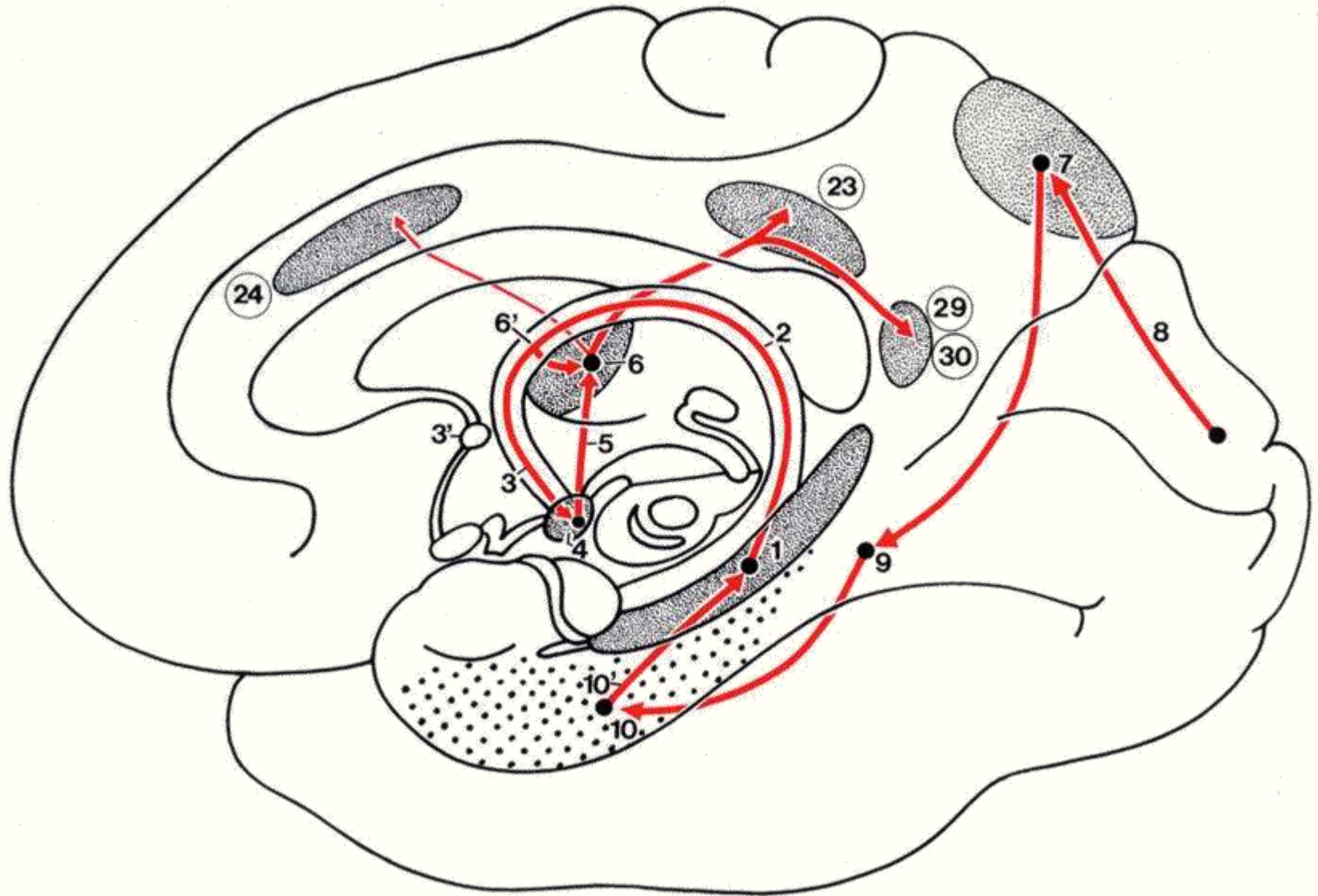
MEFIER VOUS DE LA VOLUMETRIE SEULE DE L'HIPPOCAMPE !!

- Diverses situations (Schizophrénie, Post-trauma, Dépression, Démences débutantes et Alzheimer)
- ***DISPERSION DU VOLUME MOYEN EST IDENTIQUE CHEZ LES JEUNES ET LES SENIORS***
- ***25% DES JEUNES NORMAUX ONT UN VOLUME AUSSI FAIBLE QUE CELUI DES SENIORS DE 60-75 ANS***
- *S. Lupiens et al Neuroimage 34 479-485 (2007) +++*

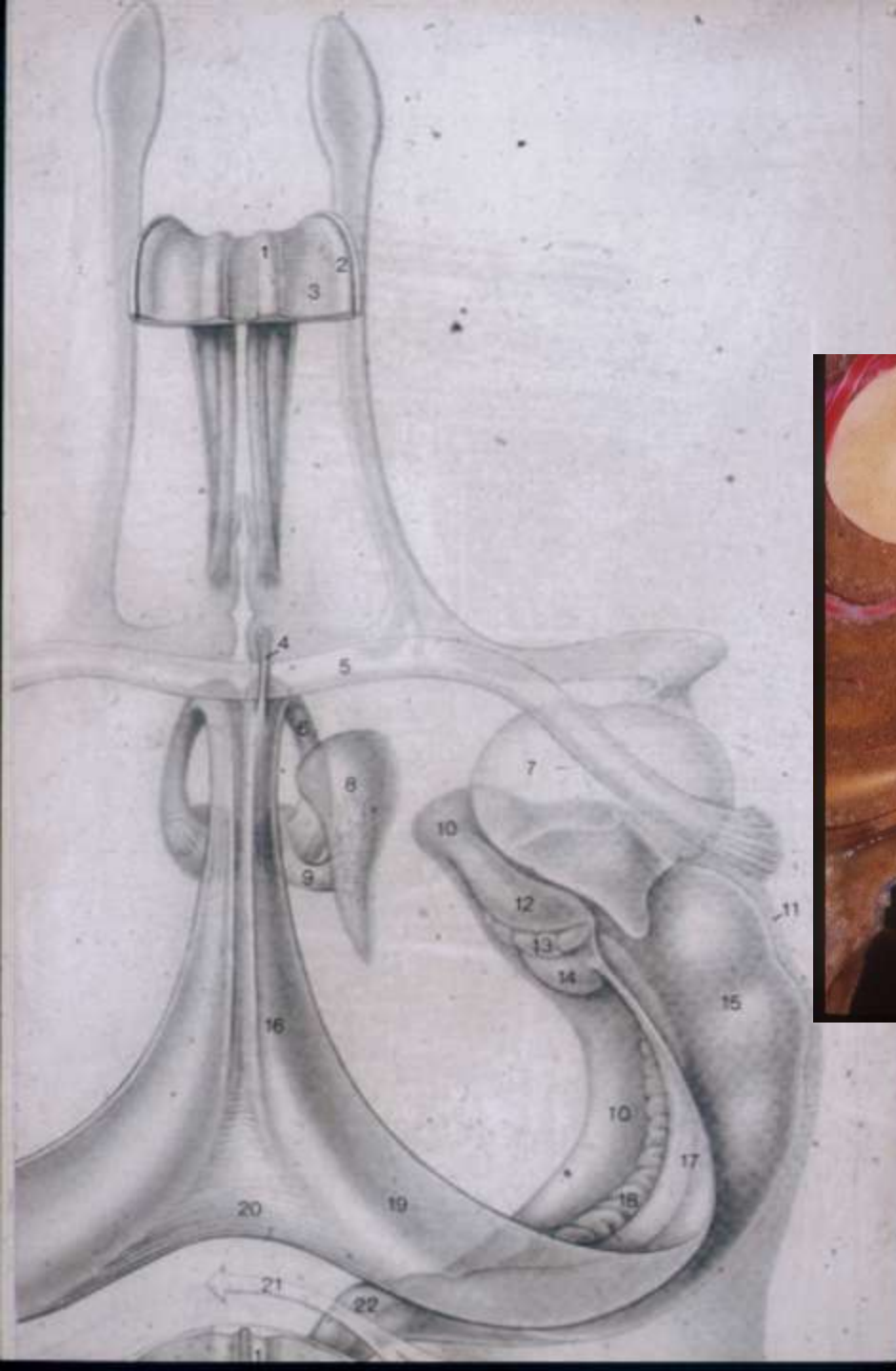
CONNEXIONS MEDIALES

- **FORNIX (Voie efférente interne)**
- **Voie perforante vers T5**
- **CINGULUM : Voie de retour externe**

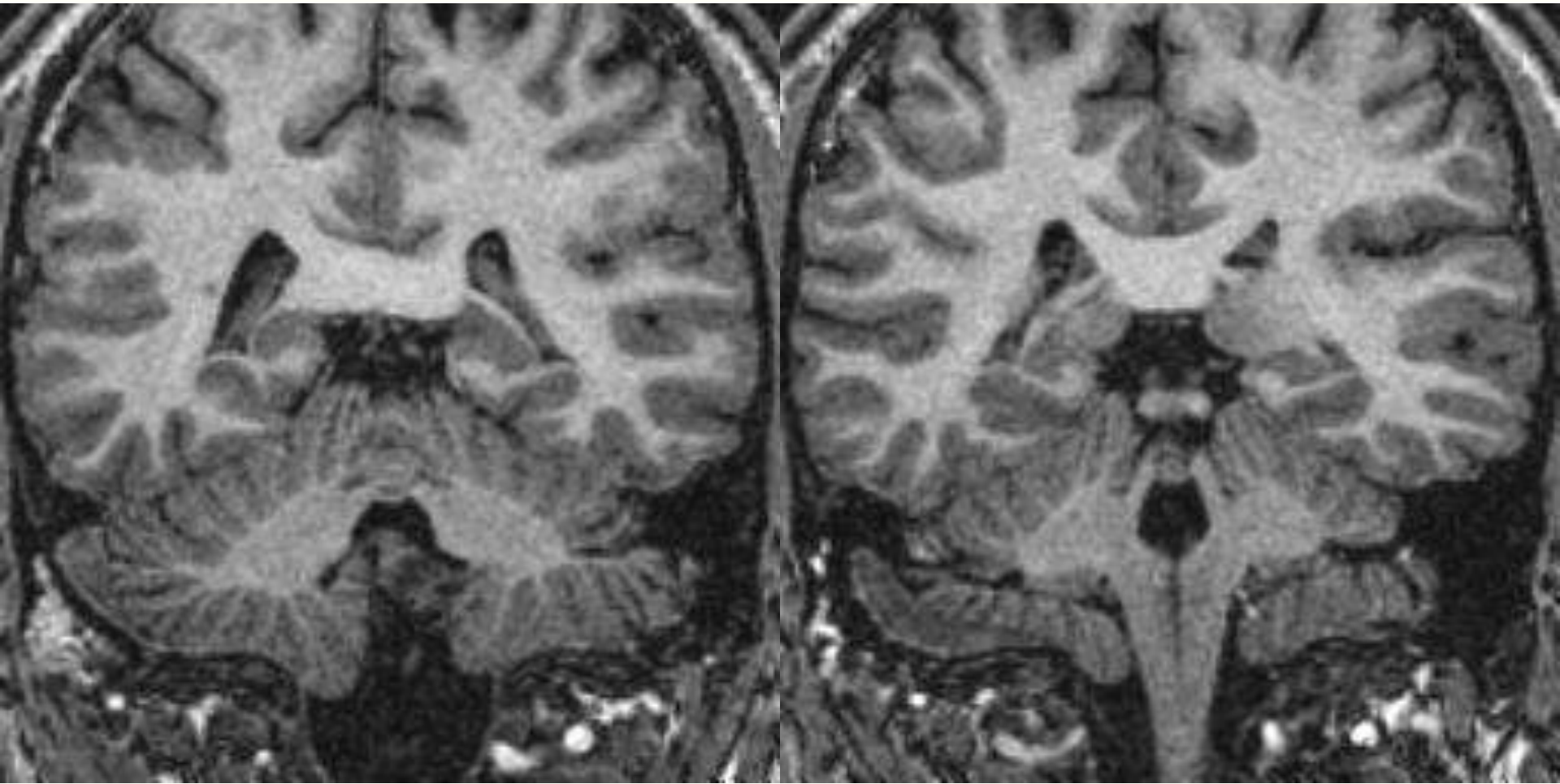
CIRCUIT DE PAPEZ

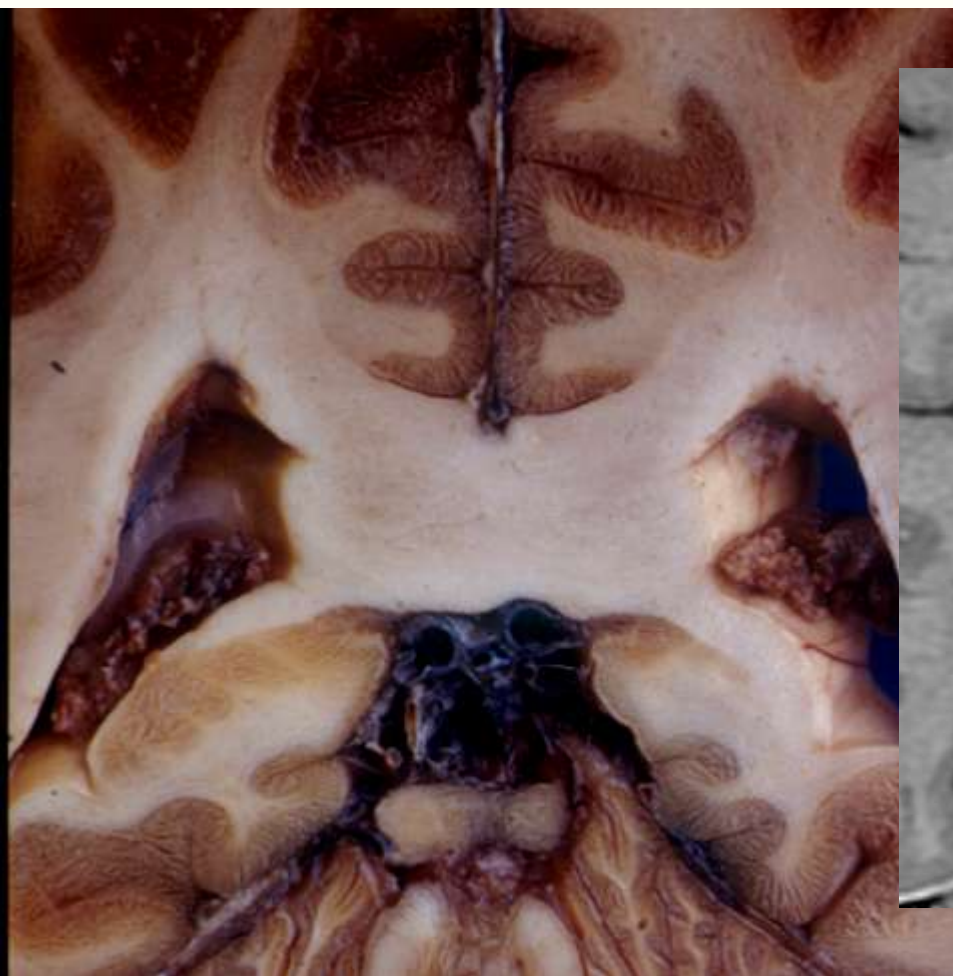


FORNIX

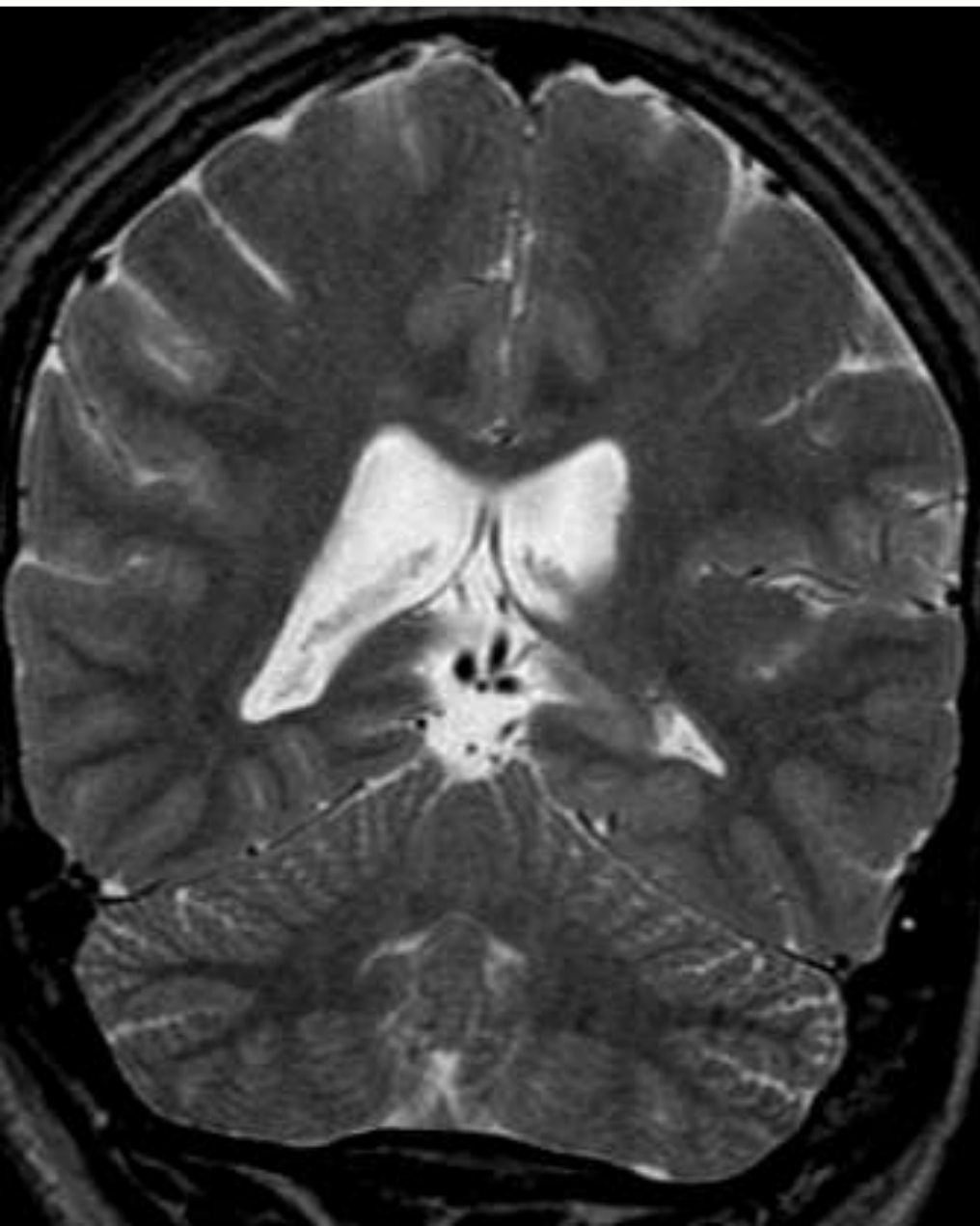


FORNIX

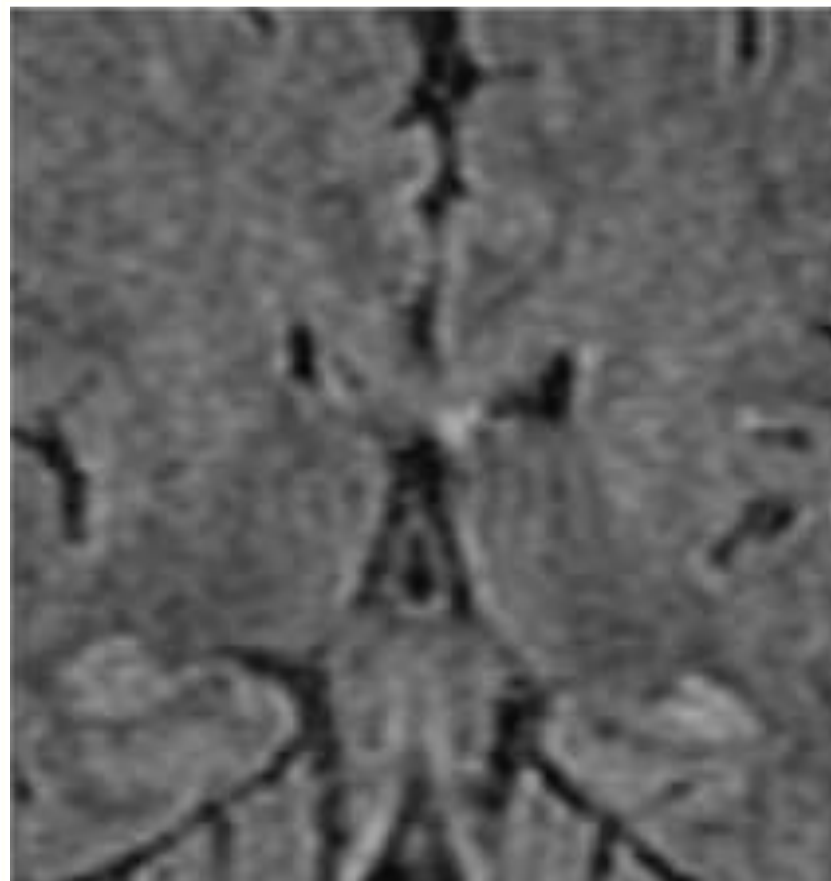




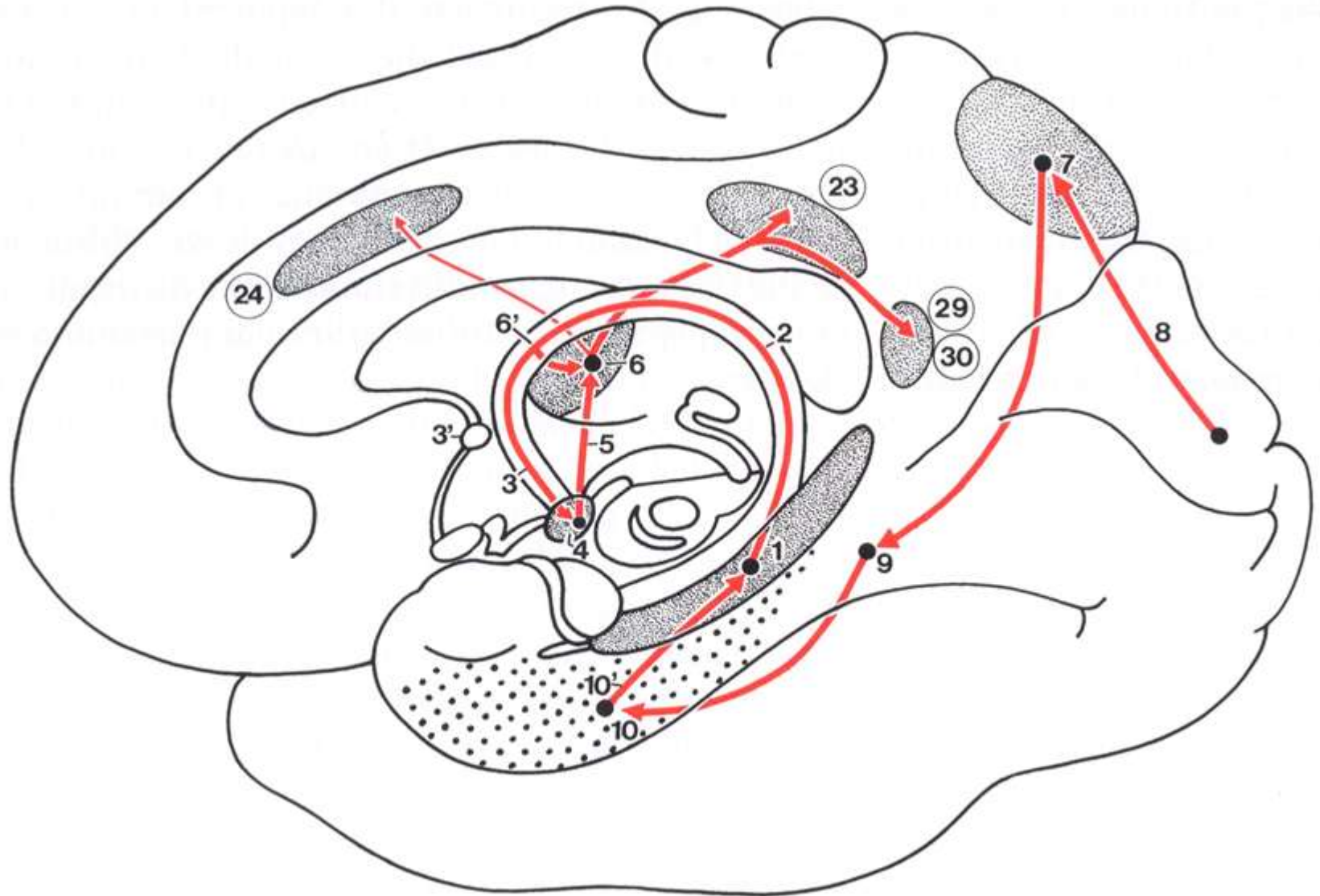
Atrophie du fornix

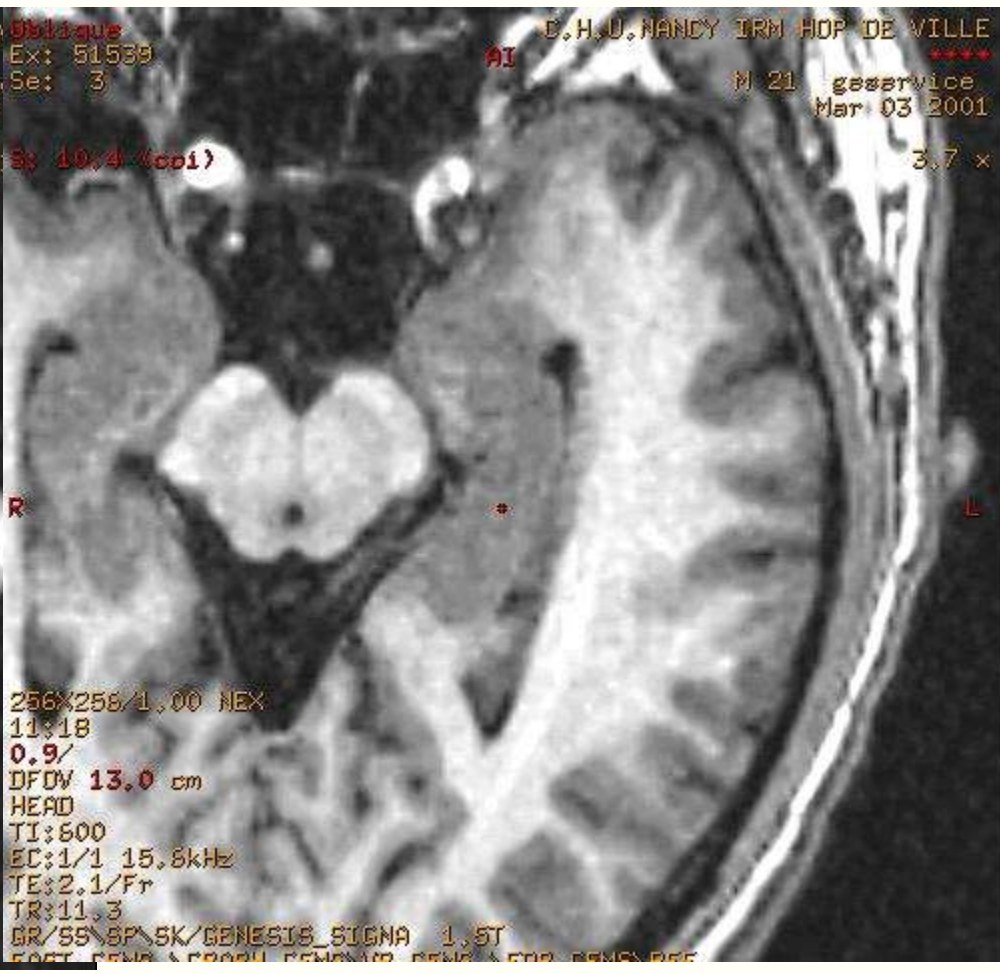


Hypersignal

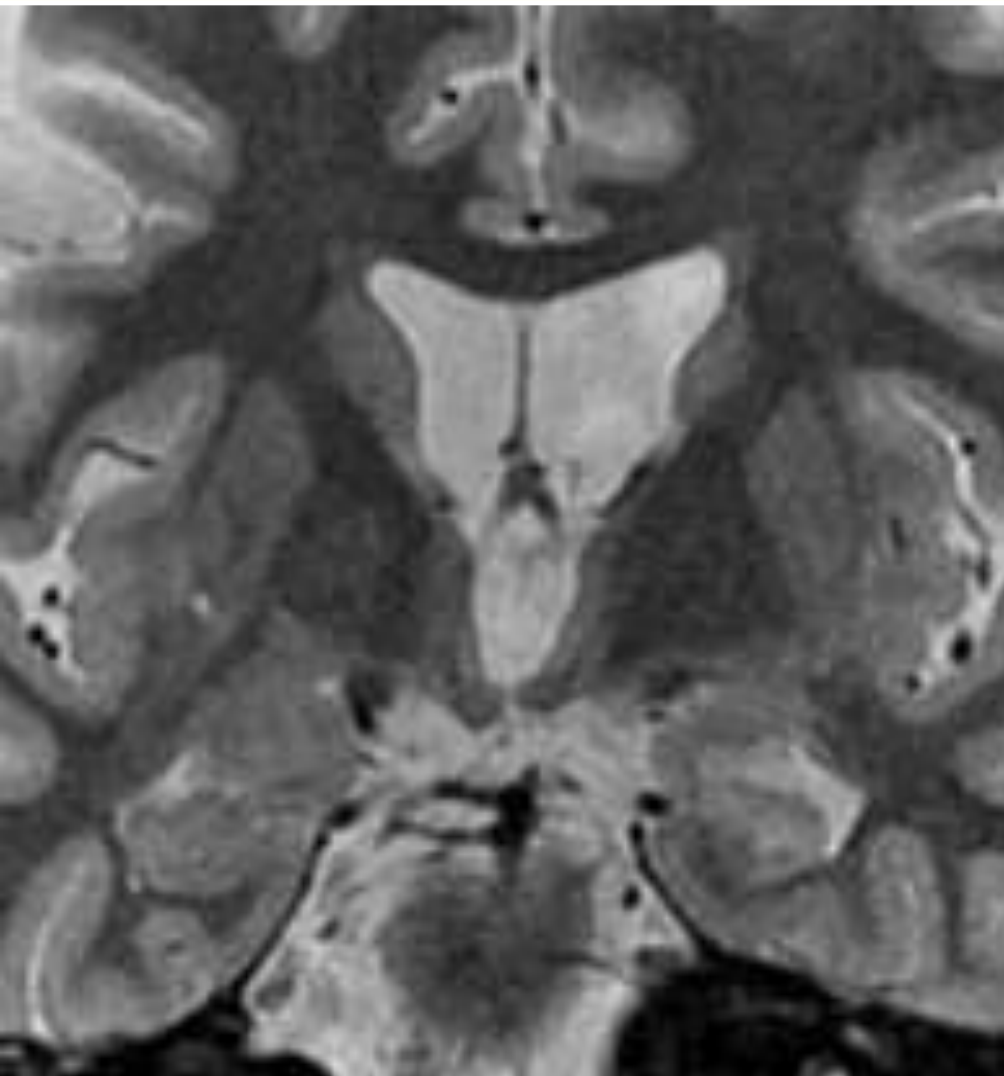


Circuit de Papez



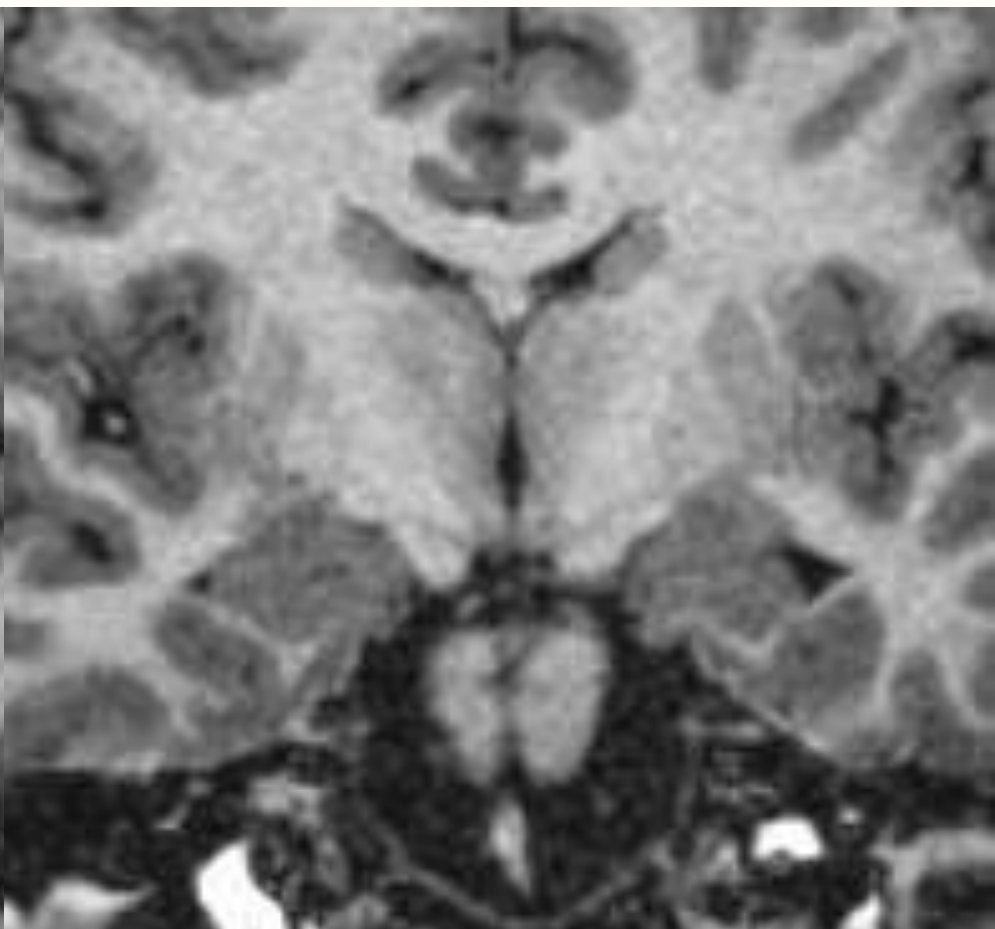
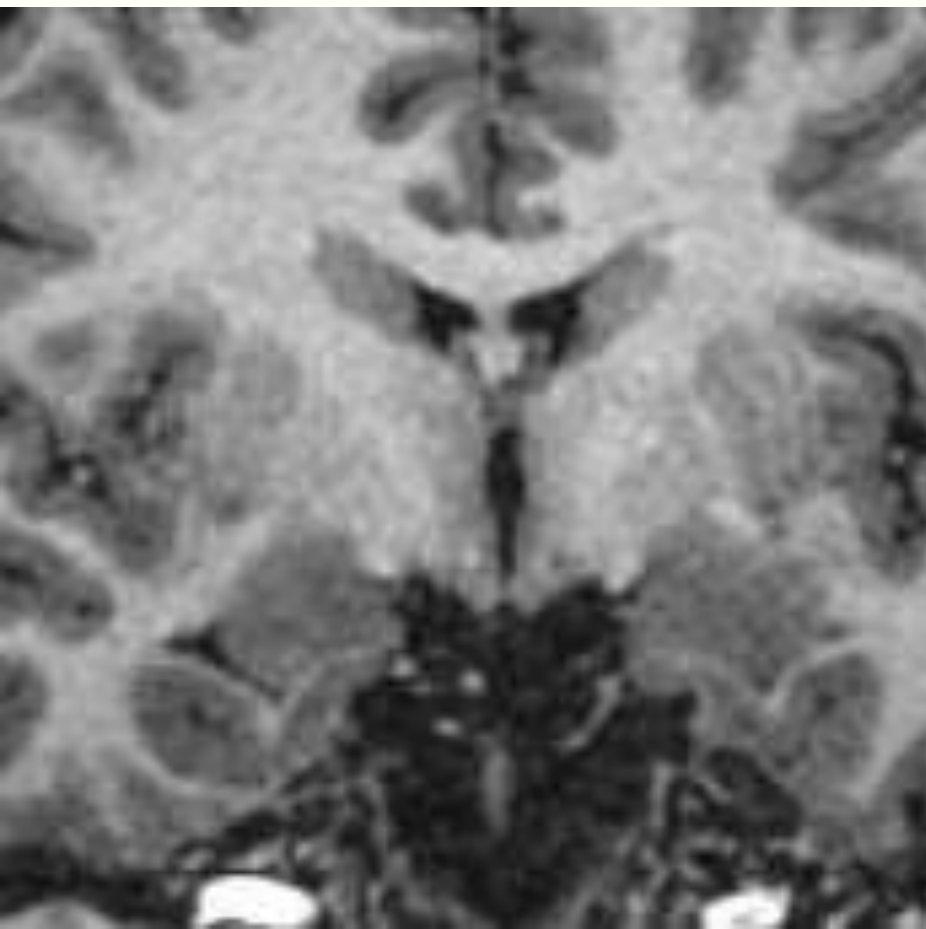


Atrophie du corps mamillaire

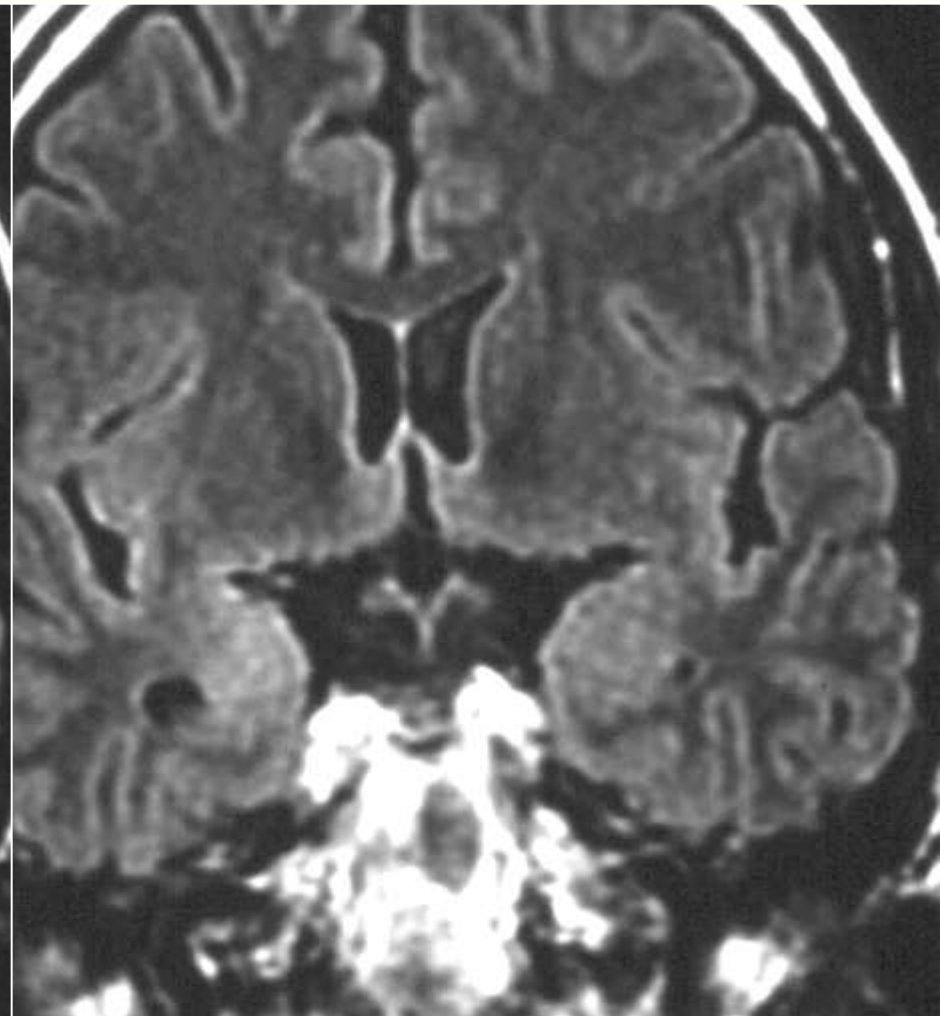
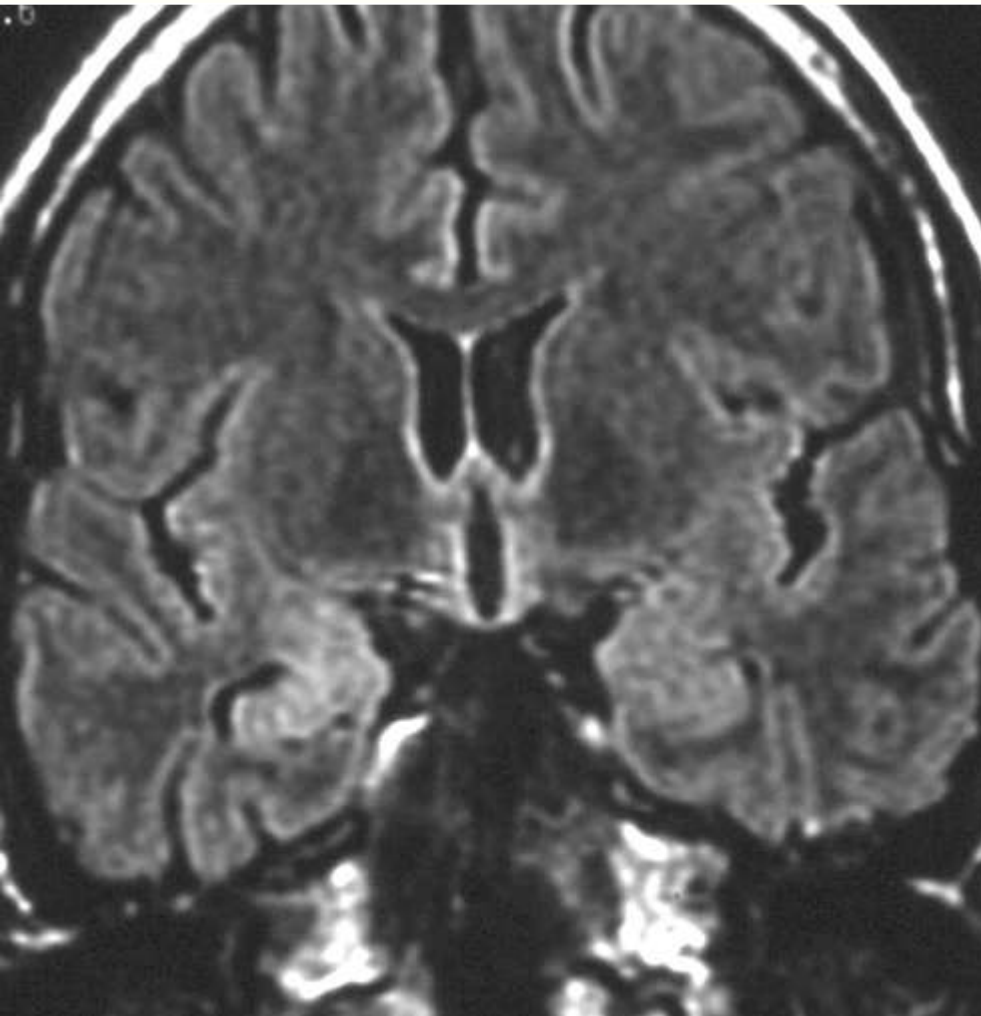


Complexe amygdalien

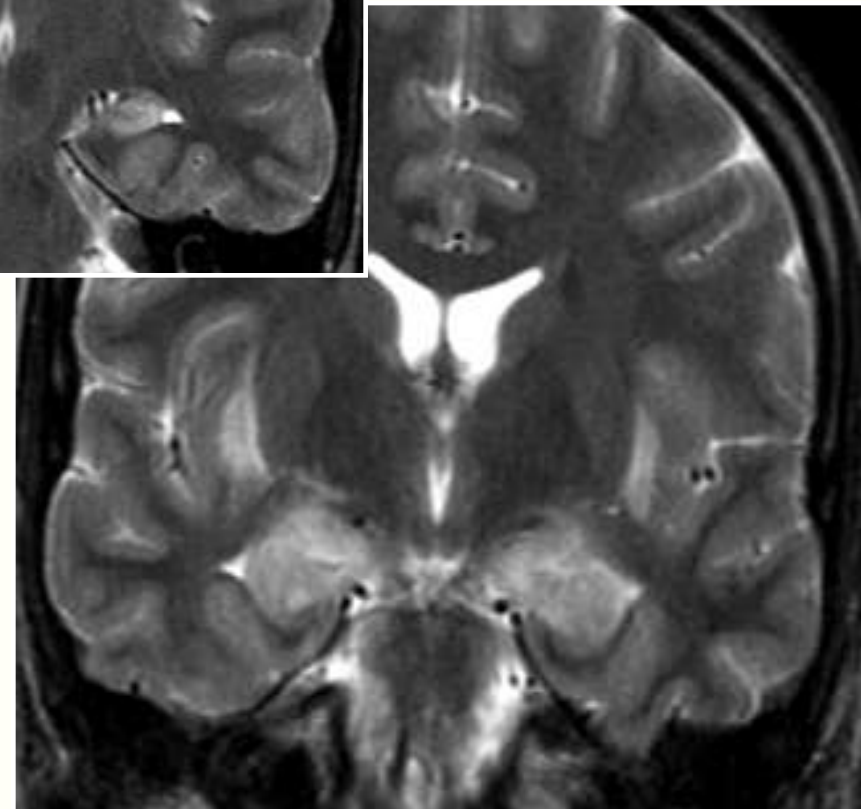
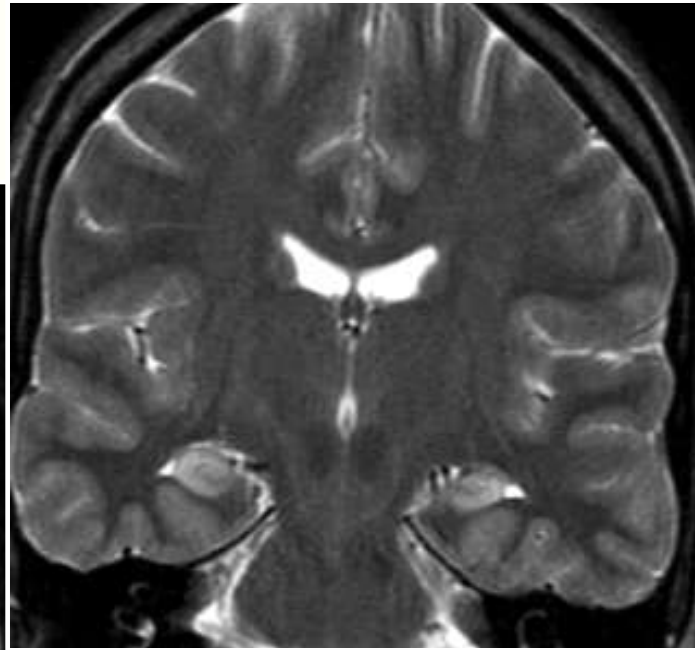
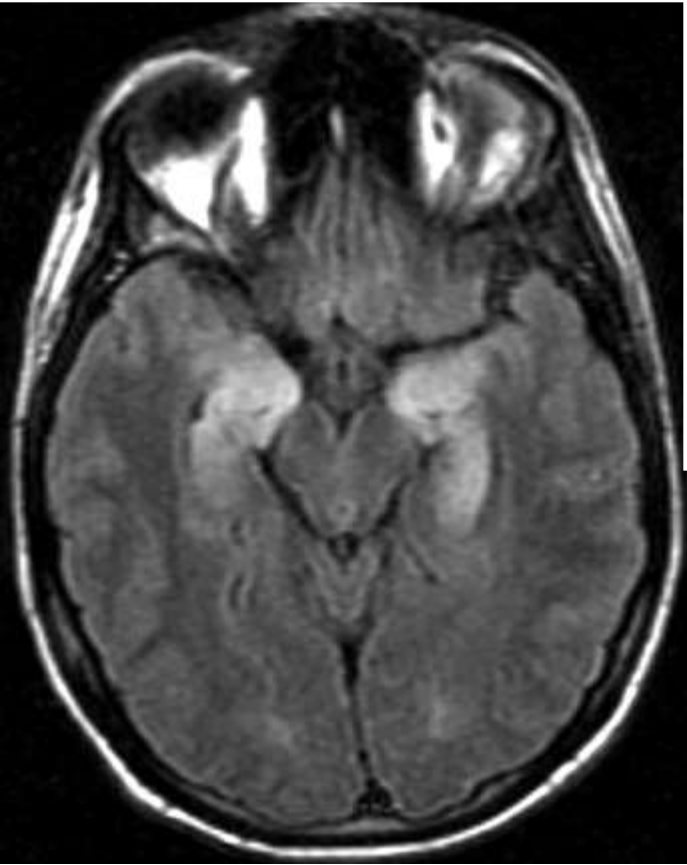
Amygdale



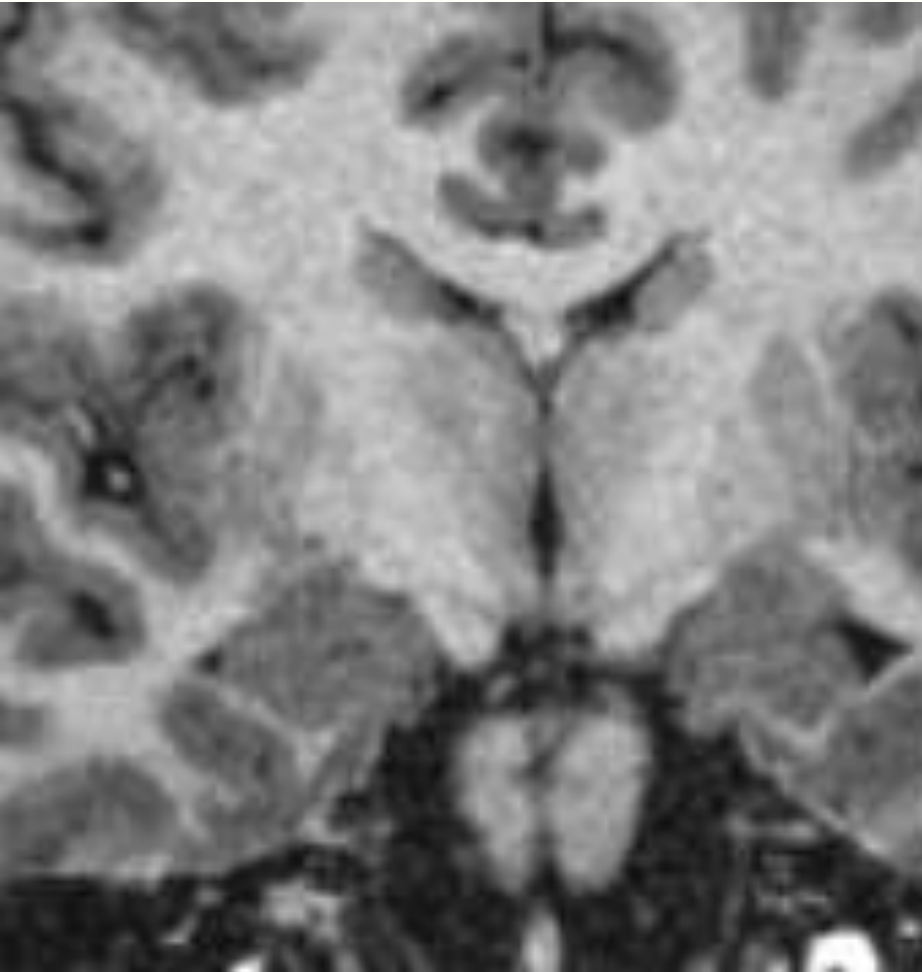
Hypersignal de l'amygdale

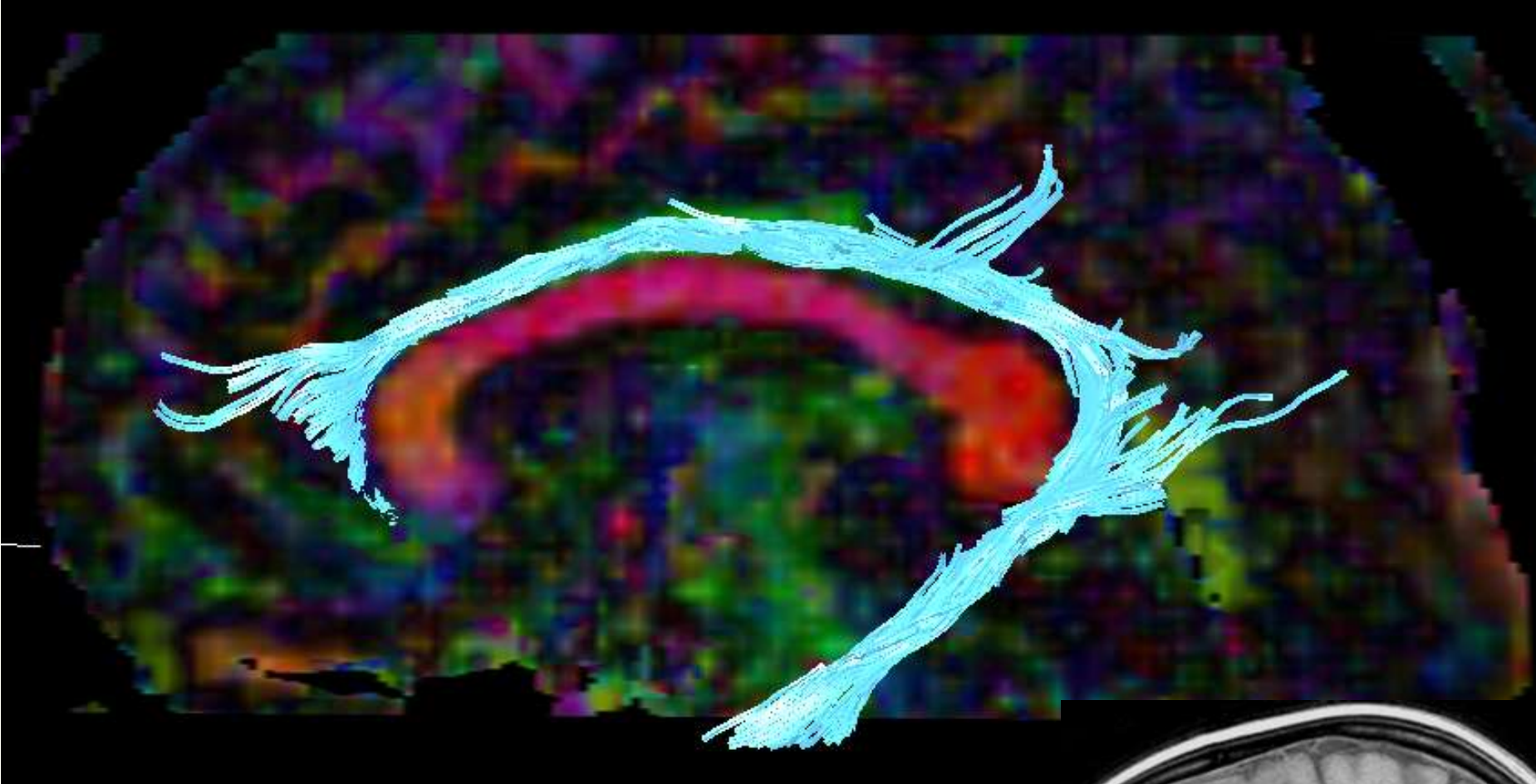


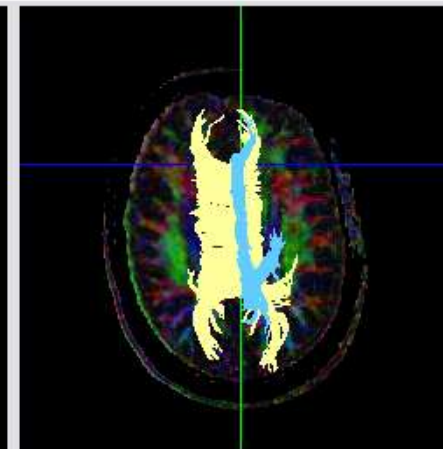
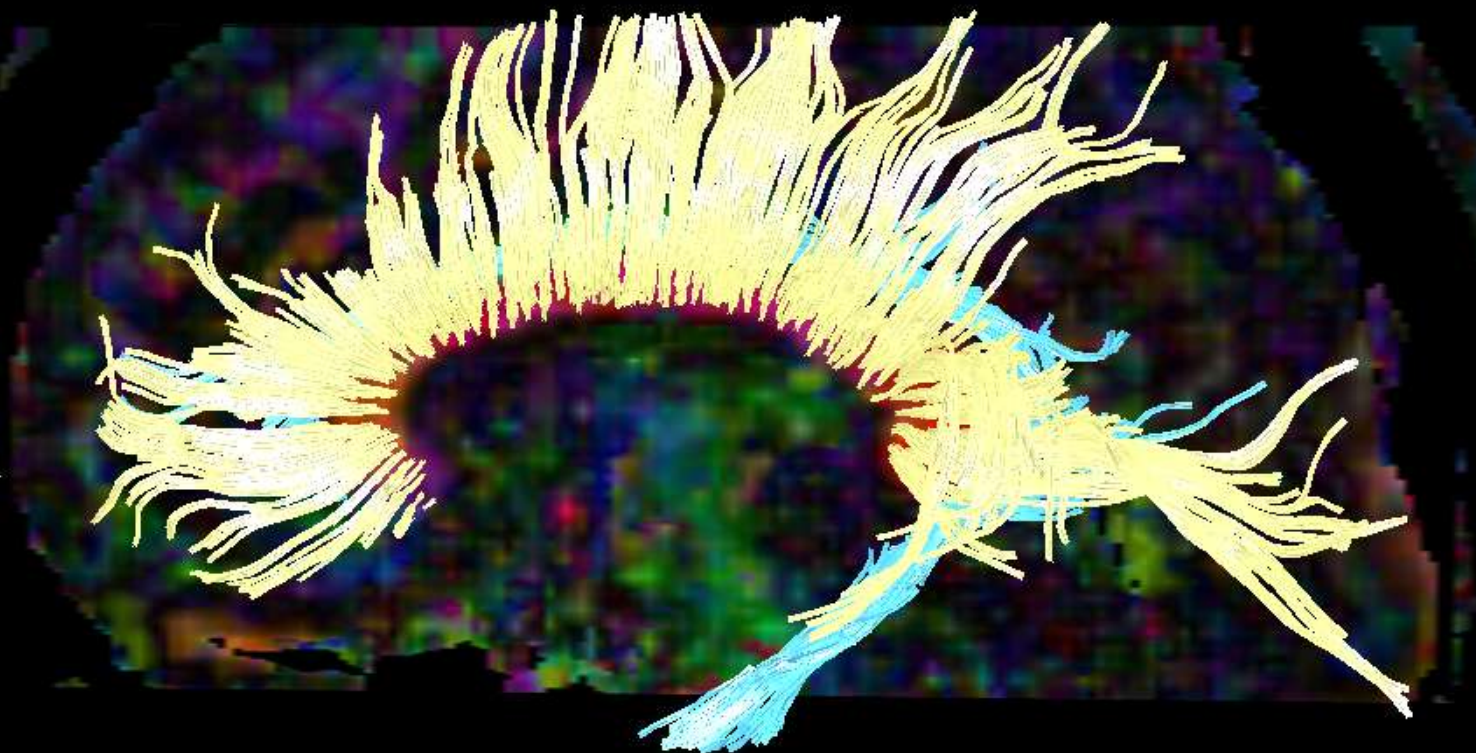
Diagnostic différentiel : encéphalite limbique



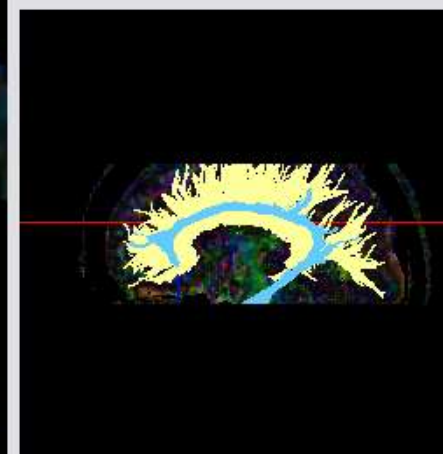
Gyrus Cingulaire



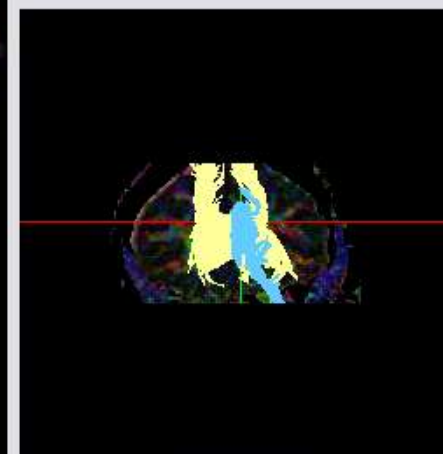




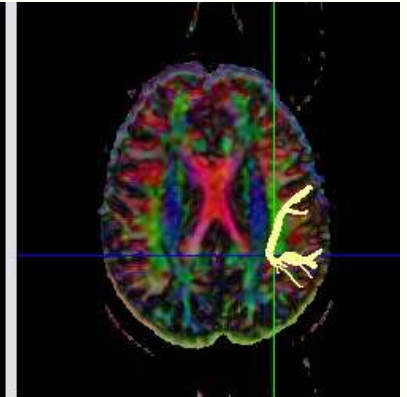
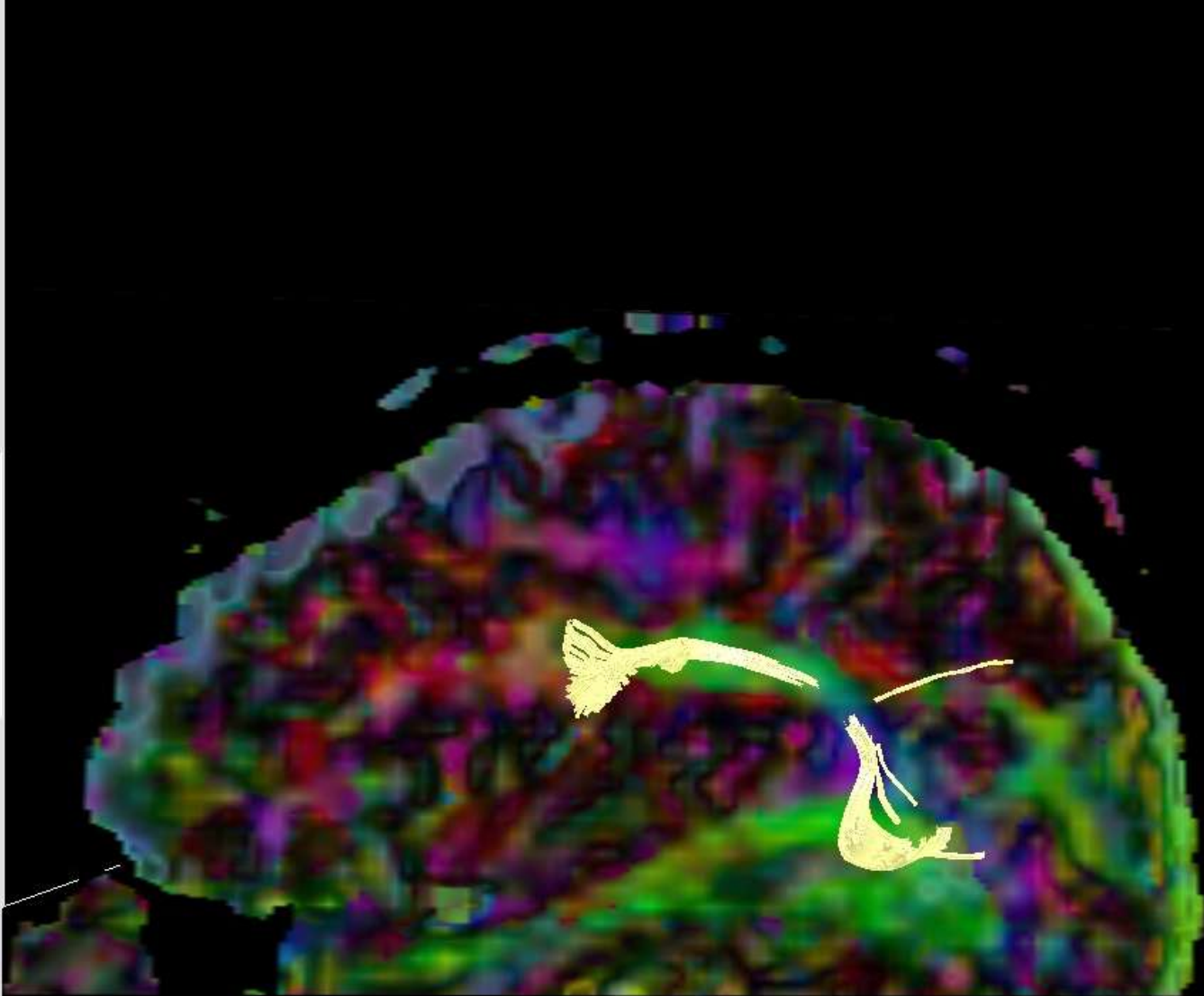
Transversal View



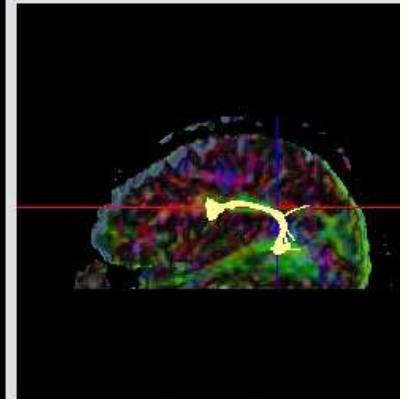
Sagittal View



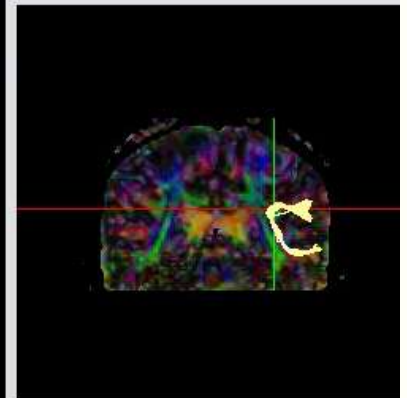
Faisceau Arqué



Transversal View

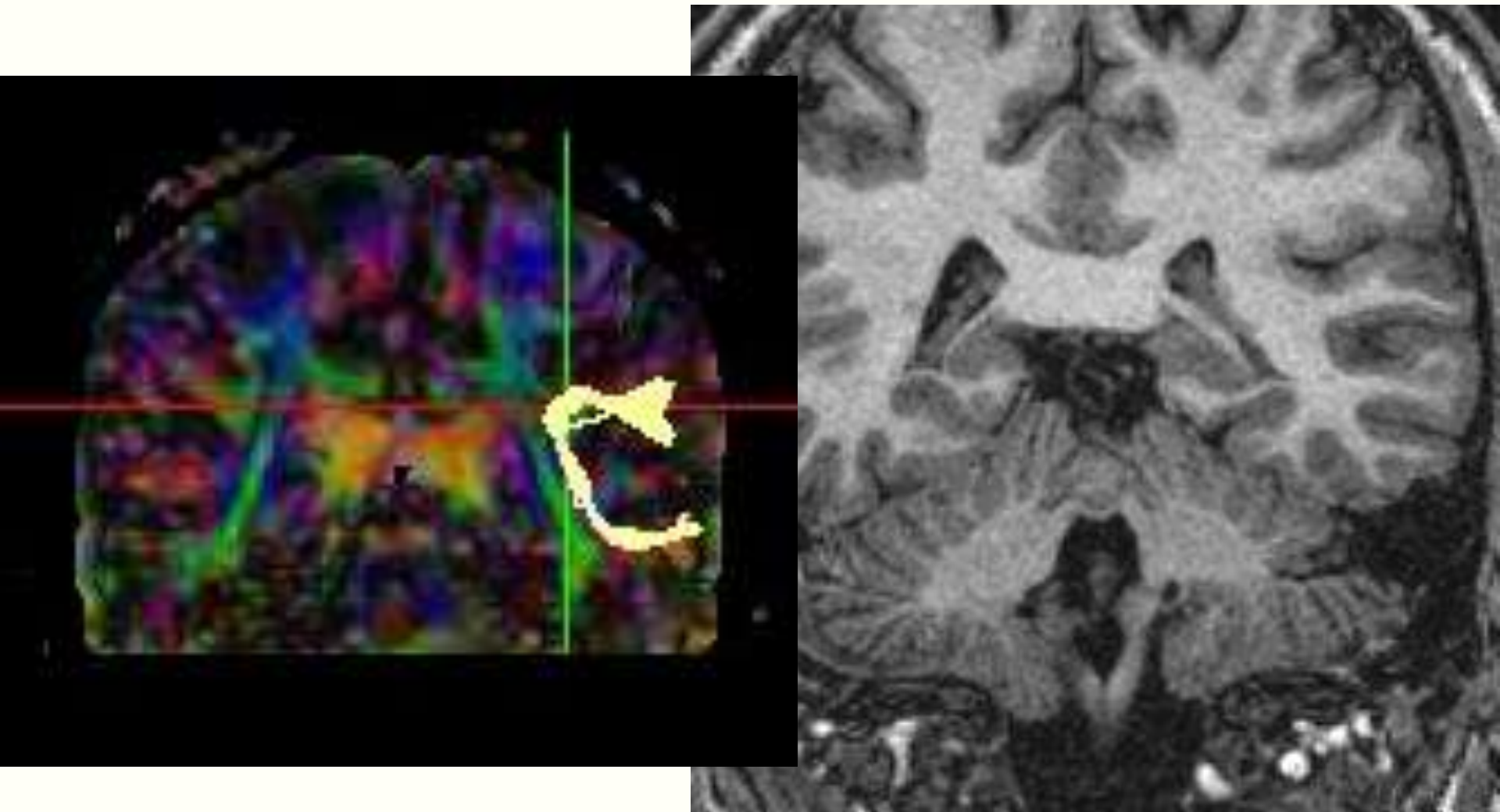


Sagittal View

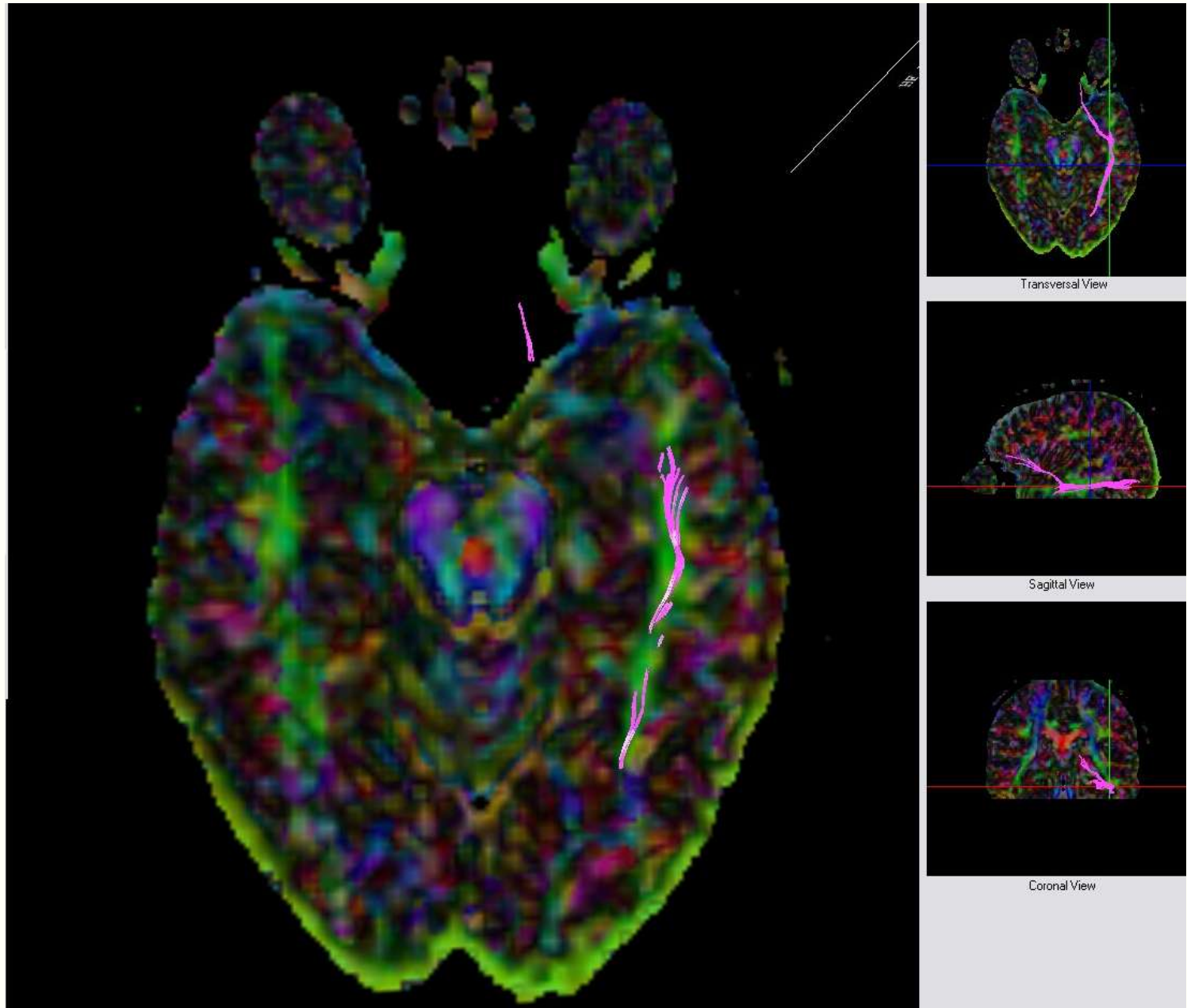


Coronal View

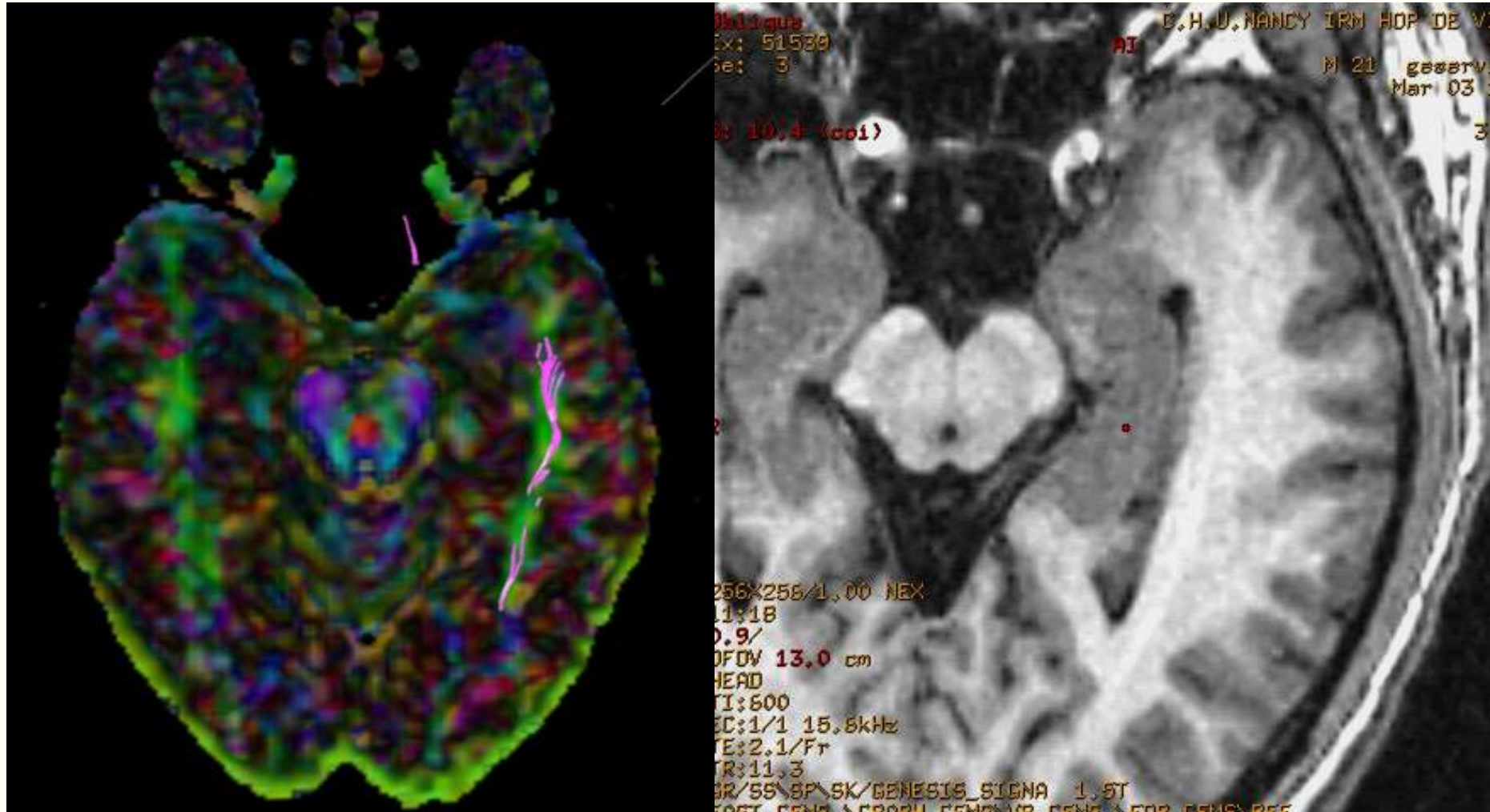
Faisceau Arqué



F. Fronto-Occipital inférieur



inférieur



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4^{ème} edition 2007

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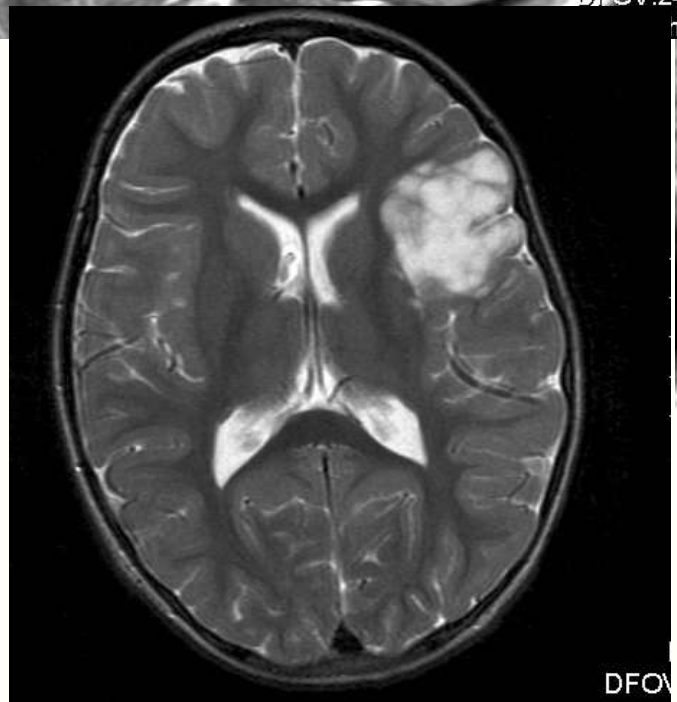
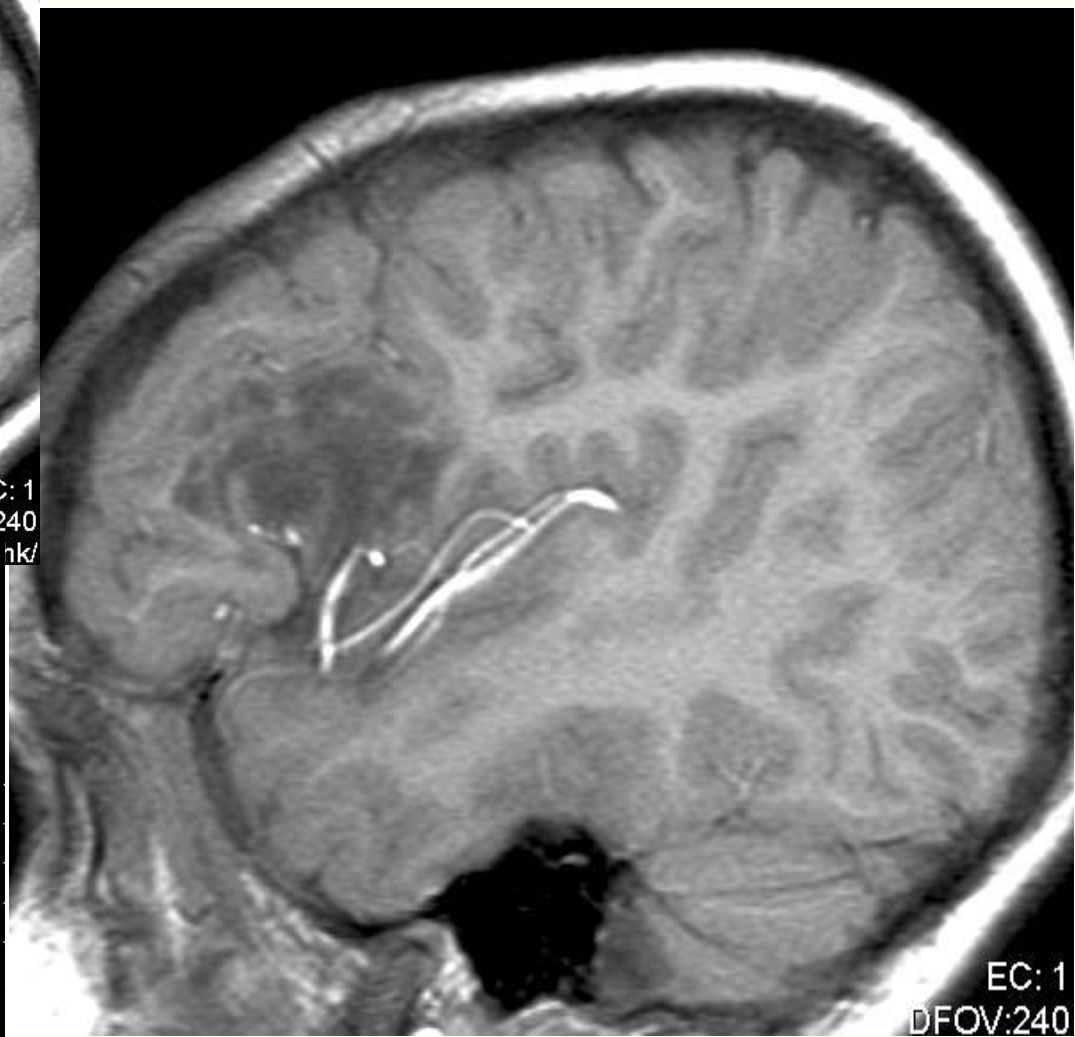
ATLAS OF CEREBRAL SULCI

K Ono, S Kubic, T Naidich *Thieme 1989*

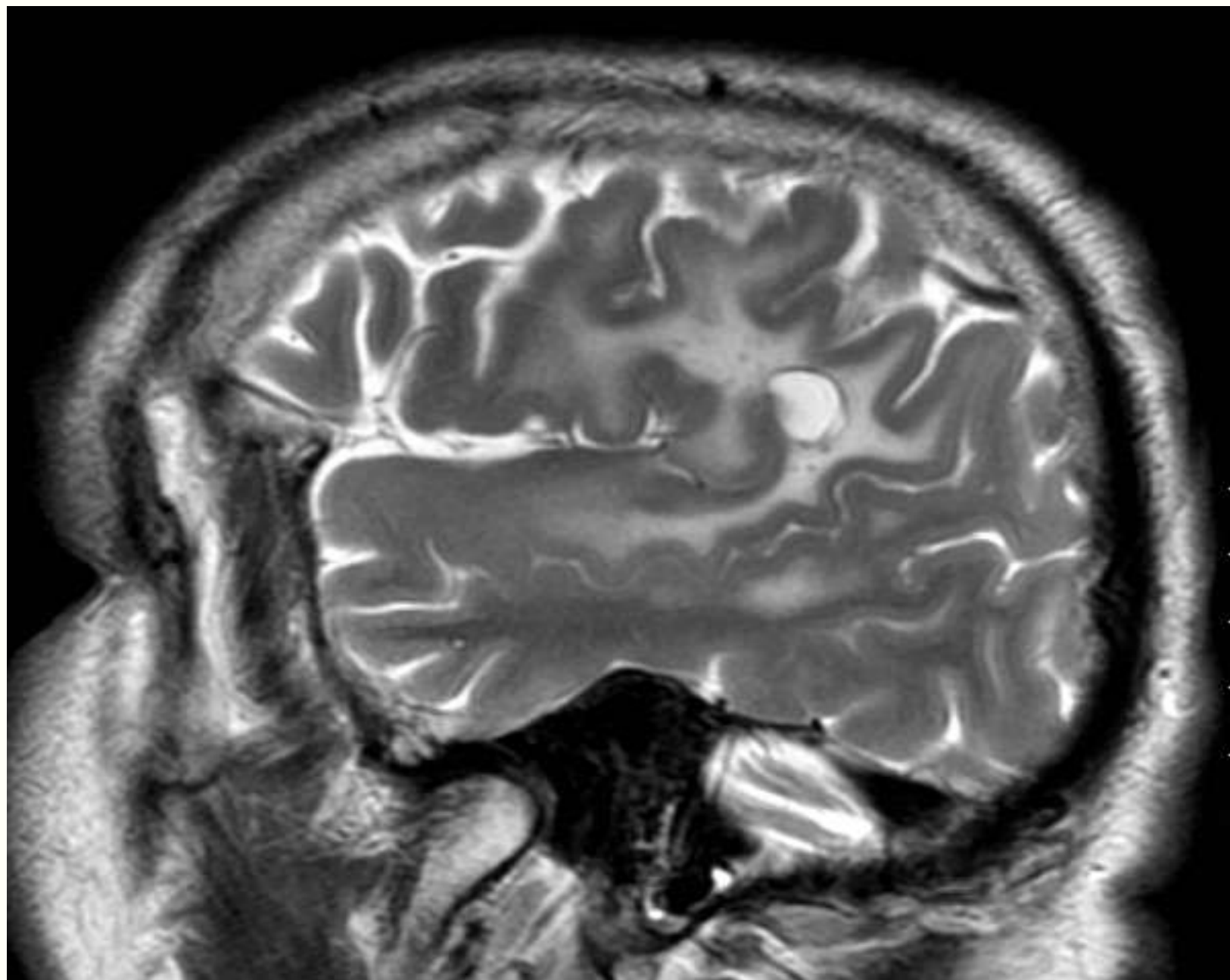
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M. Braun et coll *J. de Radiologie Suppl FMC Juin 2000*

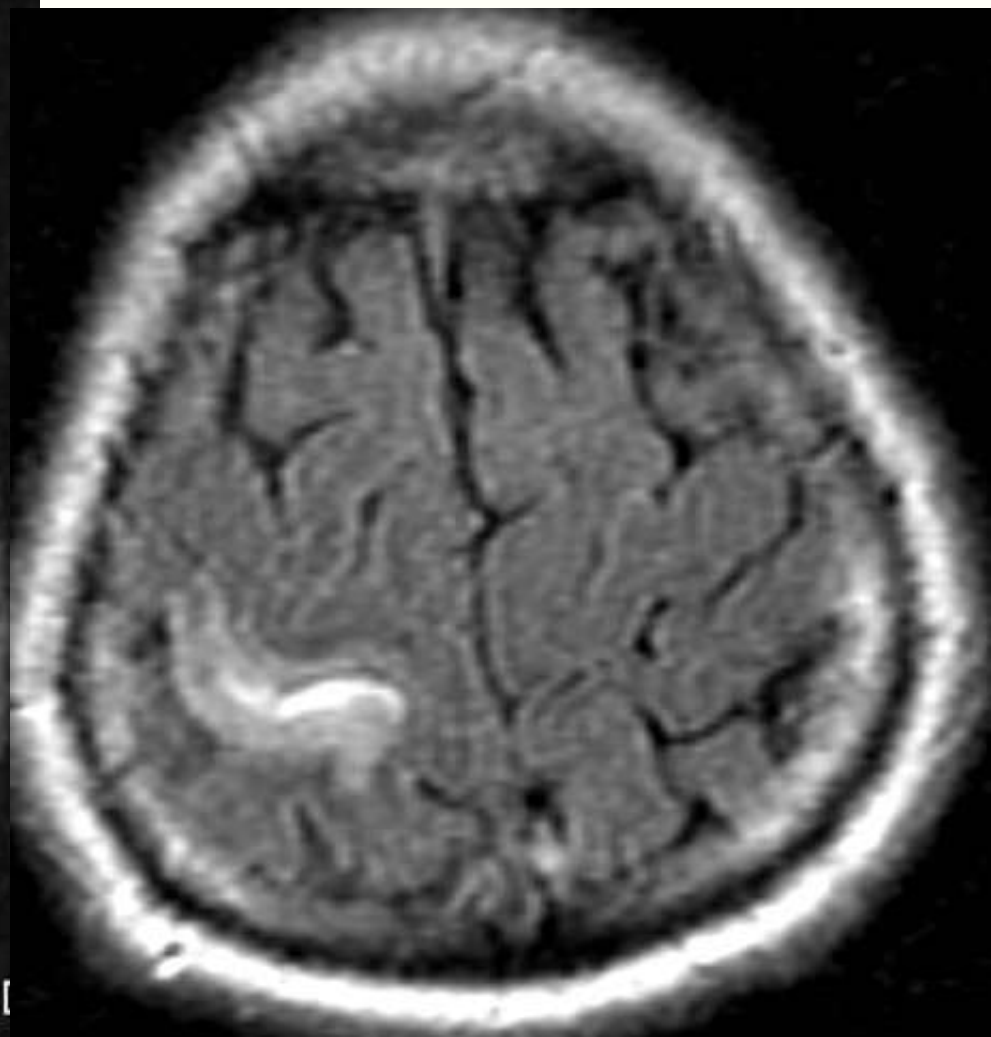
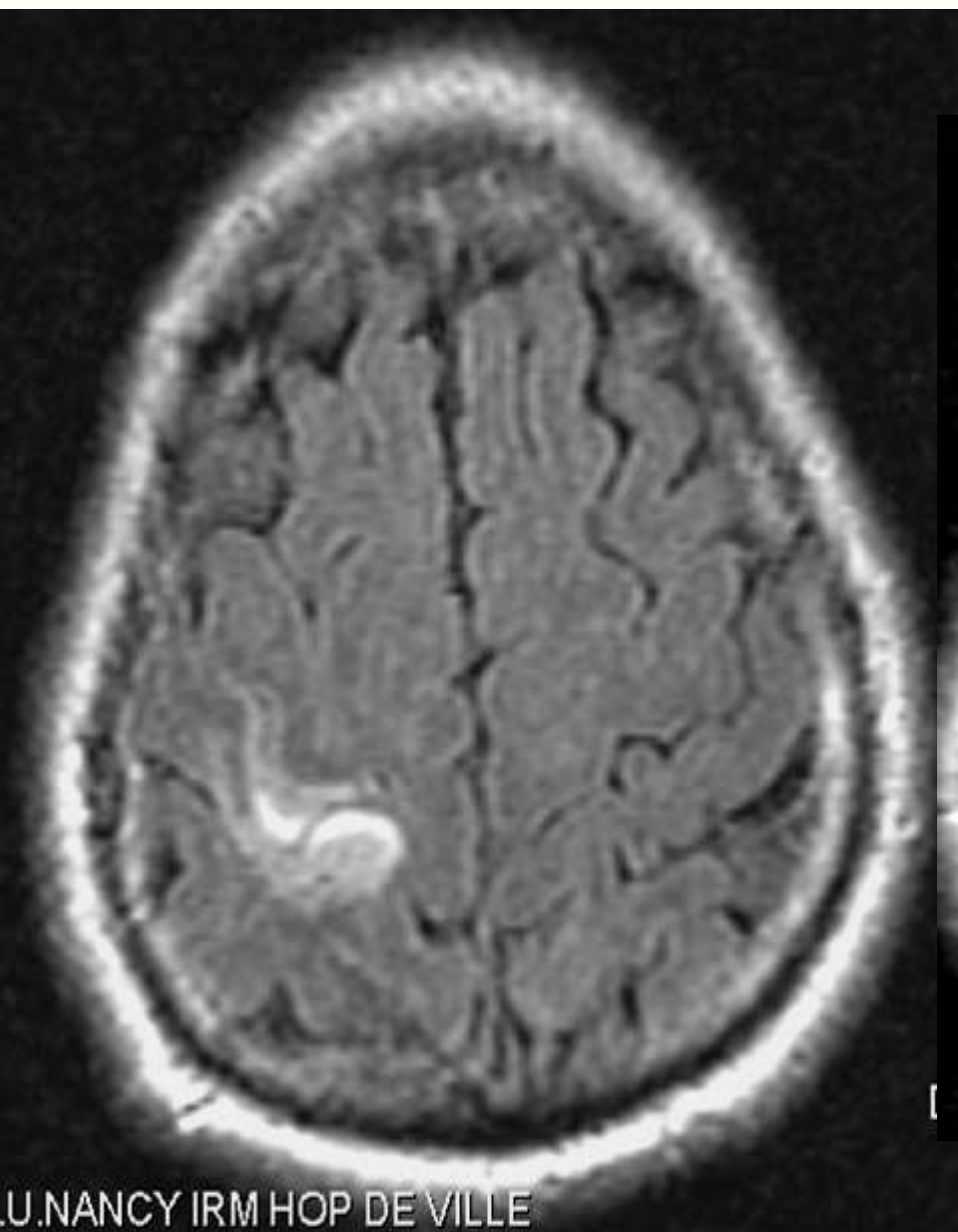
CAS 1



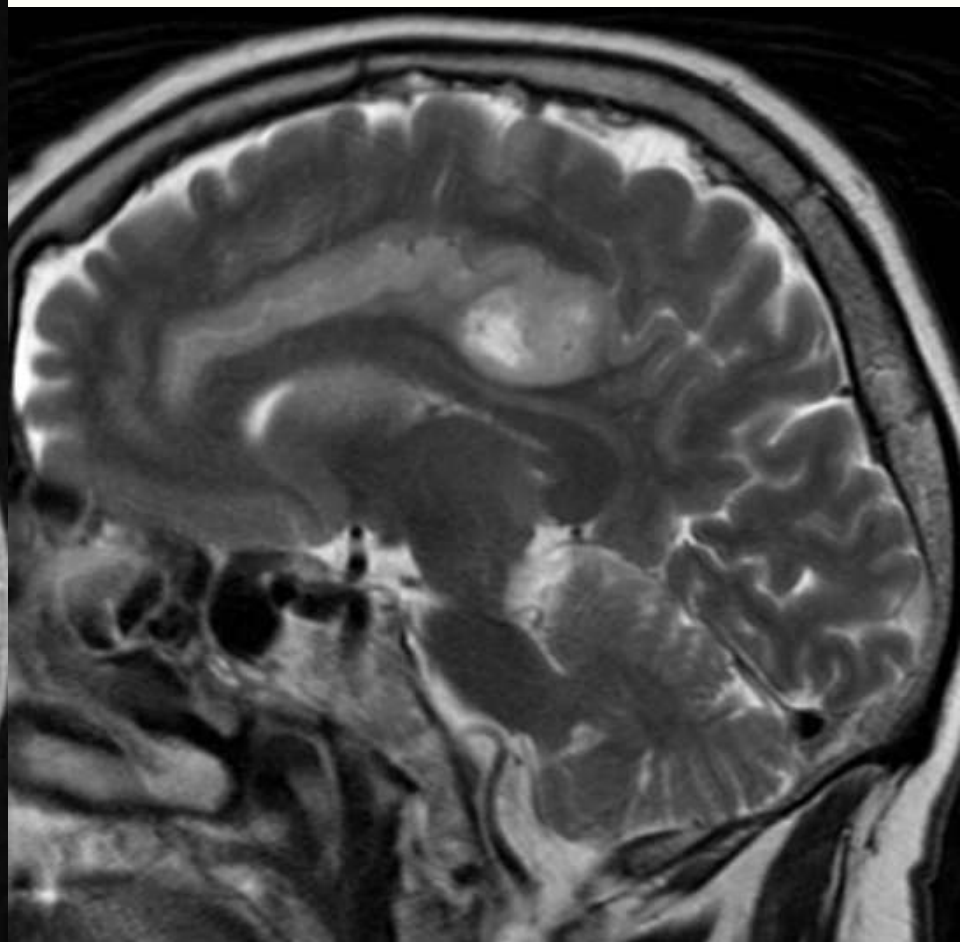
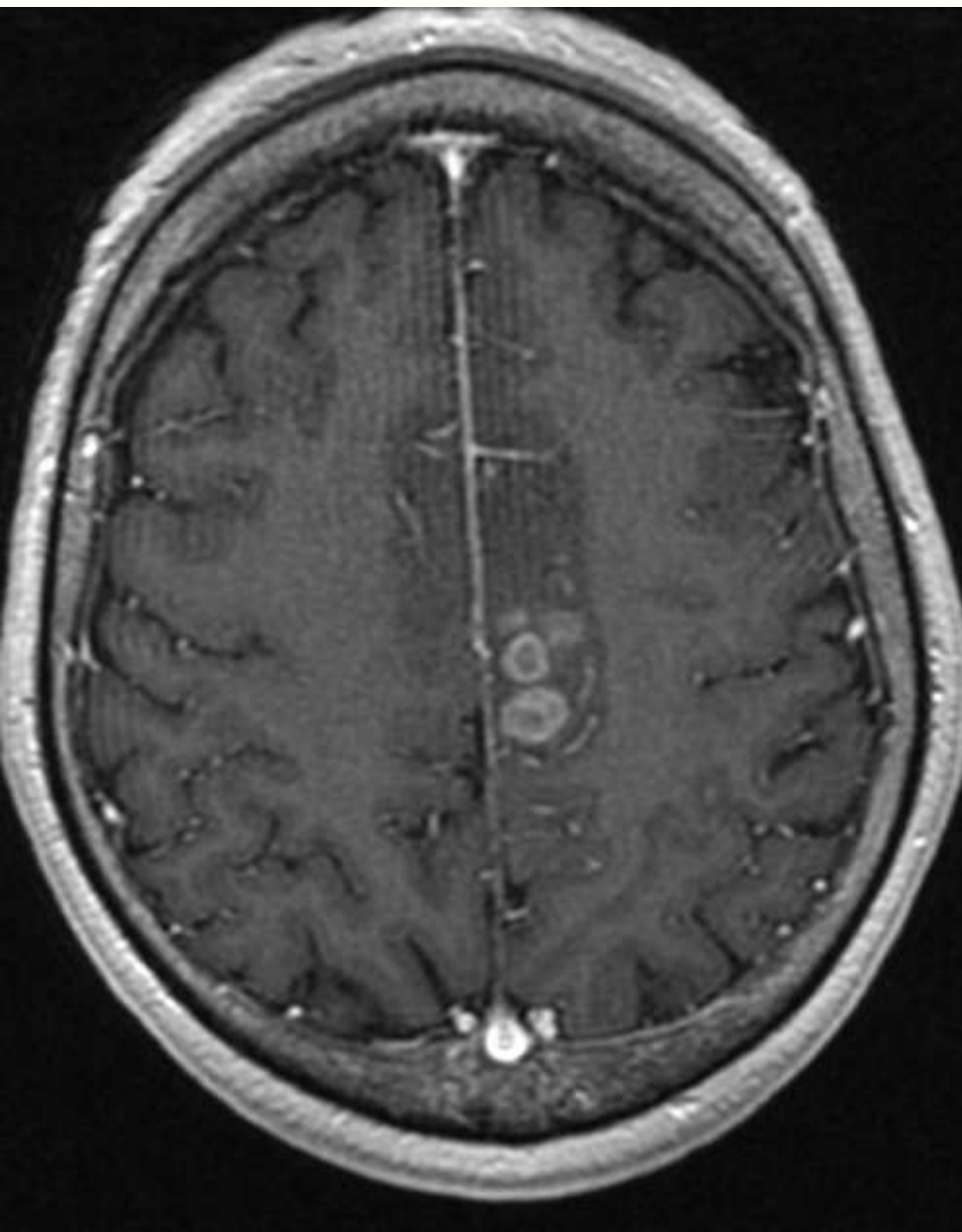
CAS 2



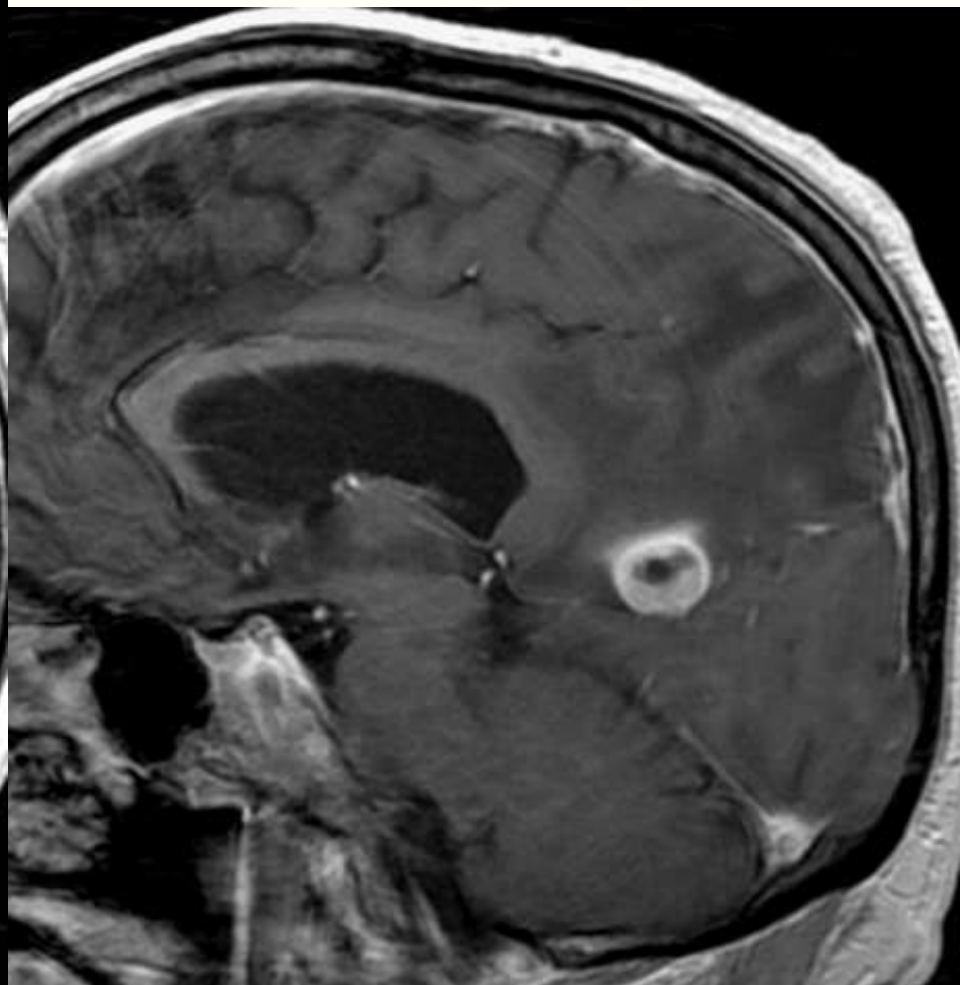
CAS 3



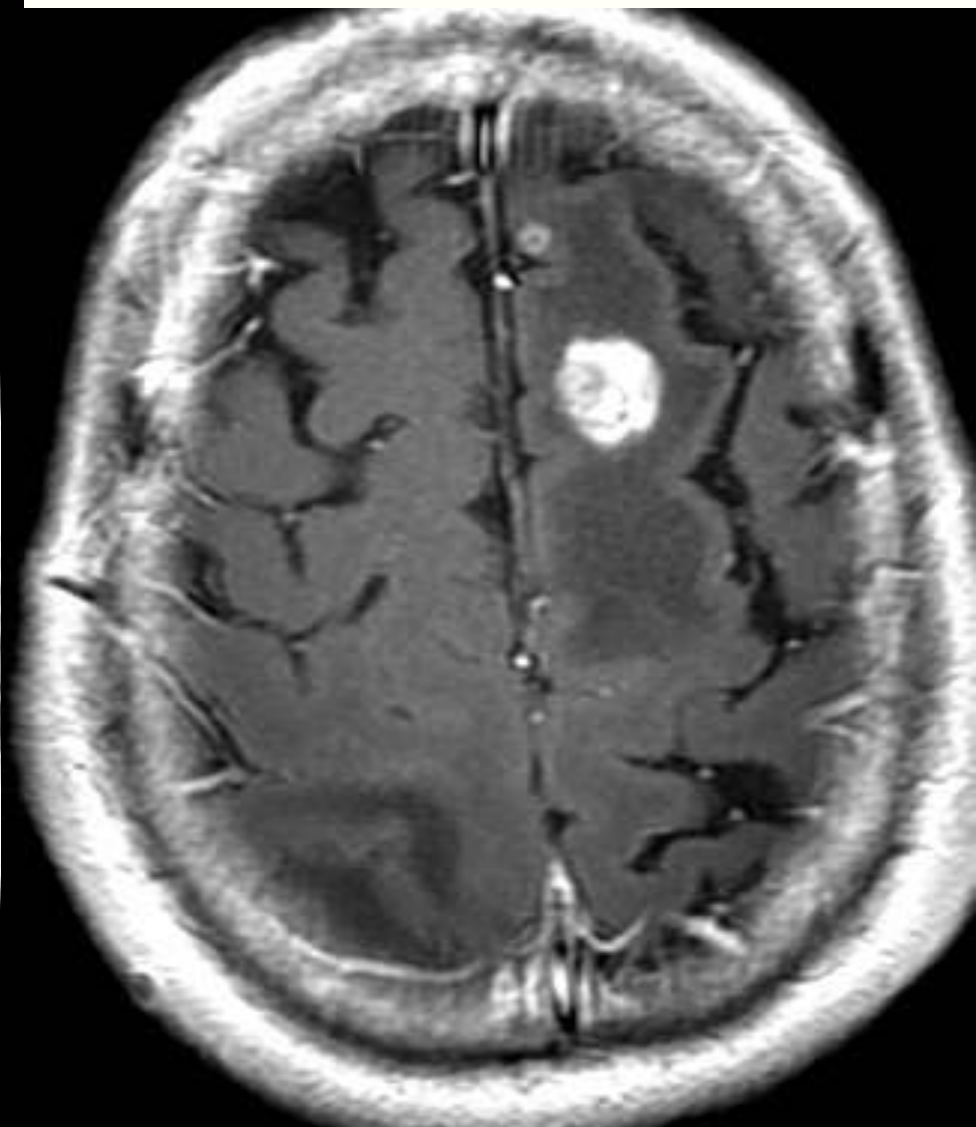
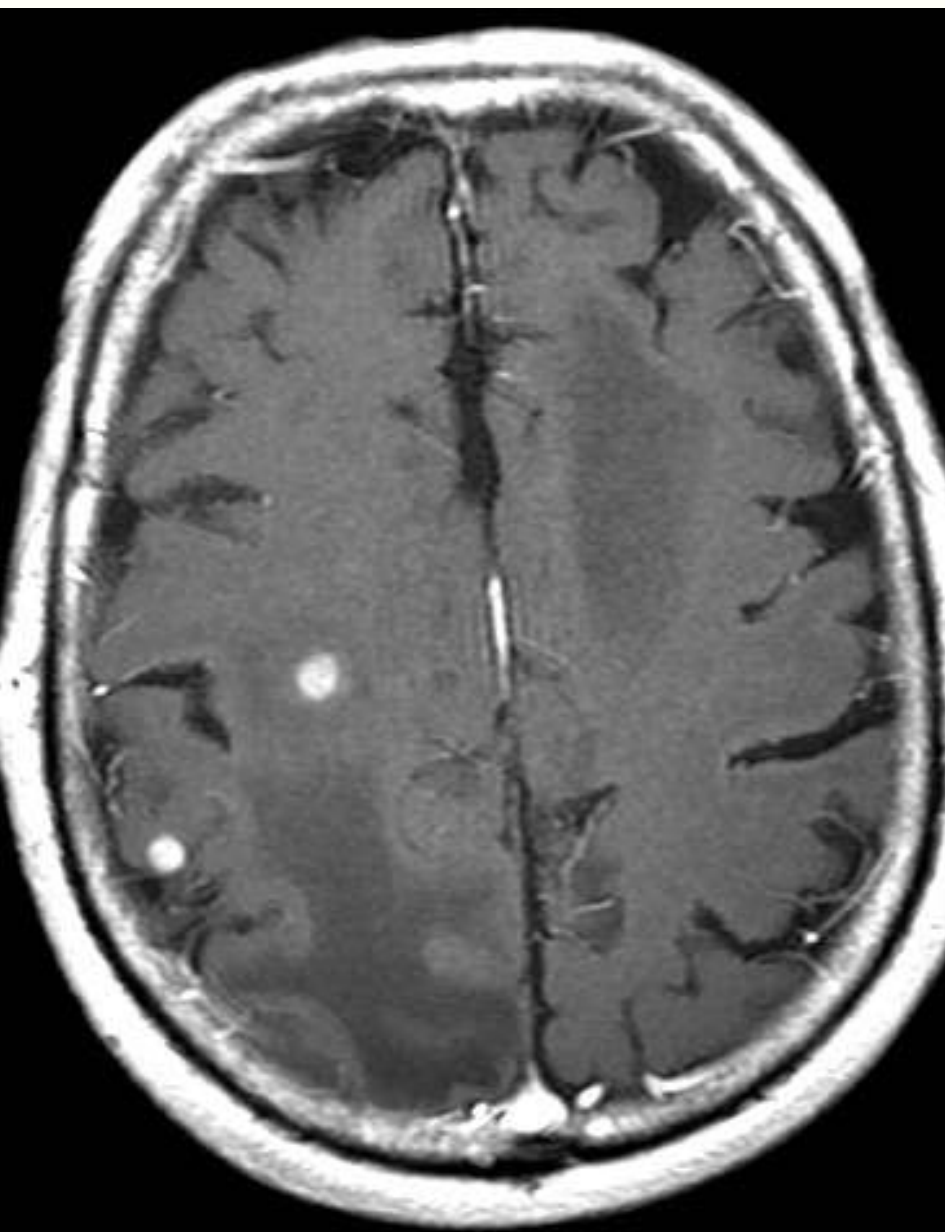
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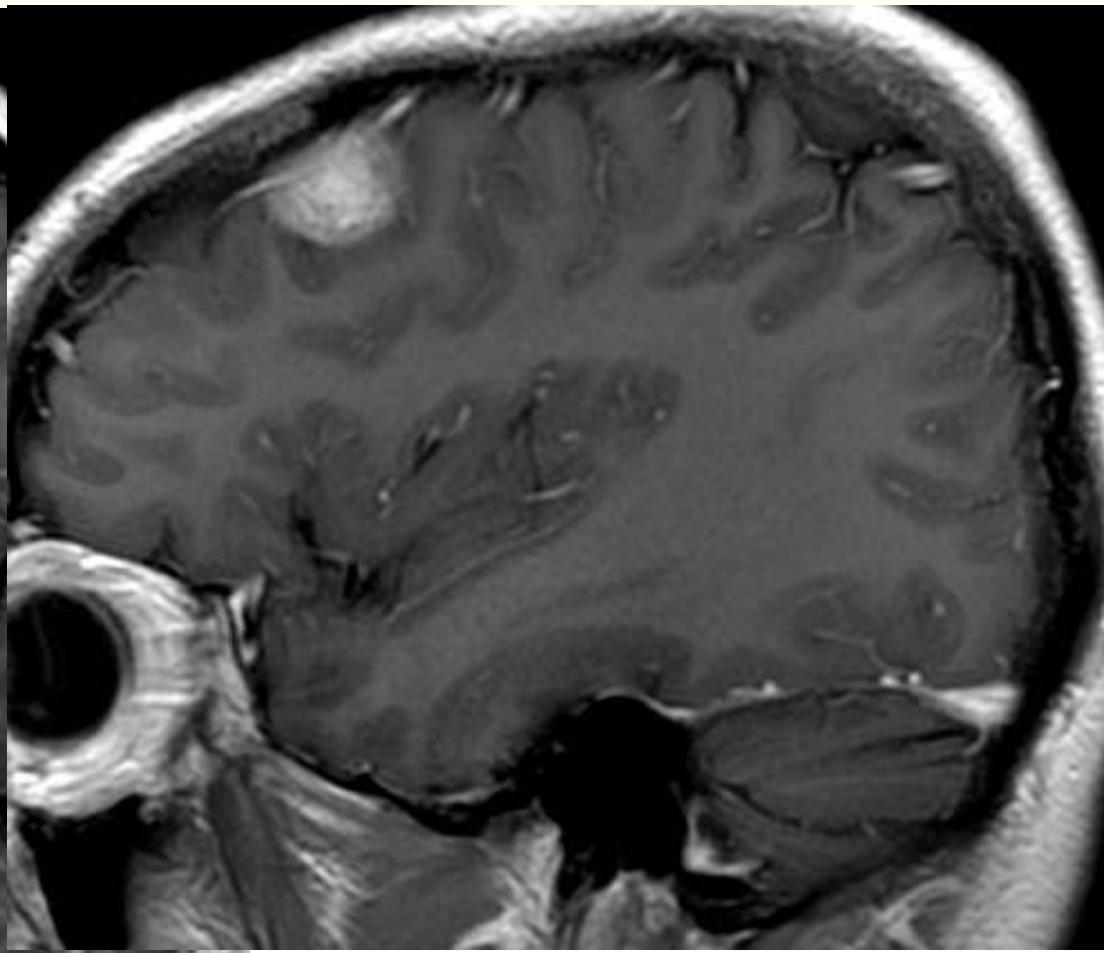
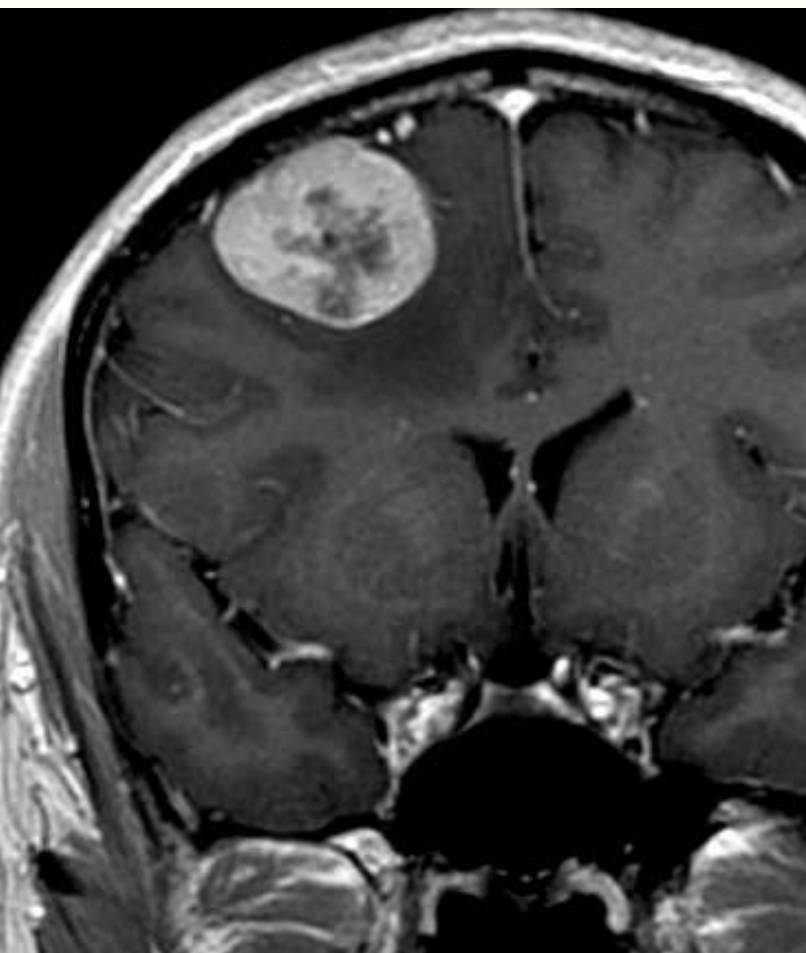
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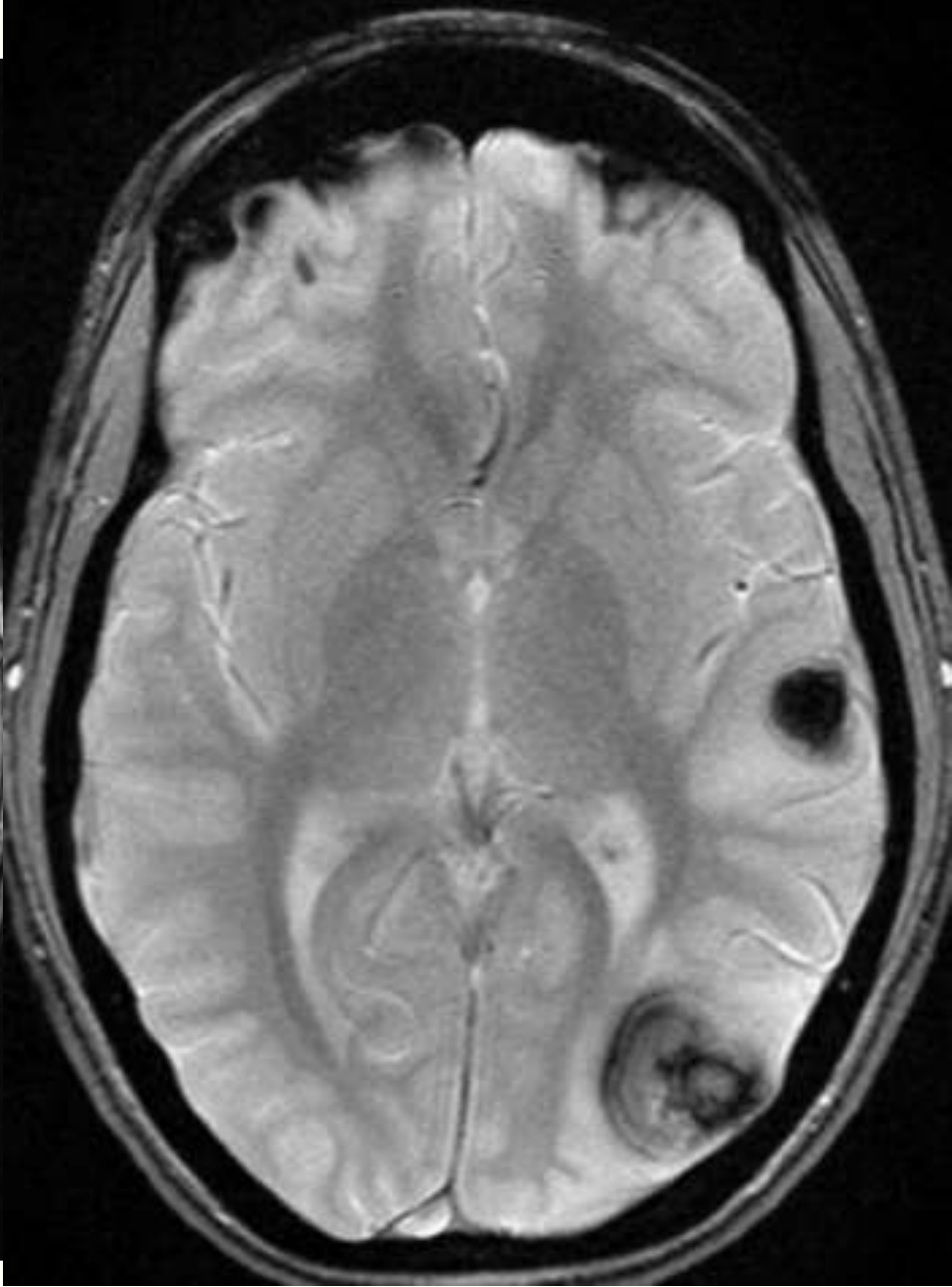
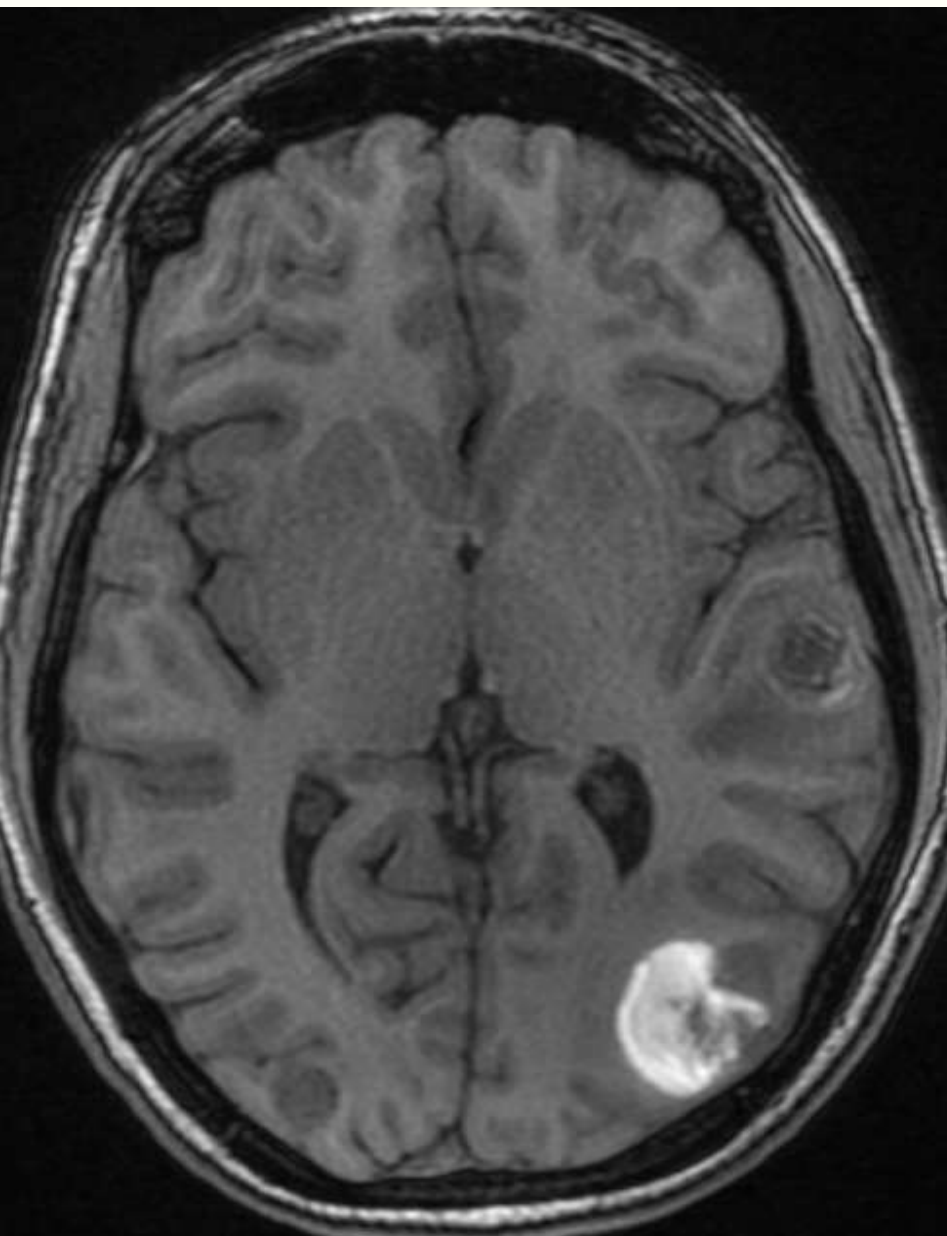
CAS 6



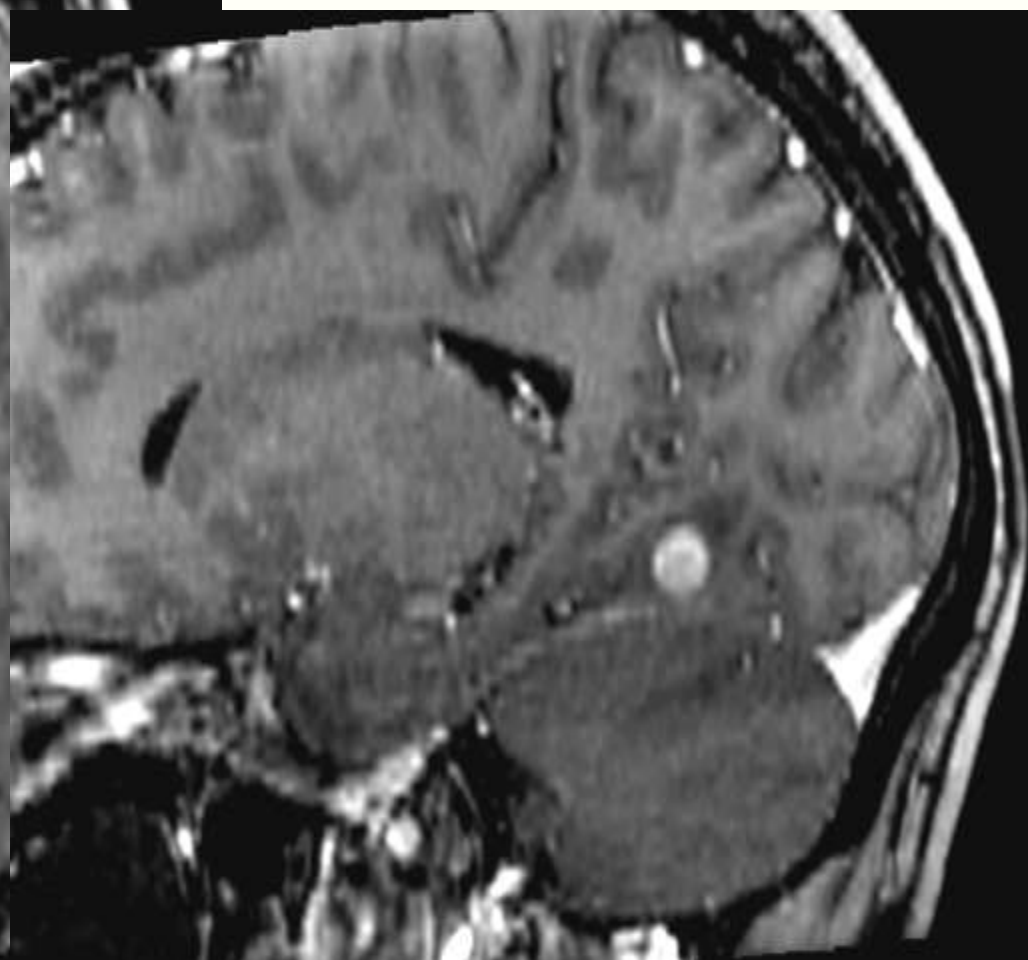
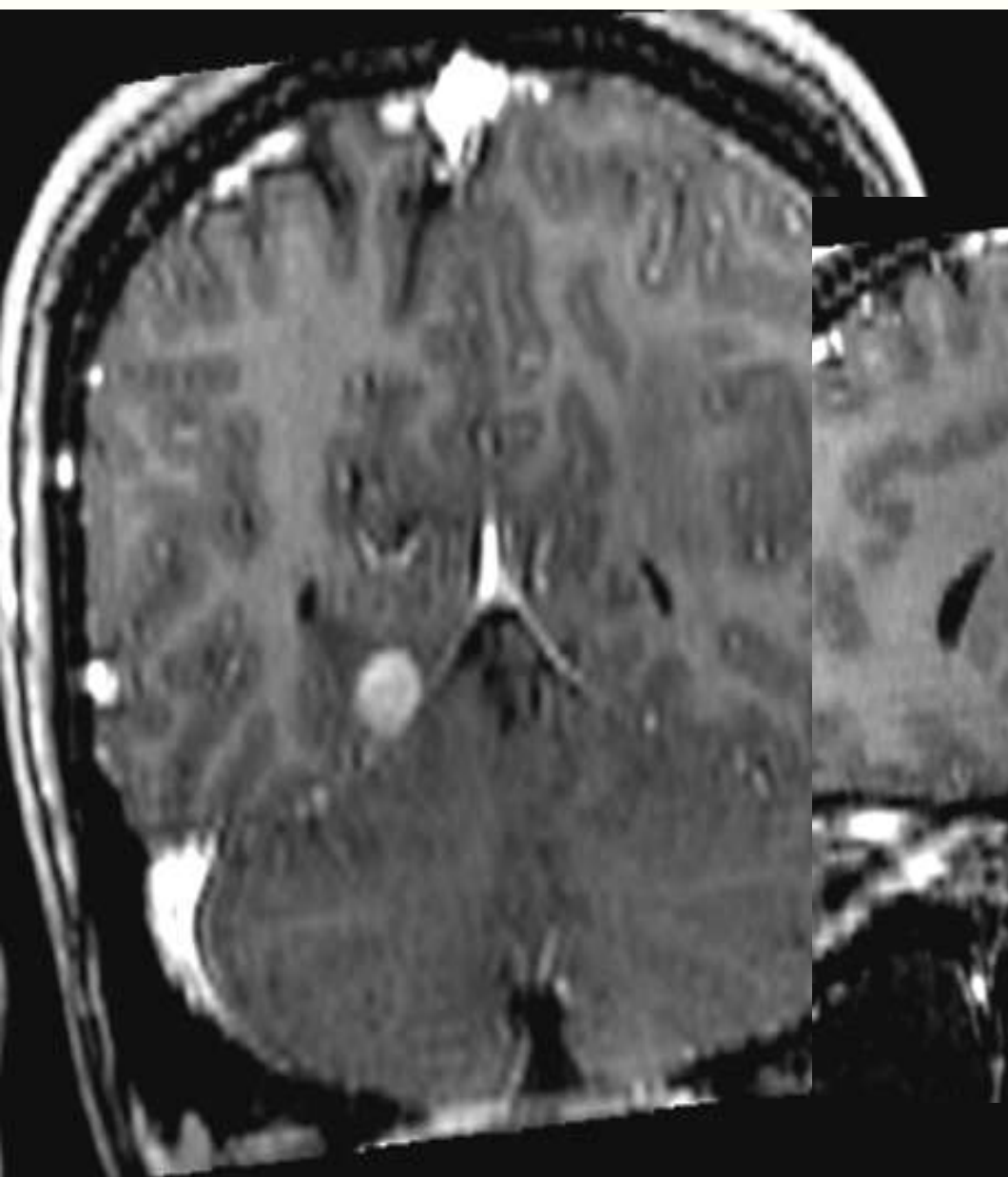
CAS 7



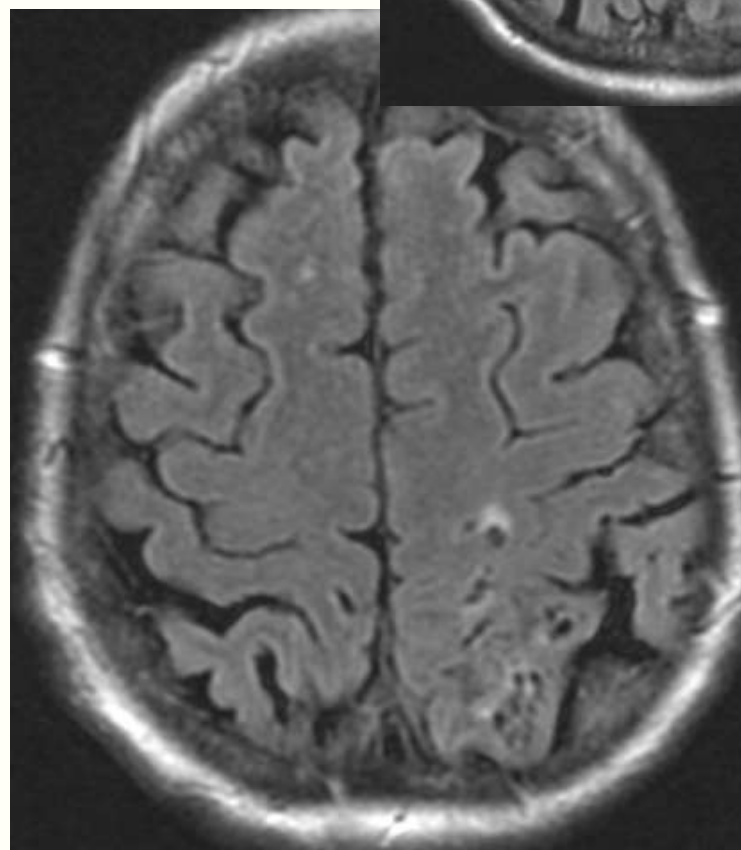
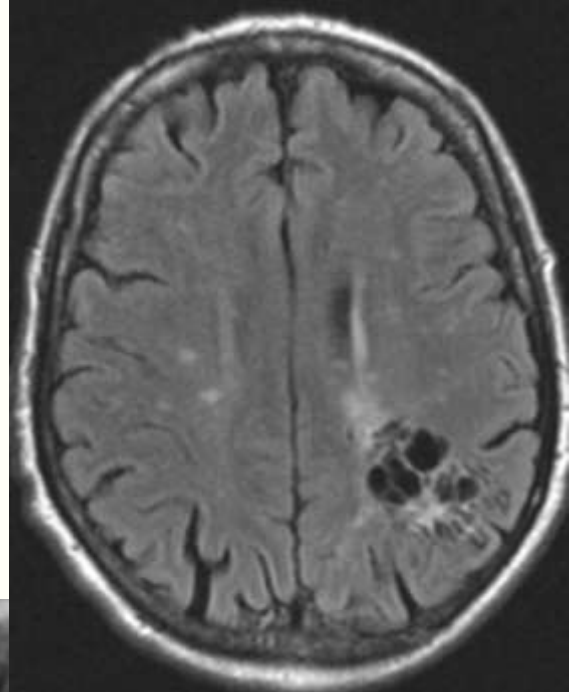
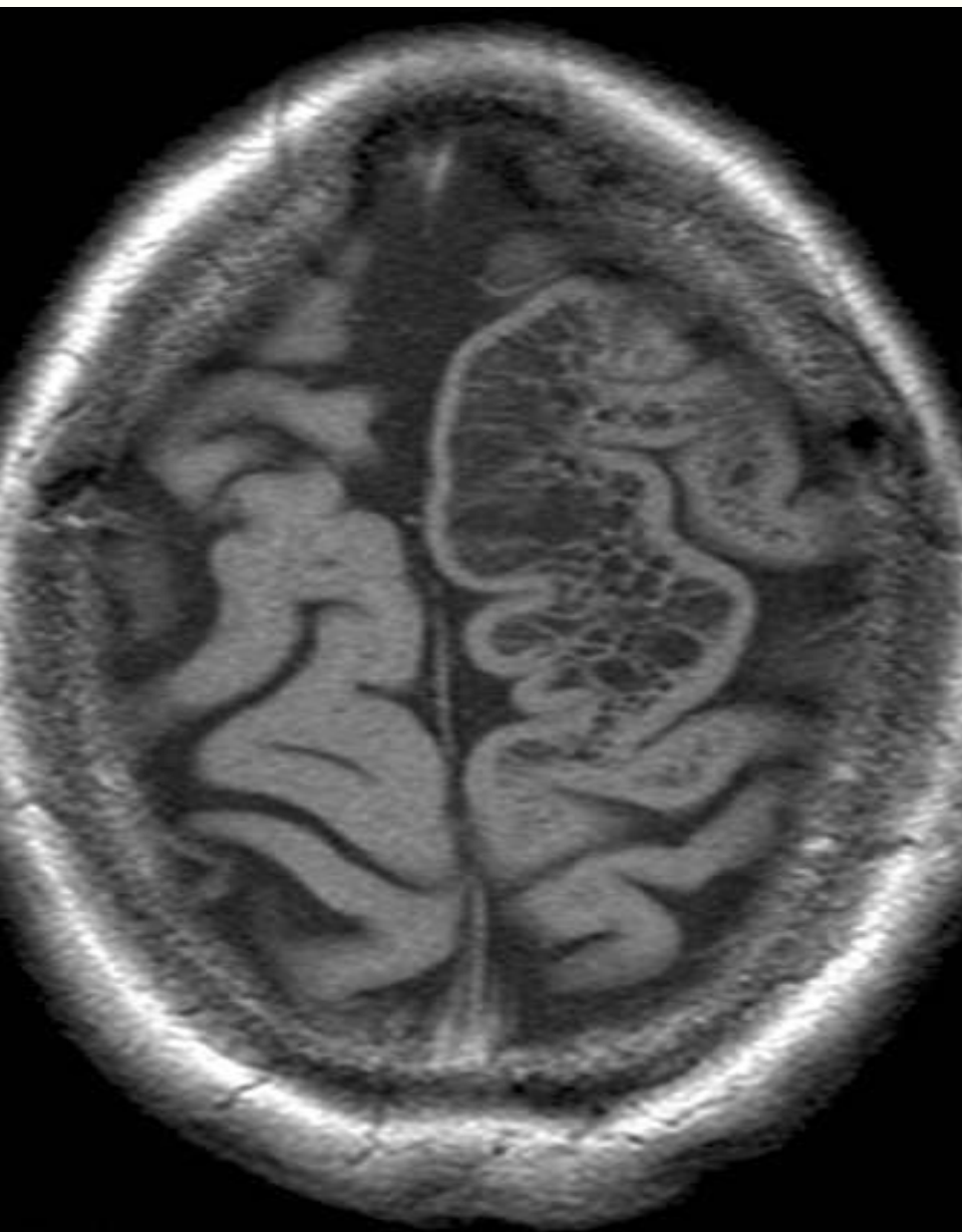
CAS 8



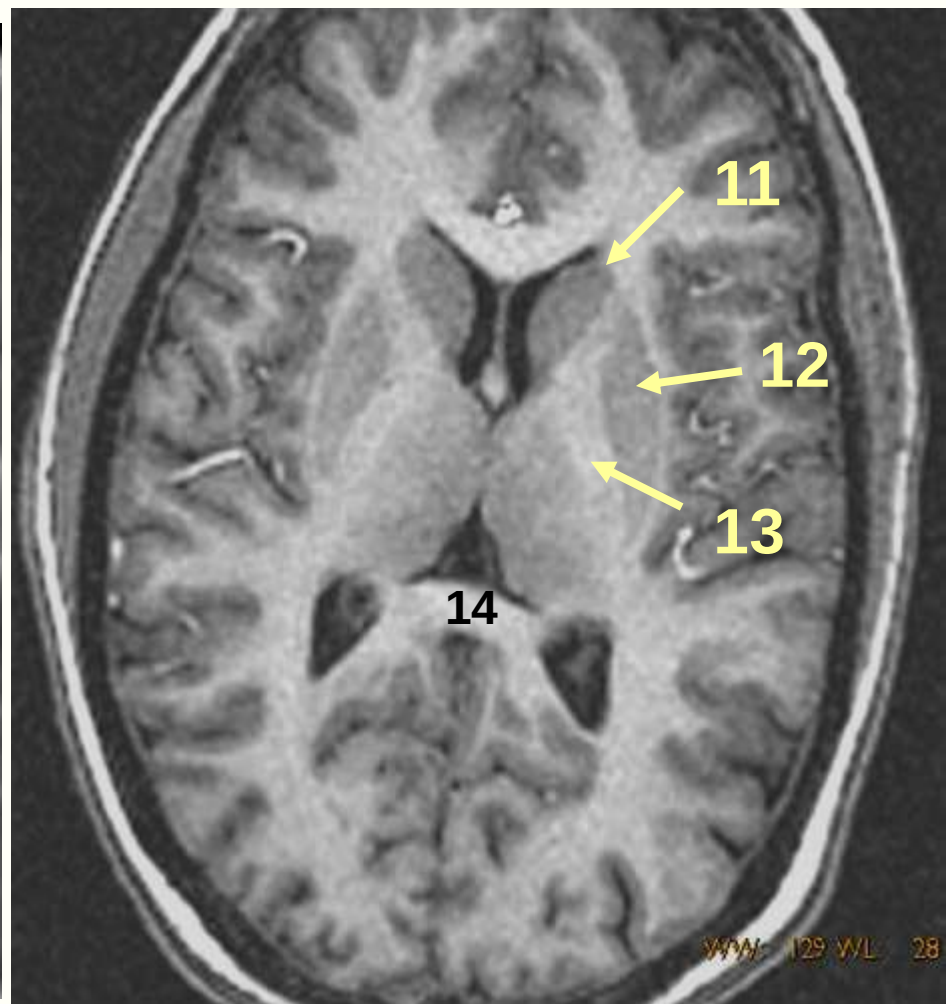
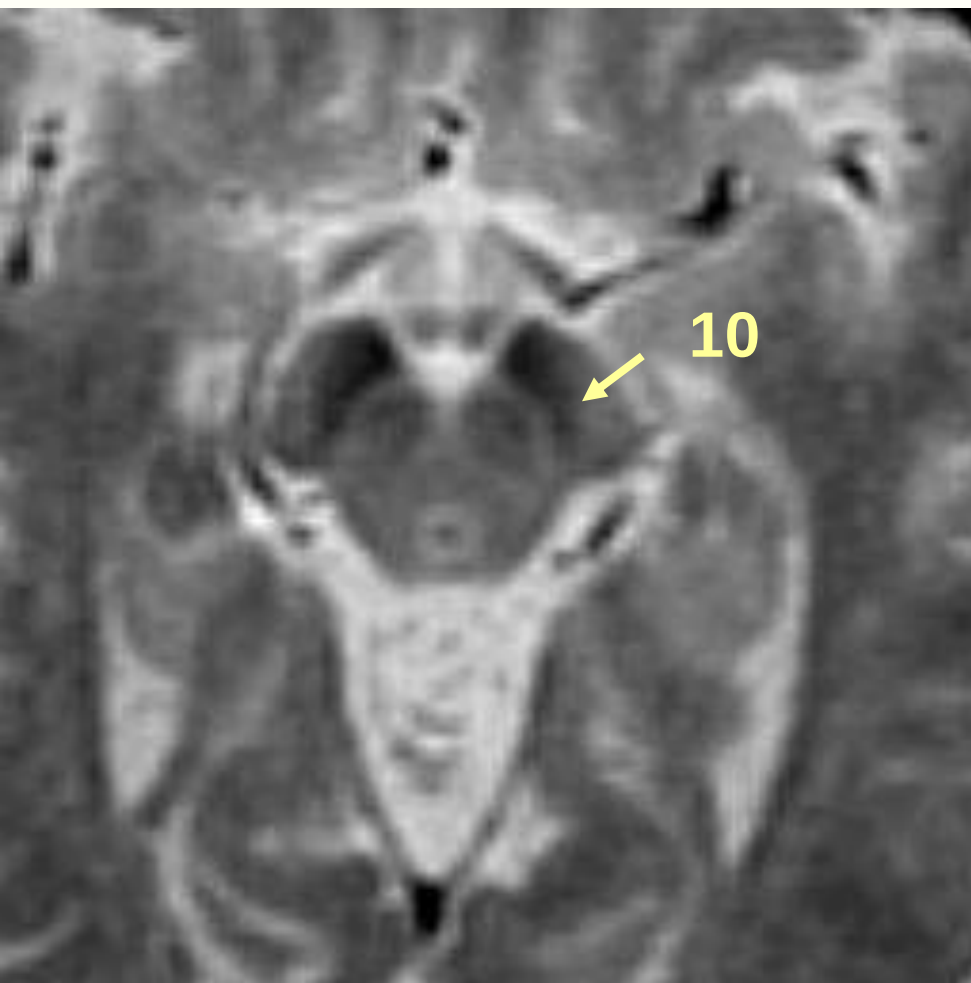
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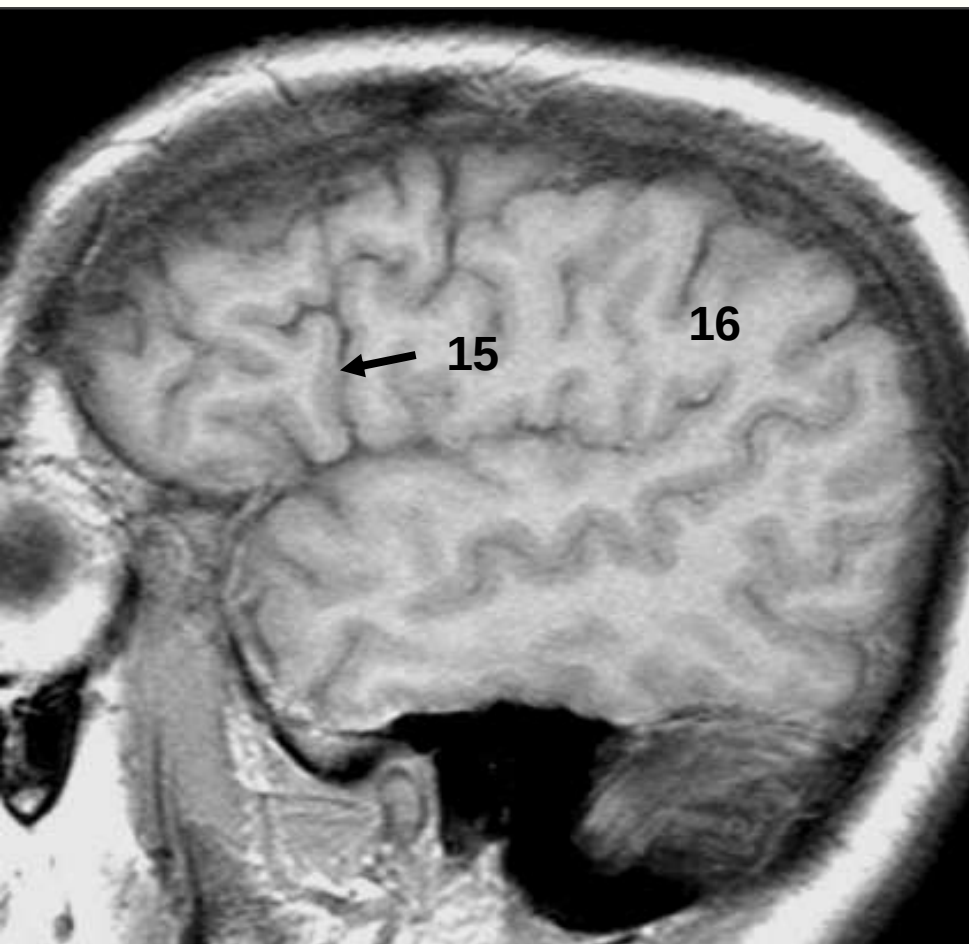
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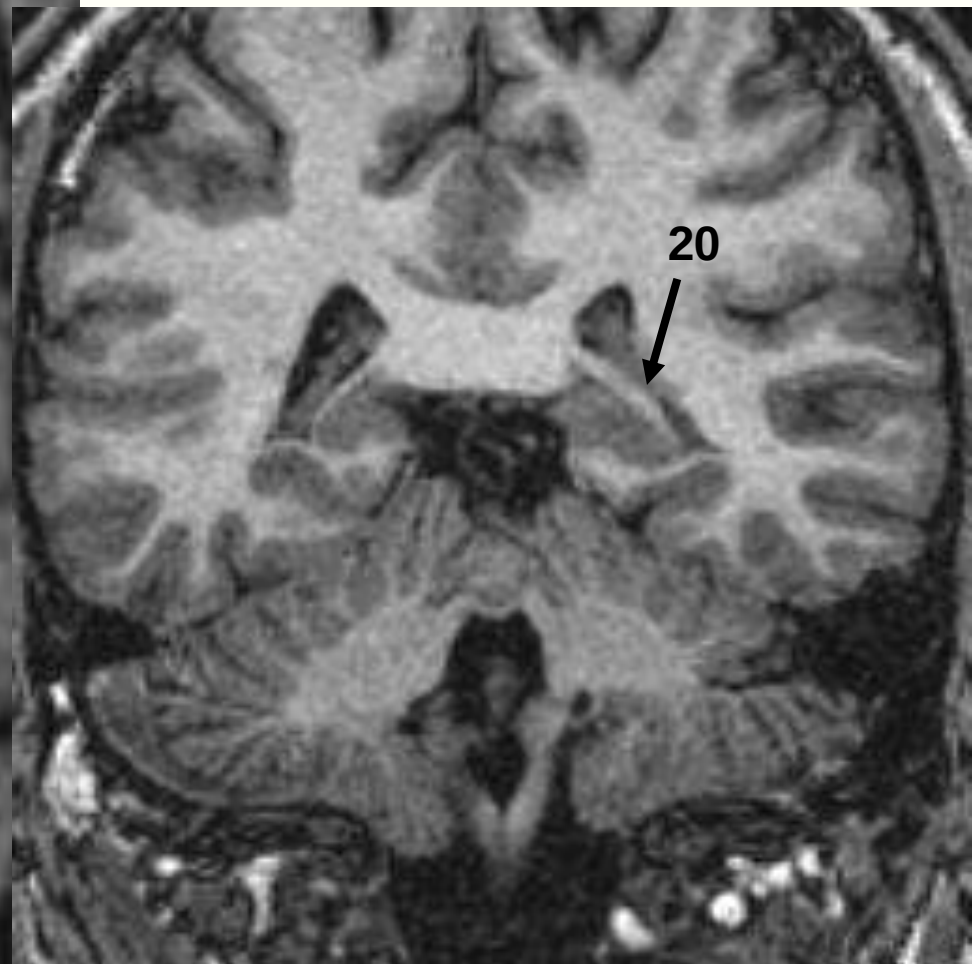
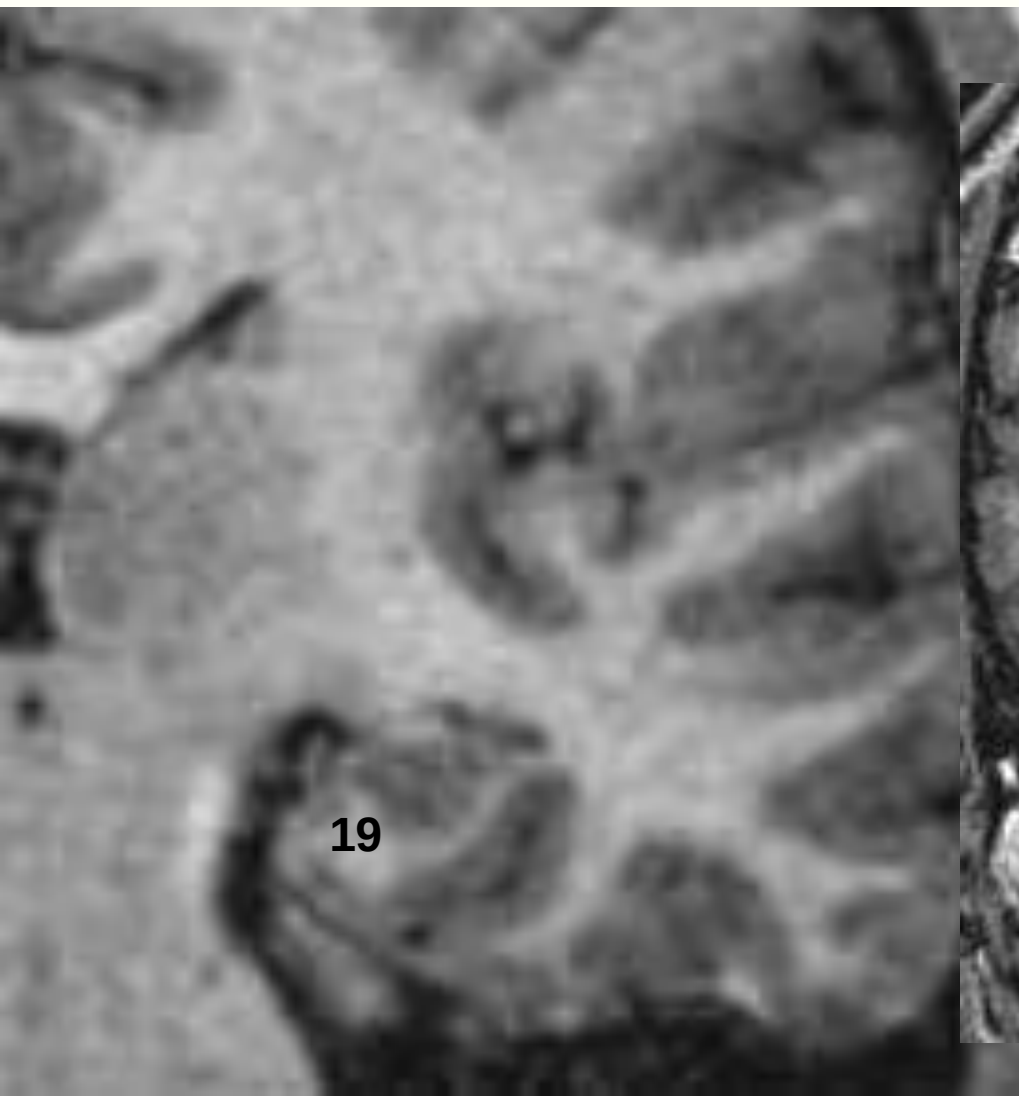
CAS 11



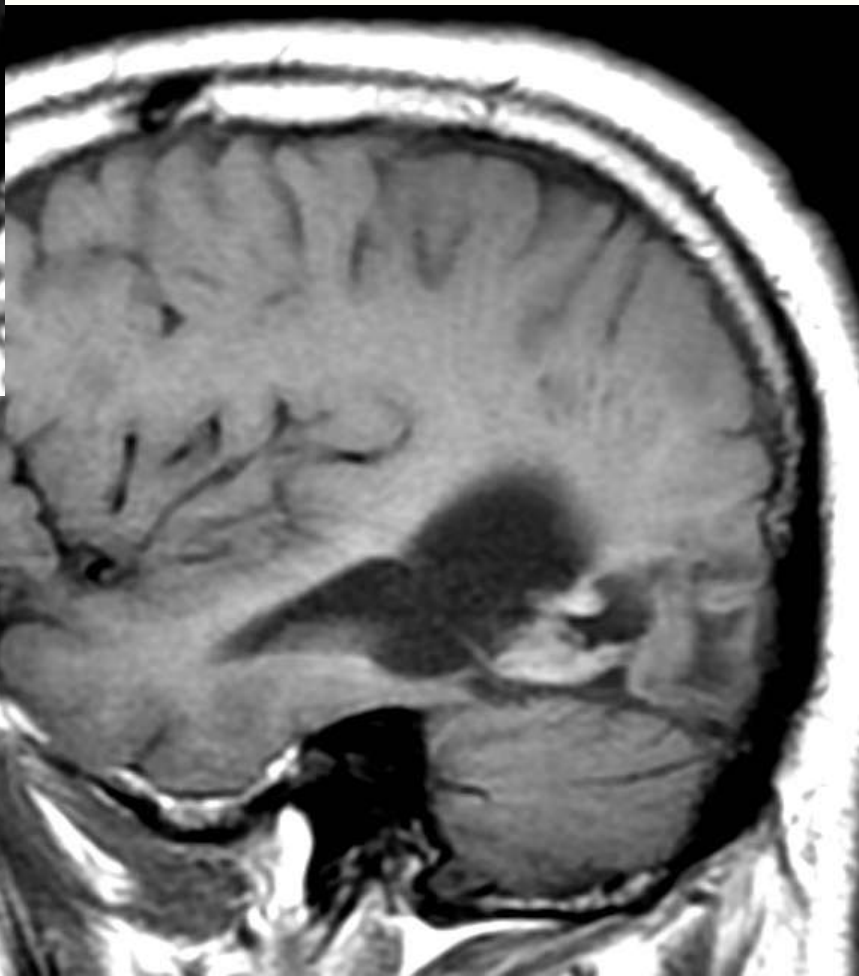
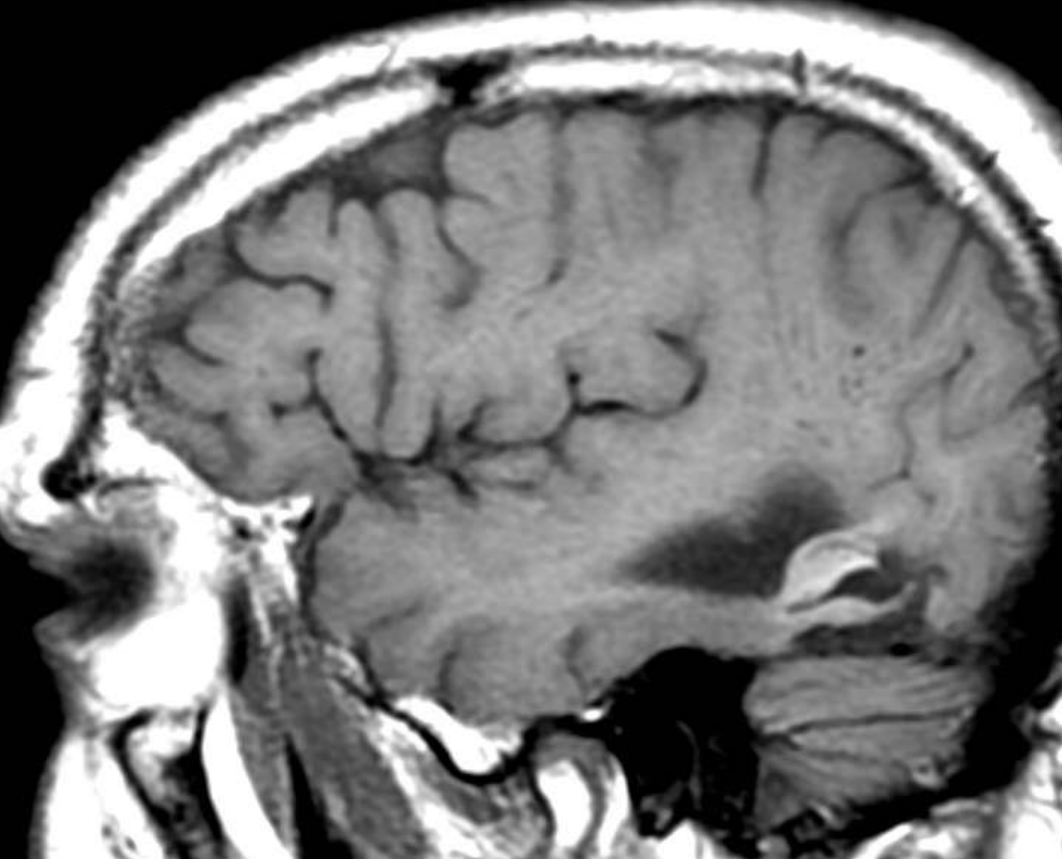
CAS 12



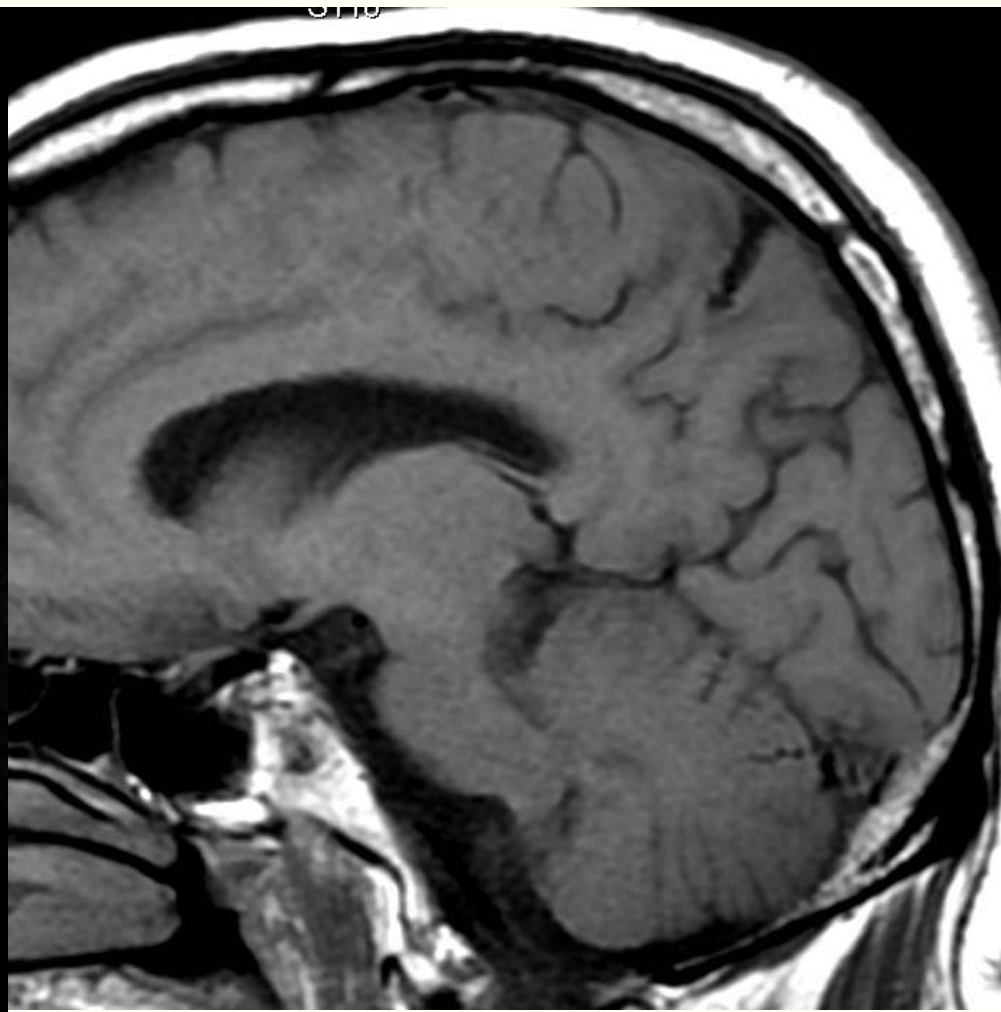
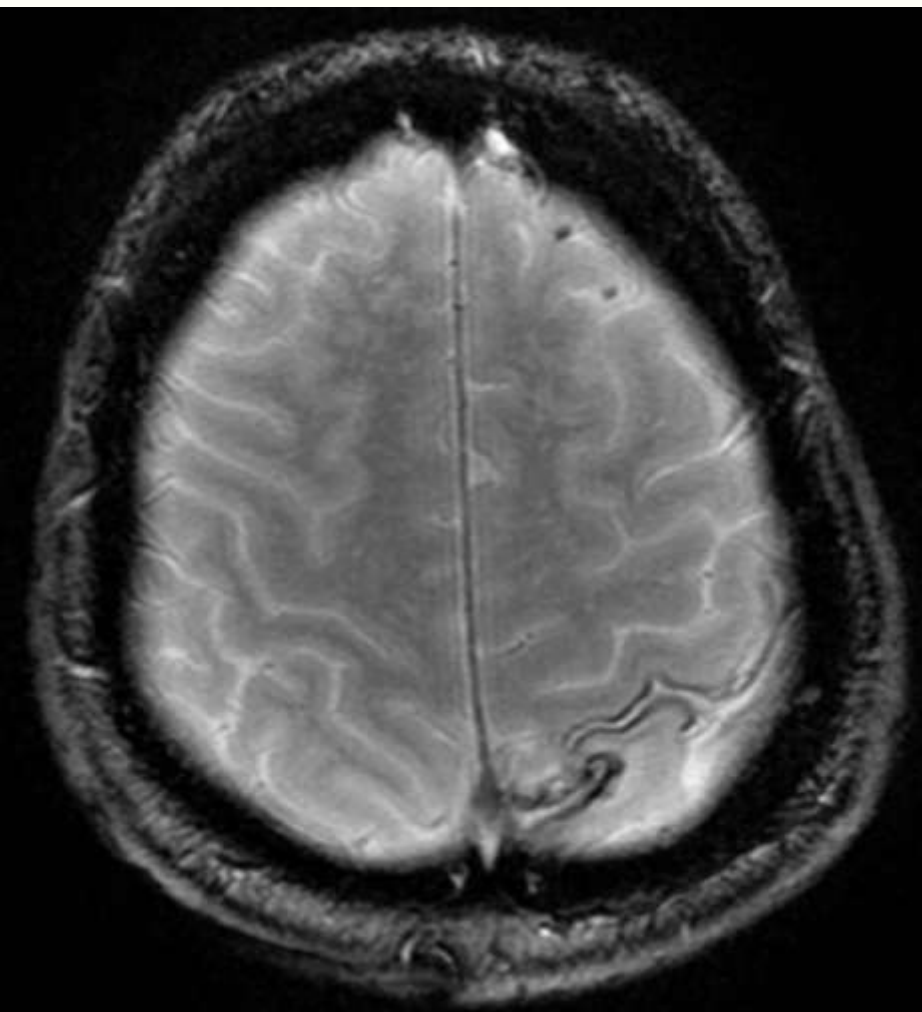
CAS 13



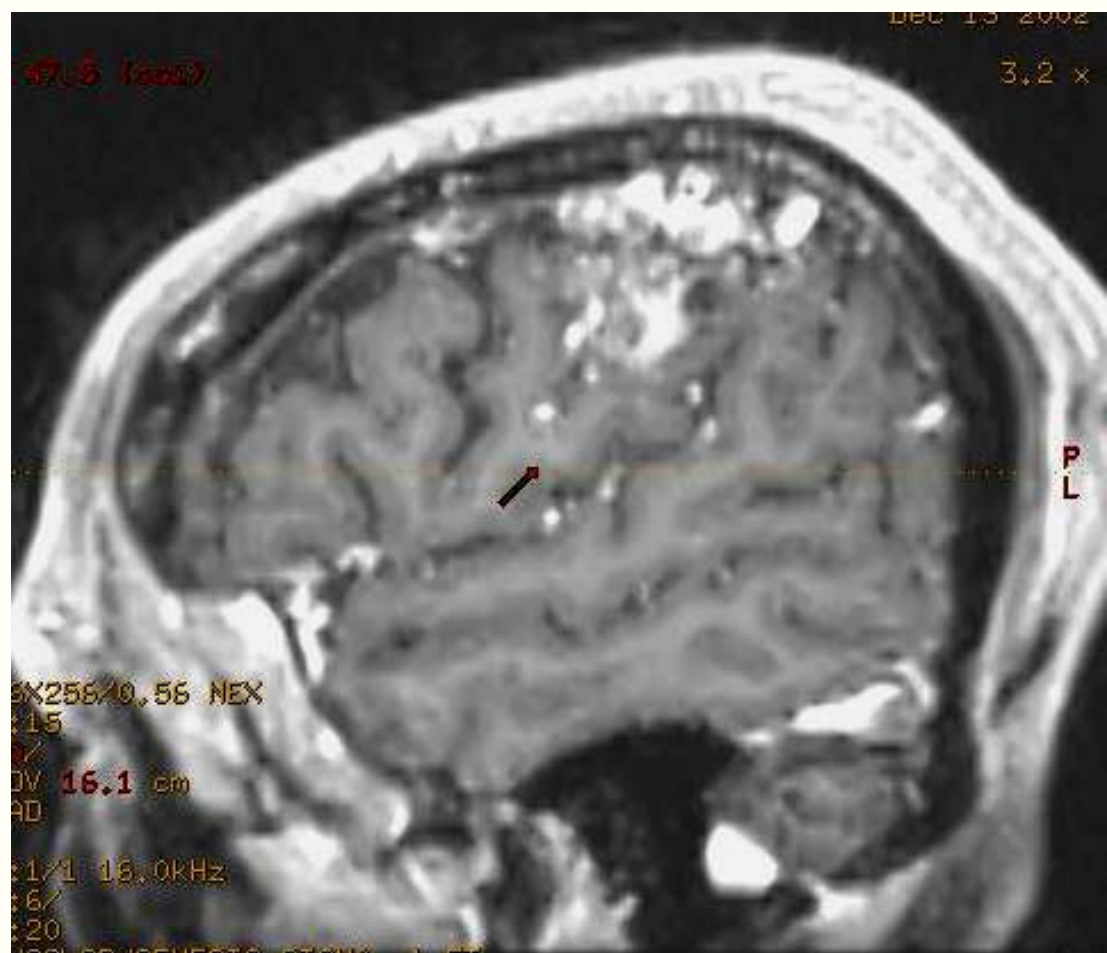
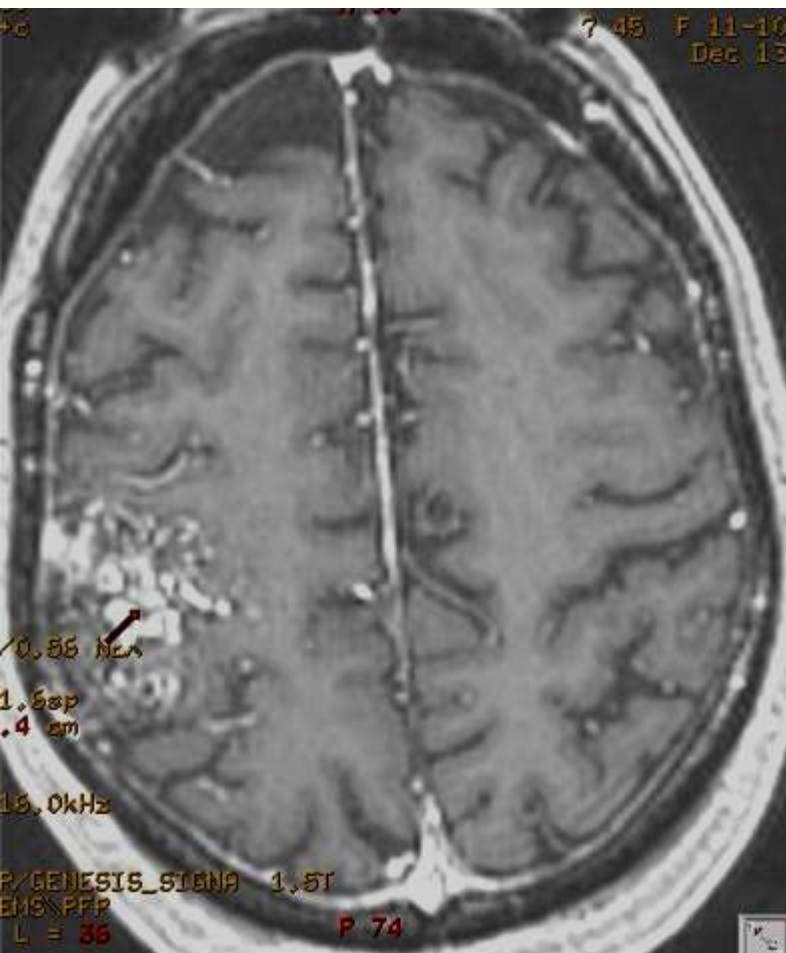
CAS 14



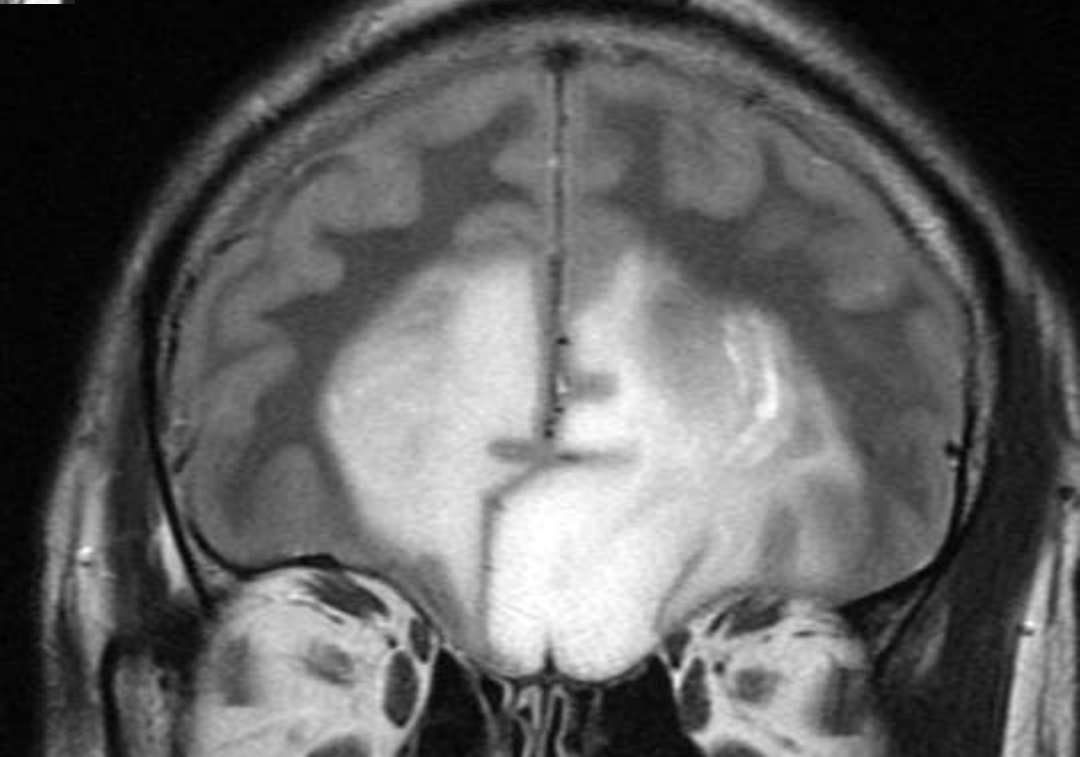
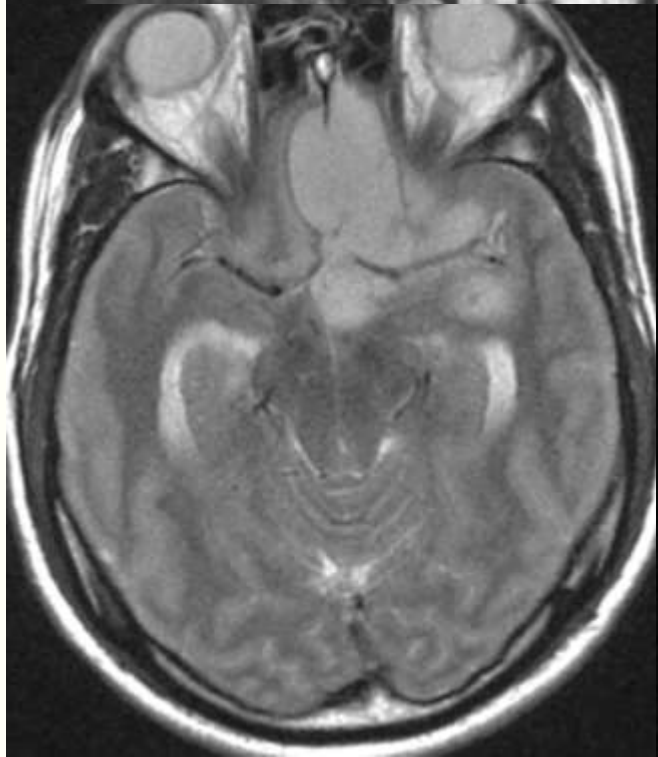
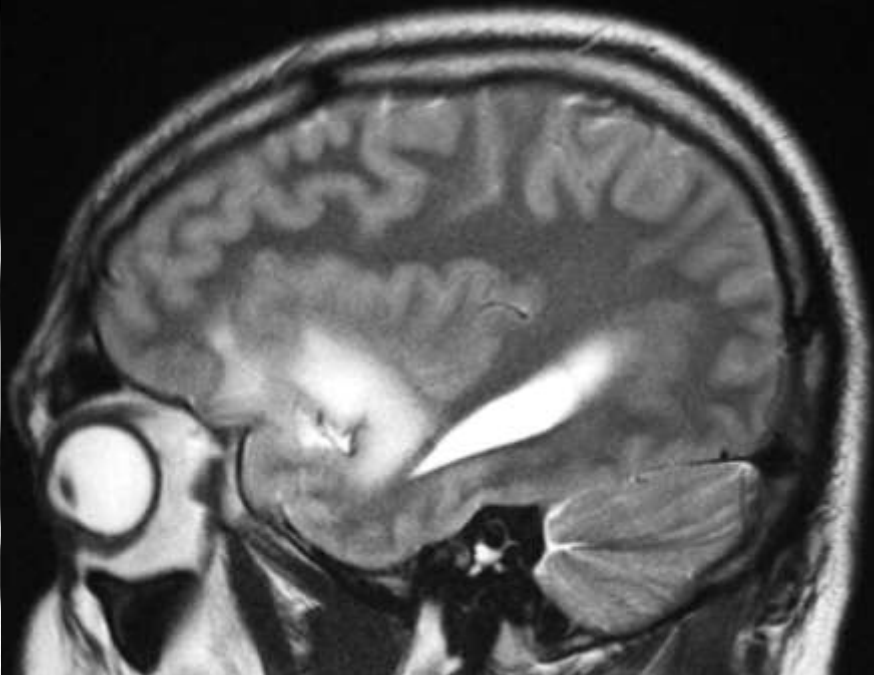
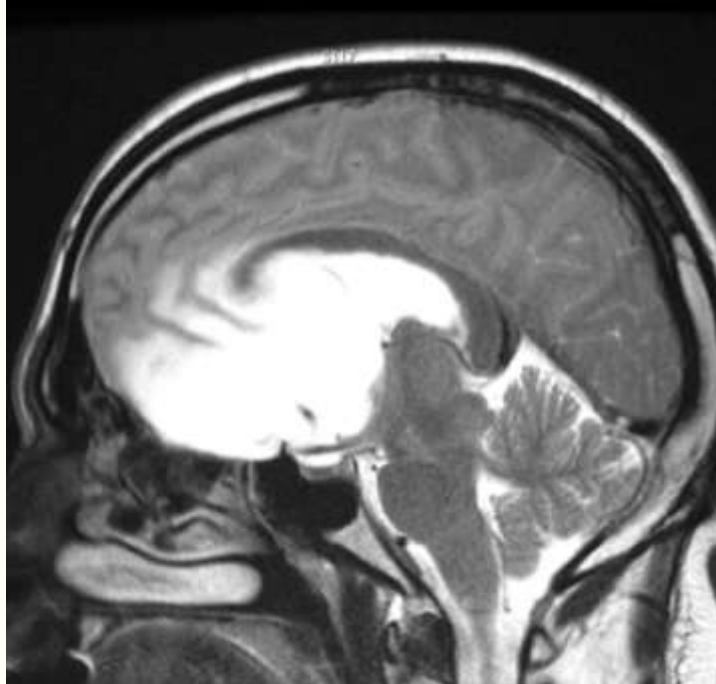
CAS 15



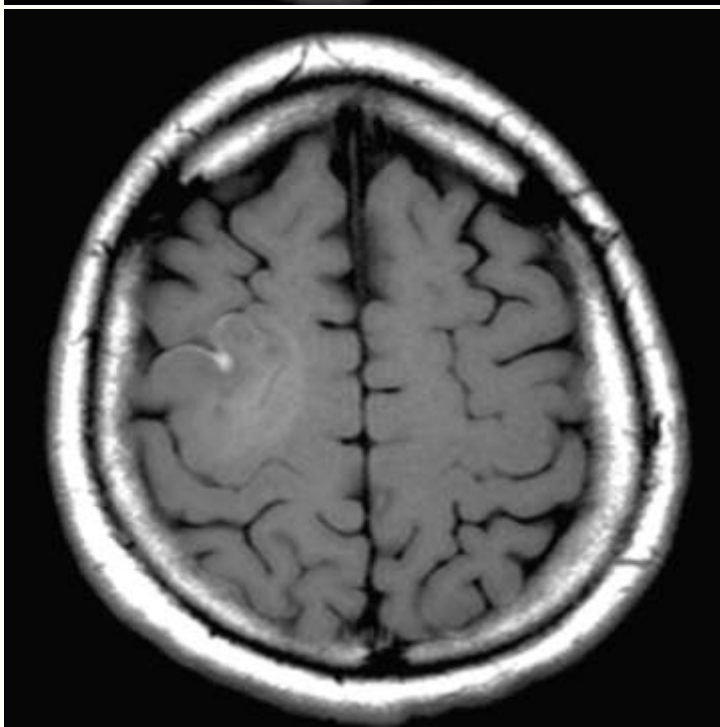
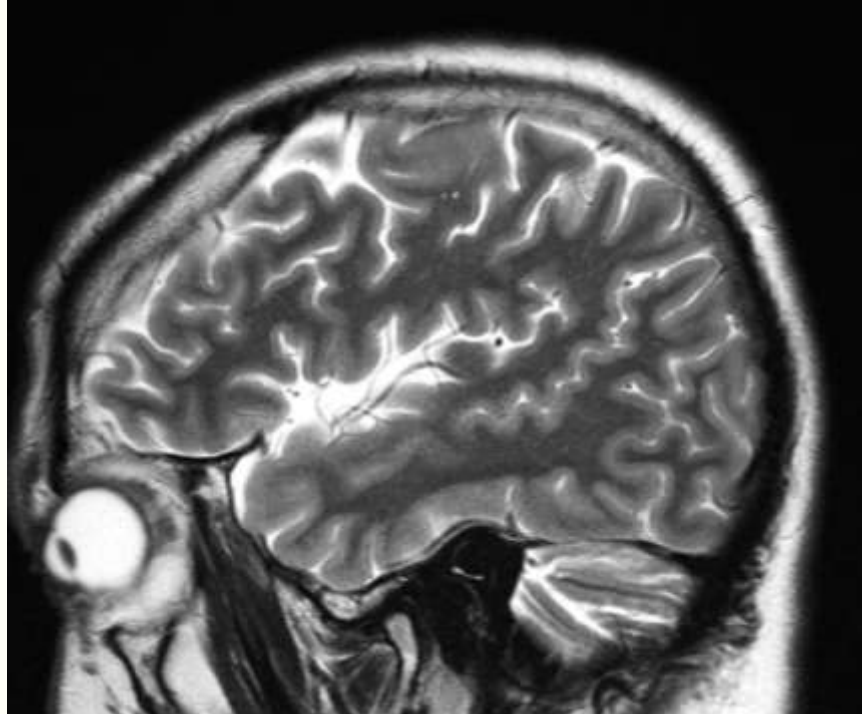
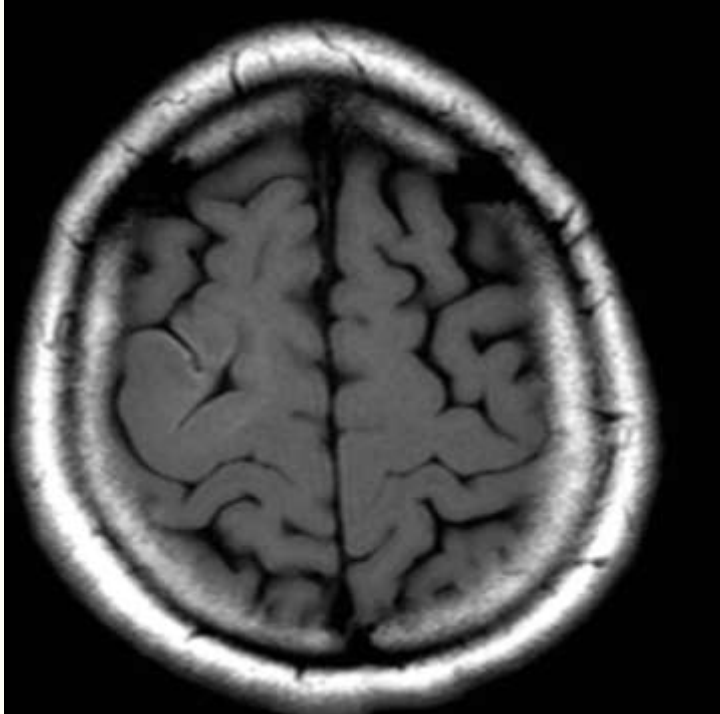
CAS 16



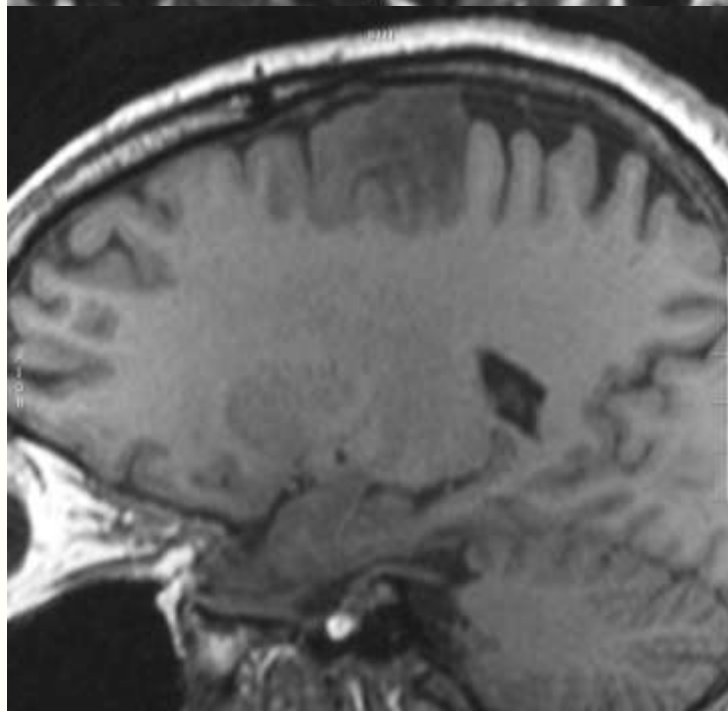
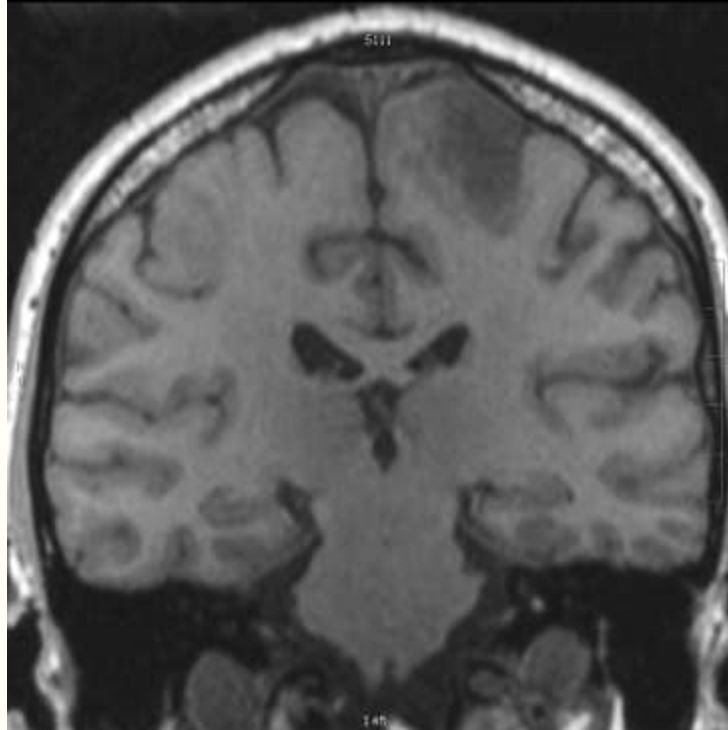
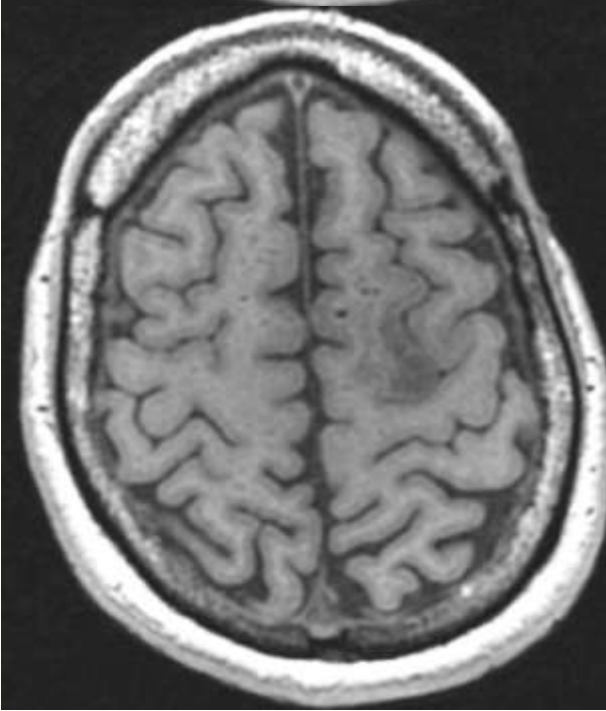
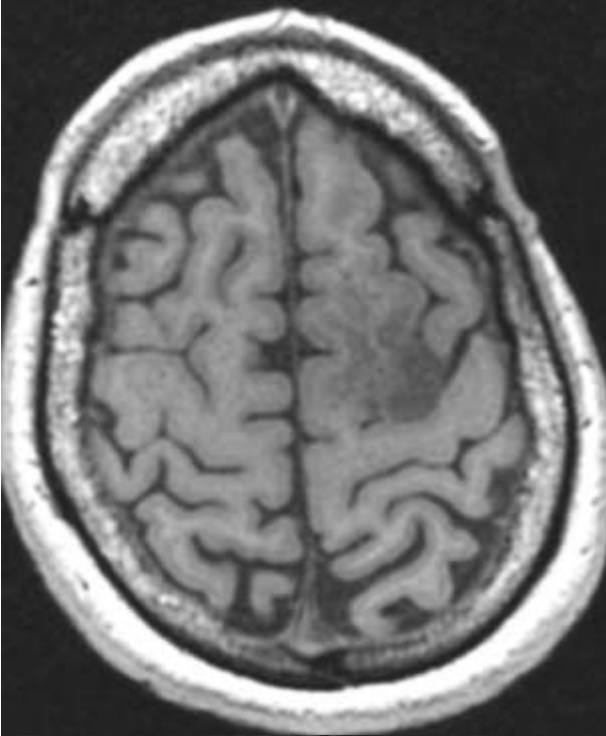
CAS 17



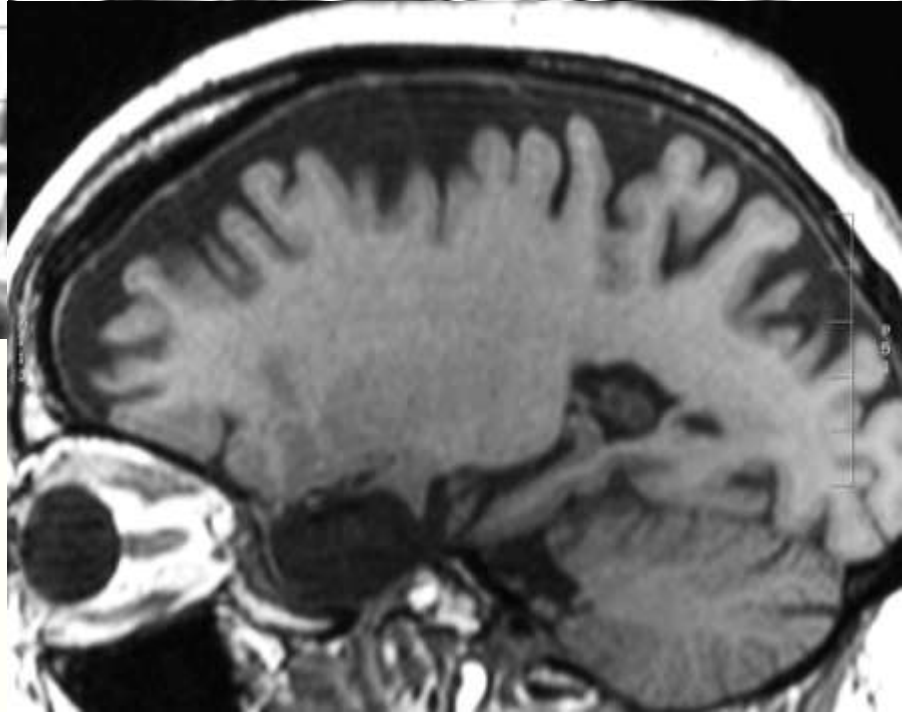
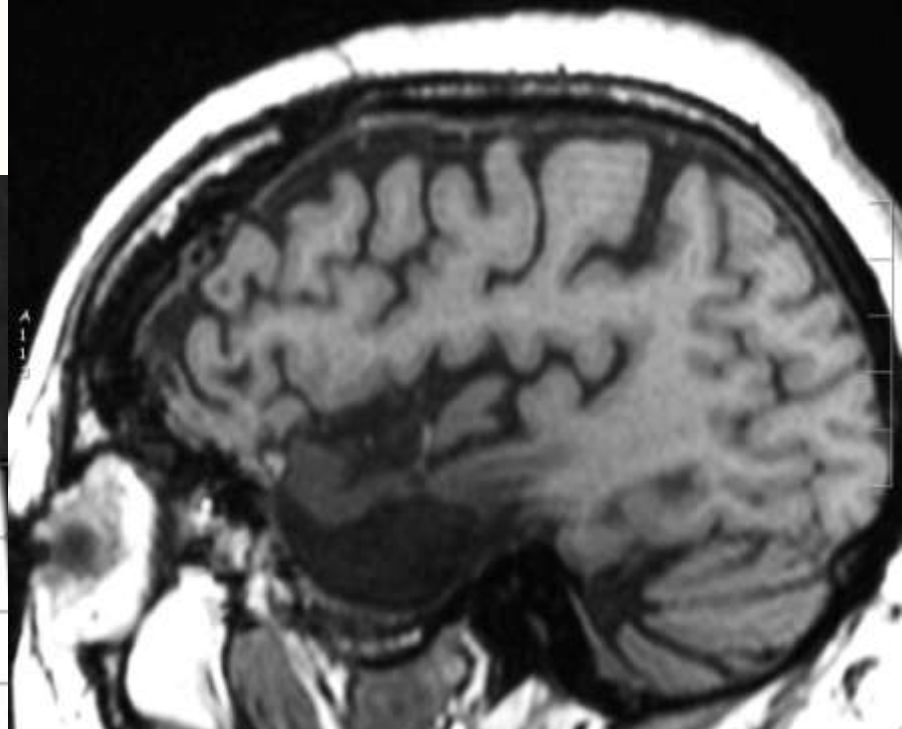
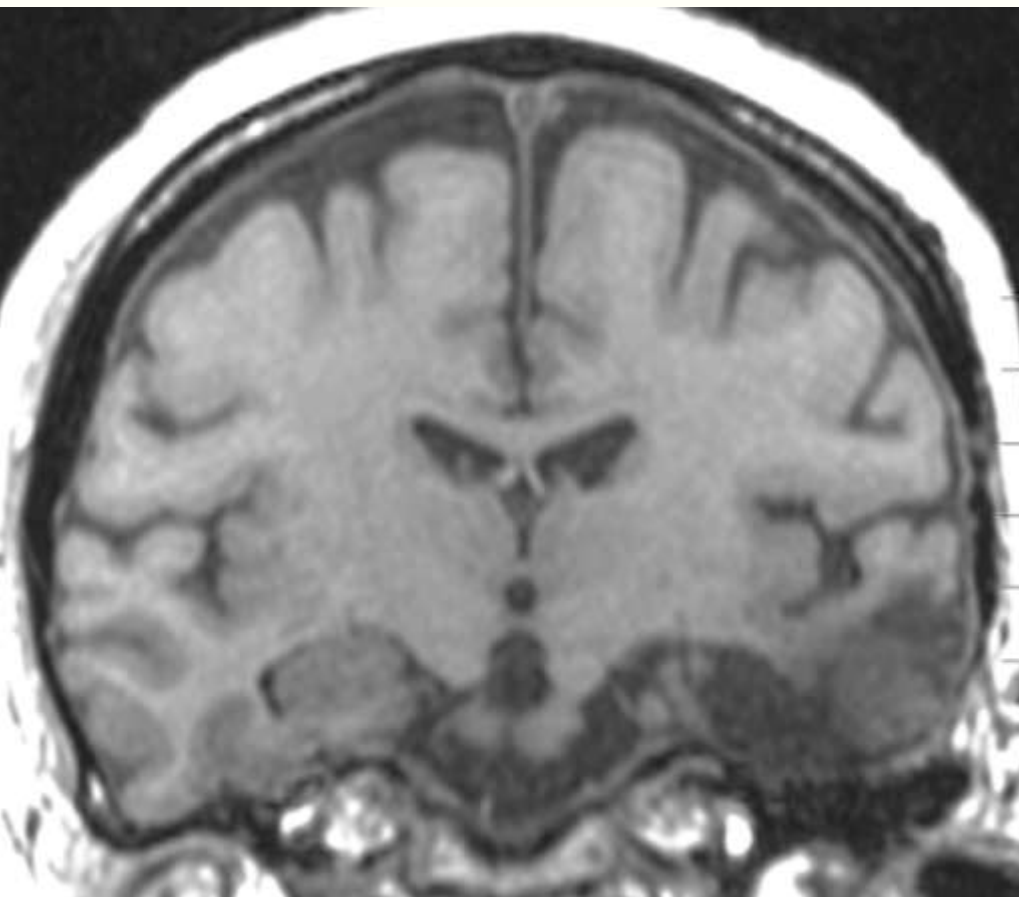
CAS 18



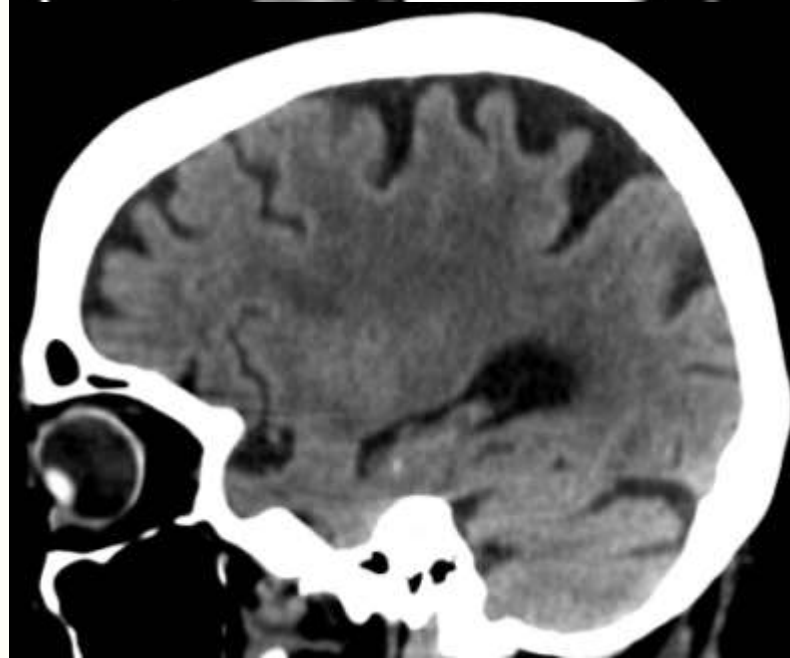
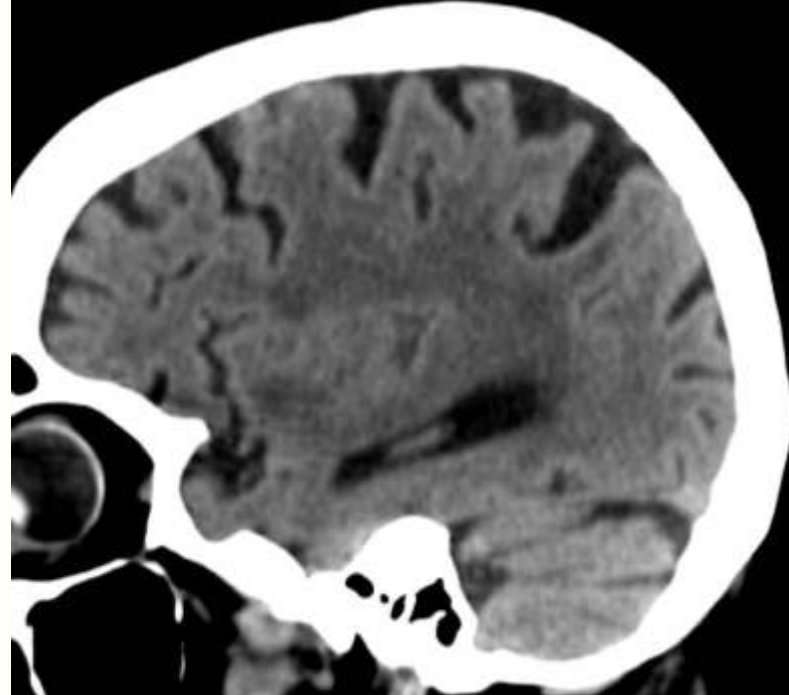
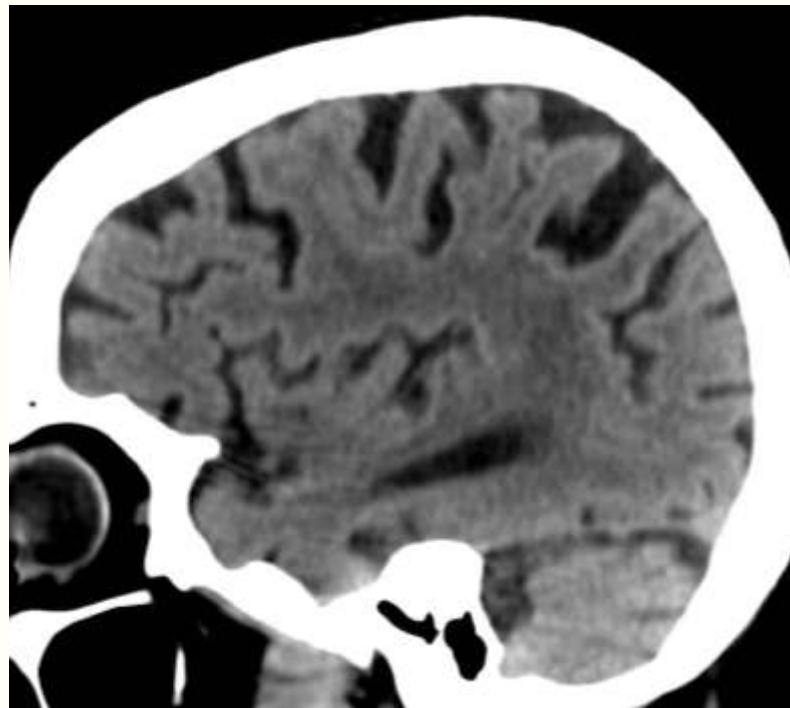
CAS 19



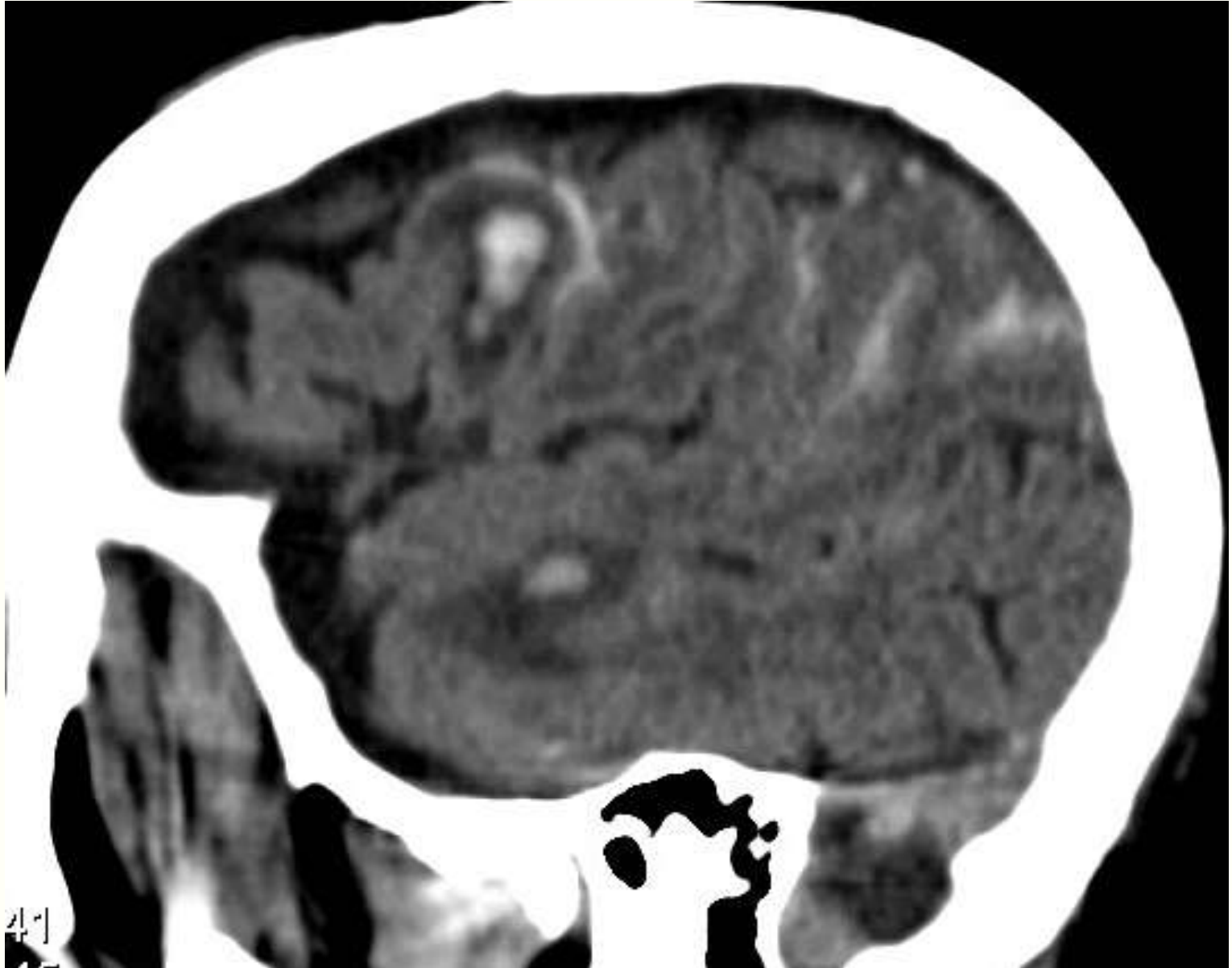
CAS 20



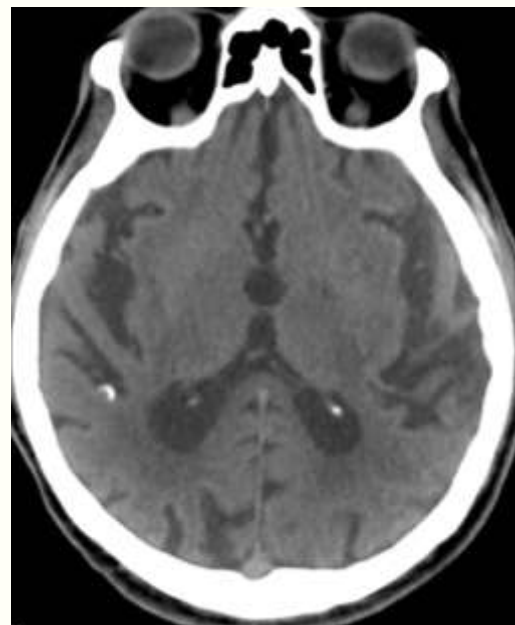
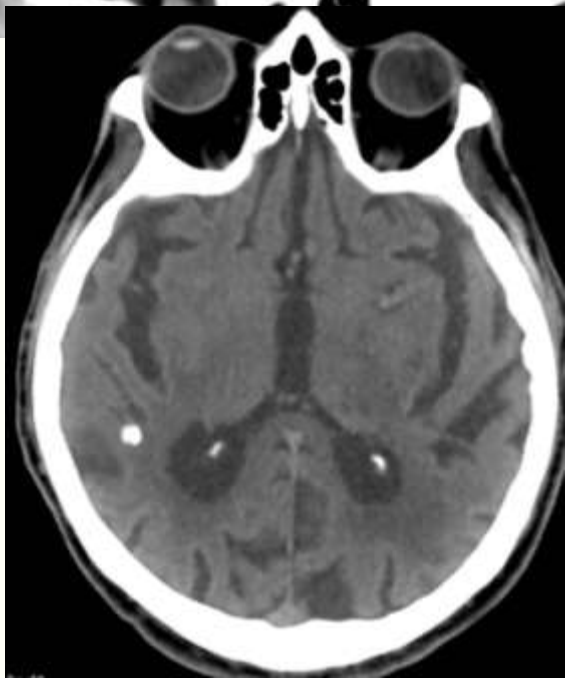
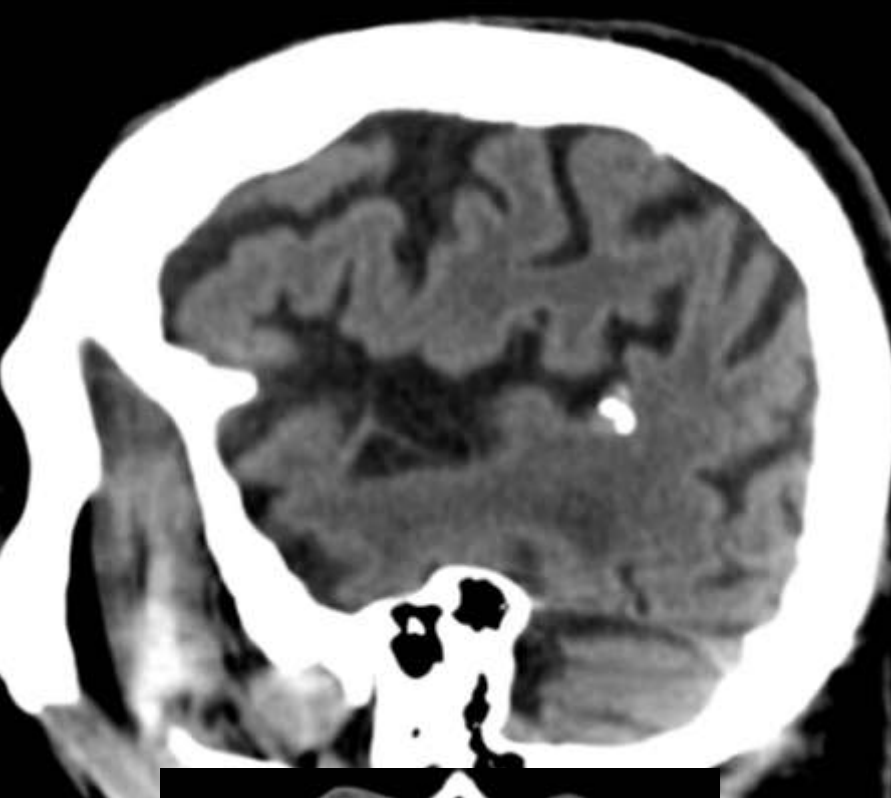
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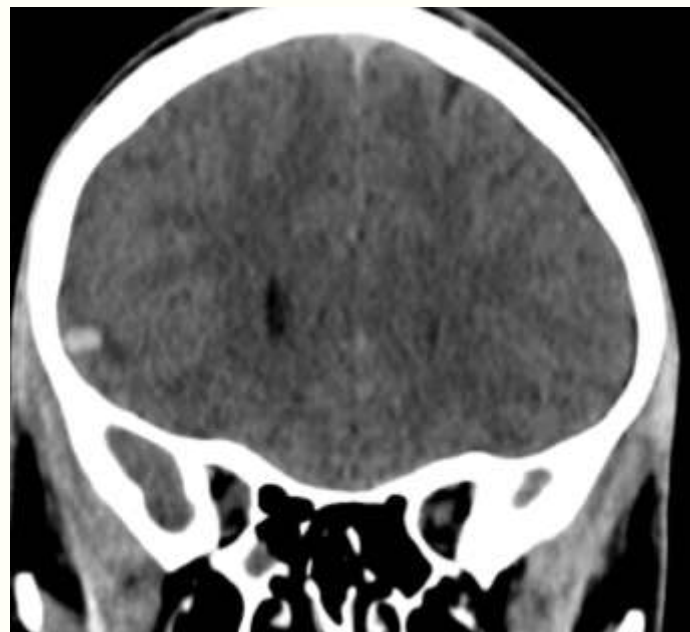
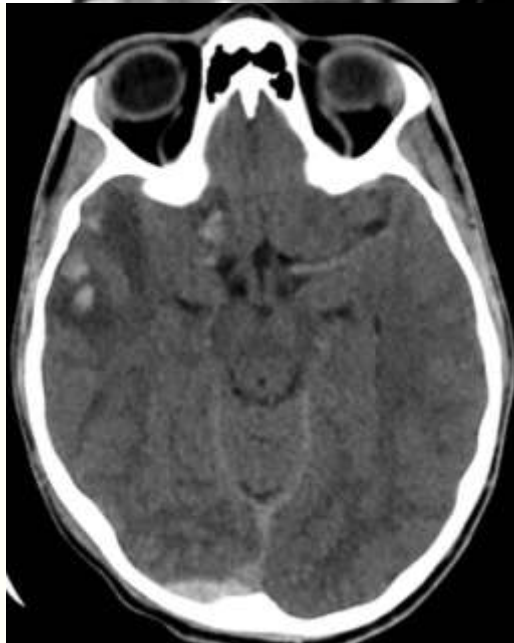
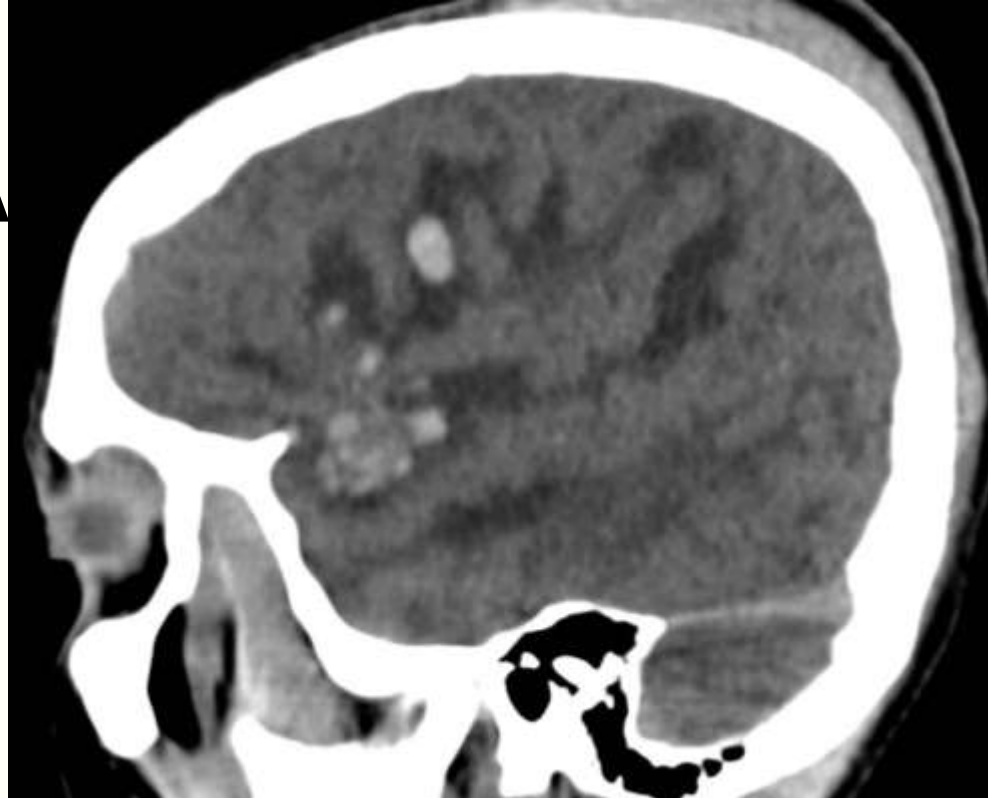
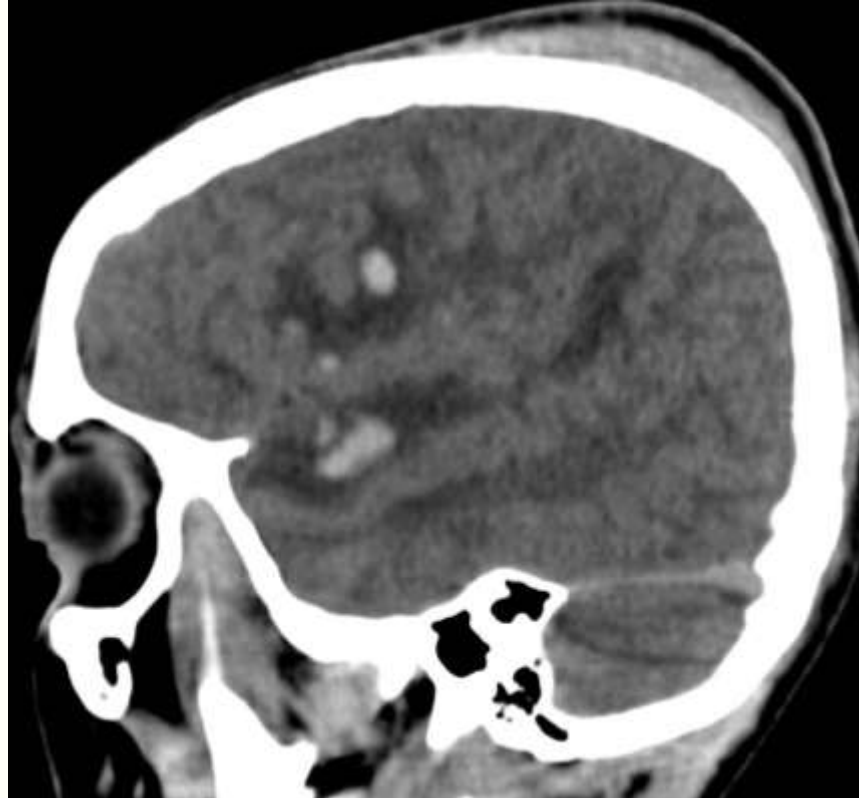


CAS 22



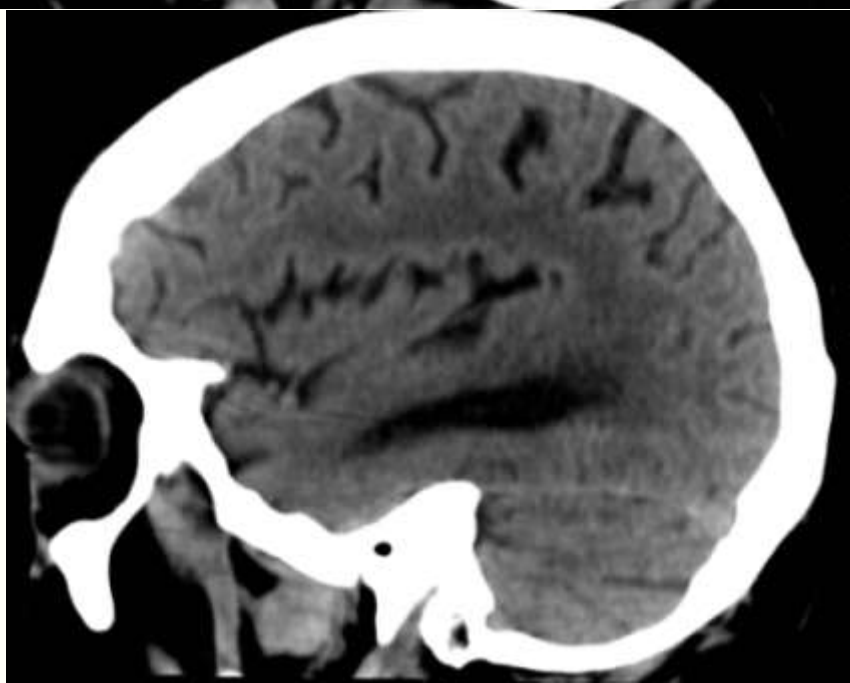
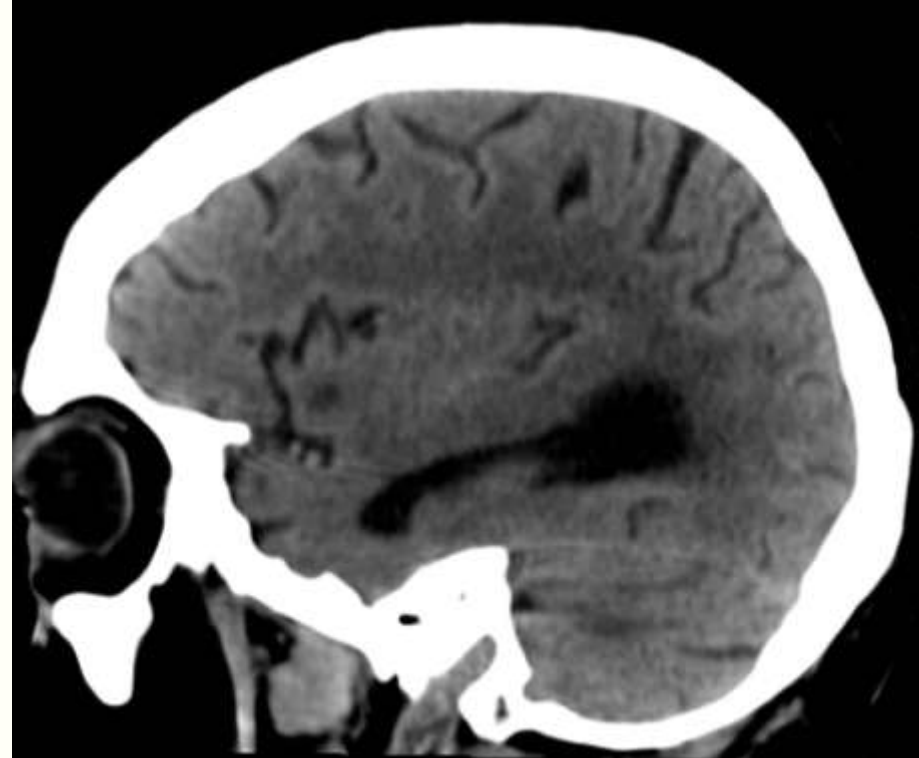
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CAS 25

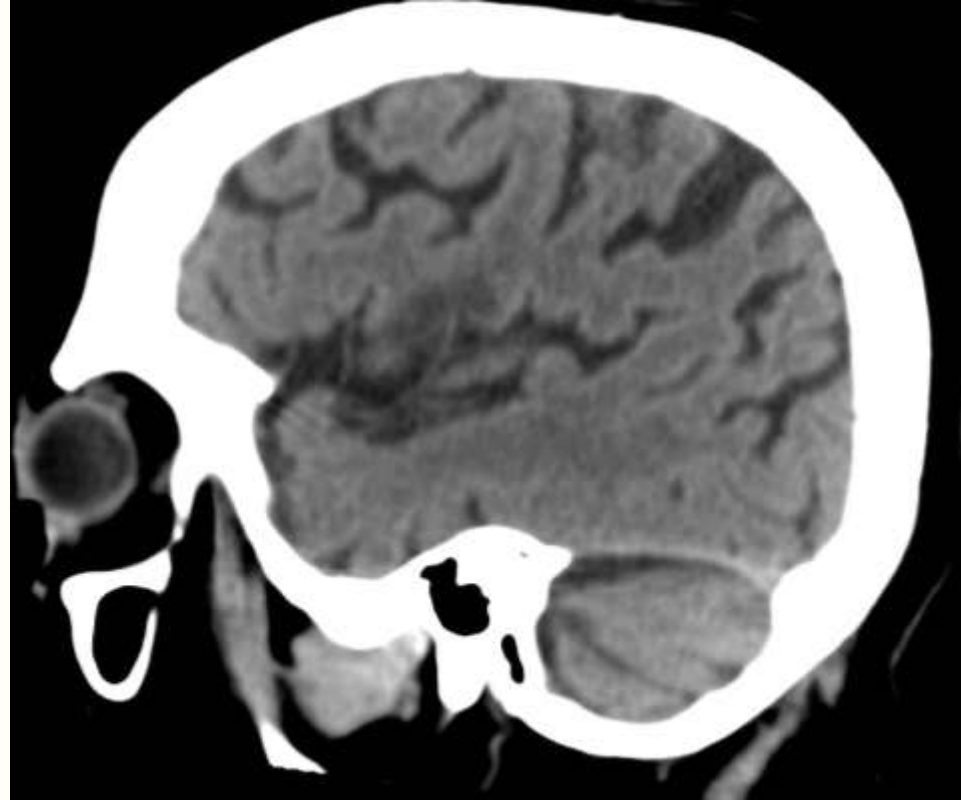
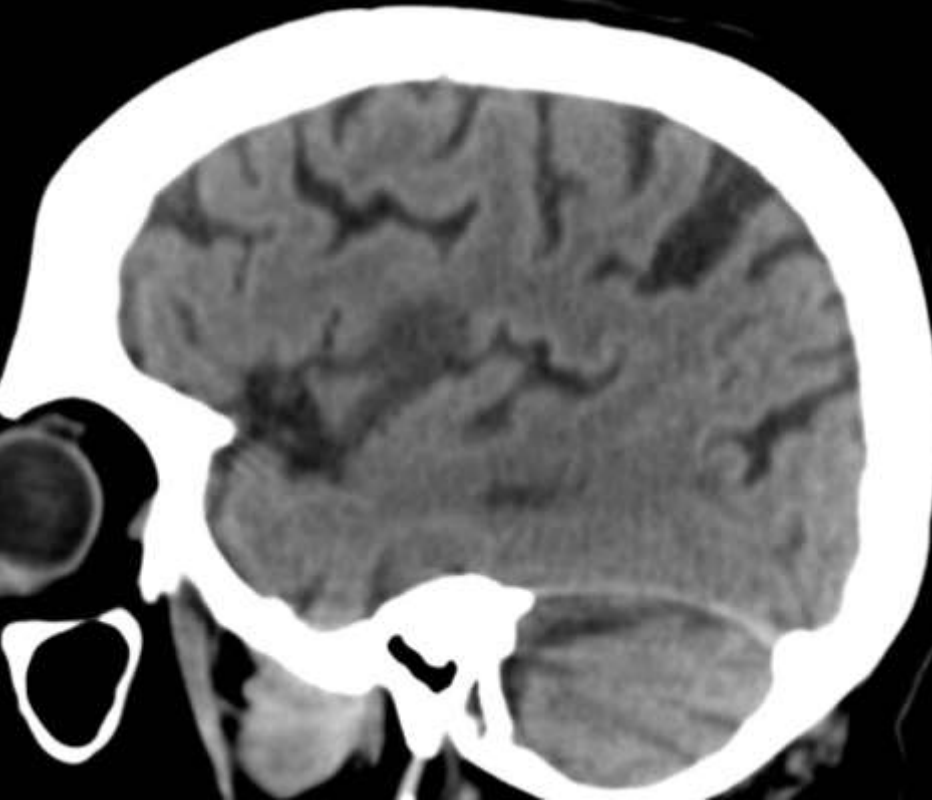
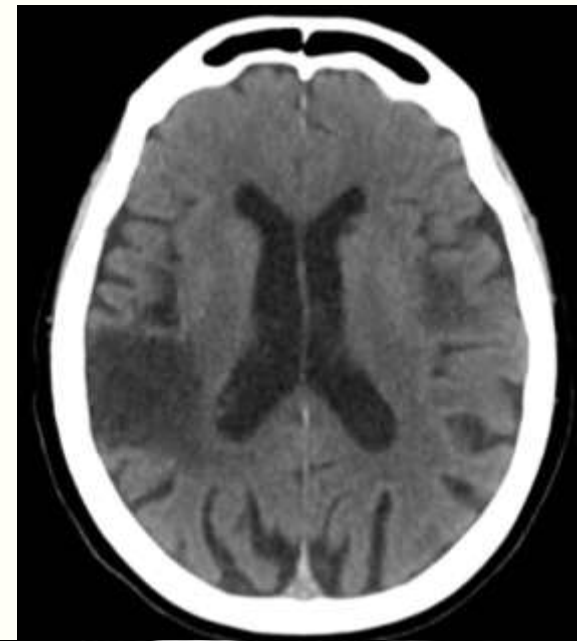
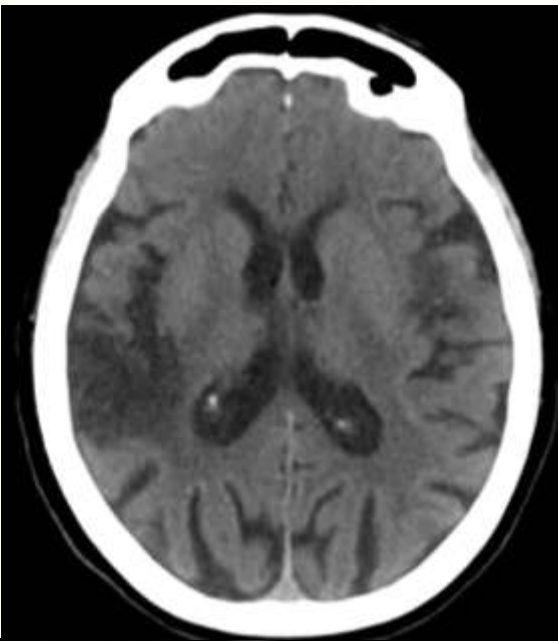




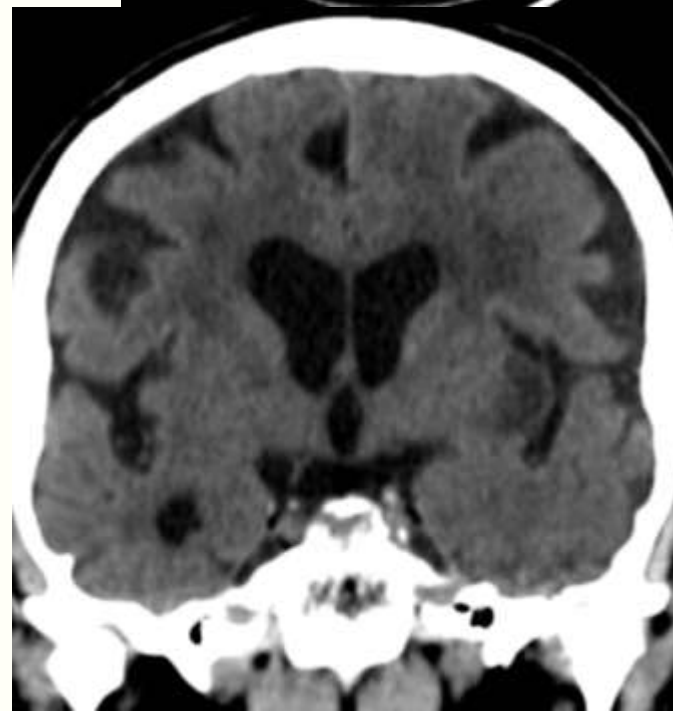
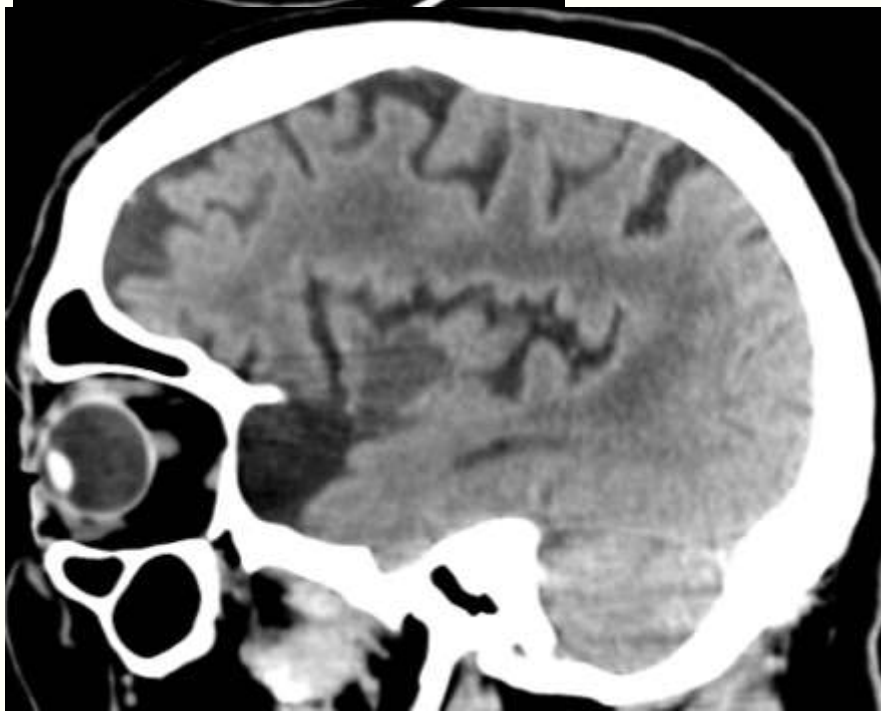
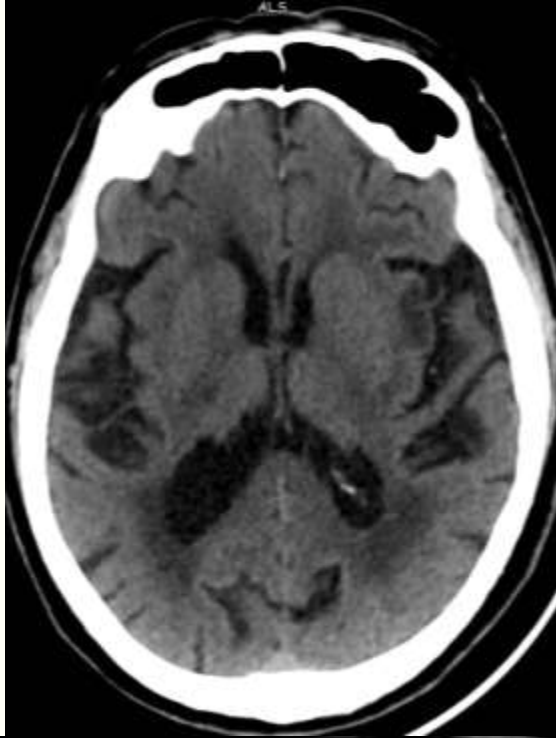
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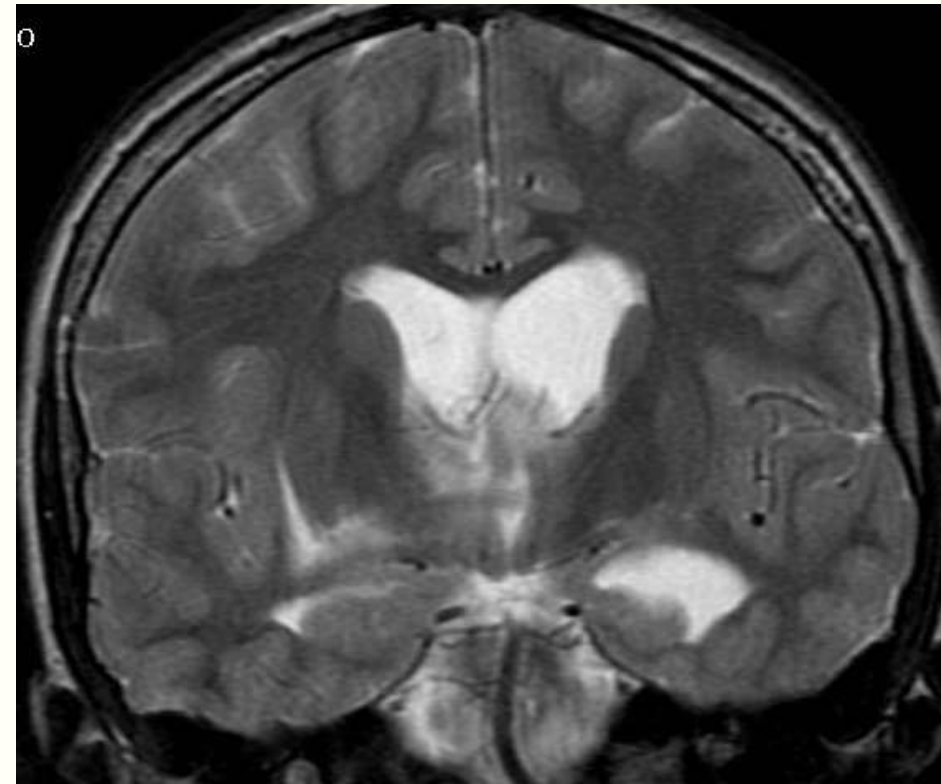
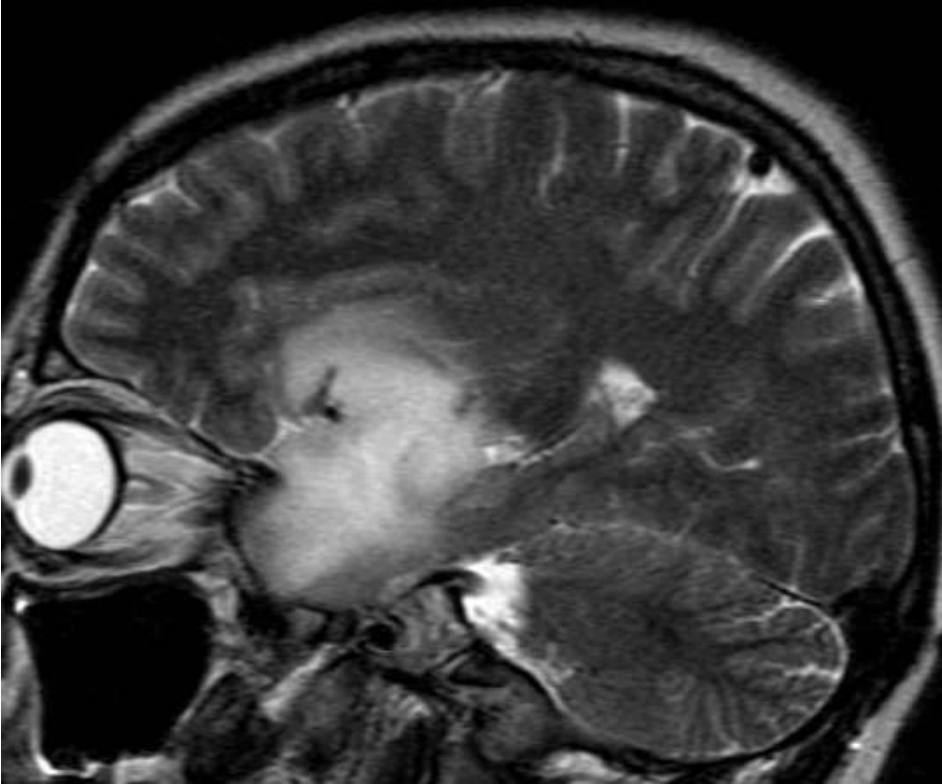
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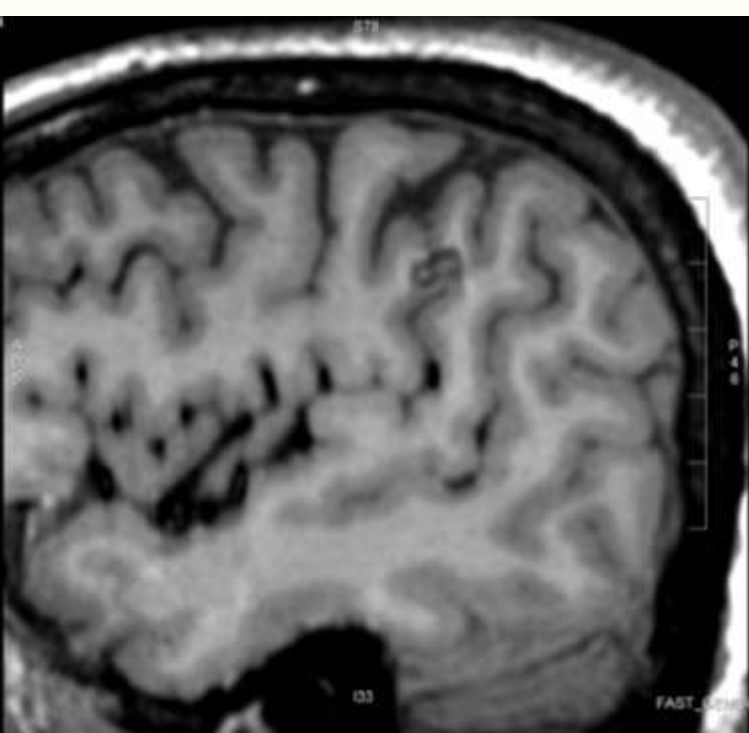


CAS 28

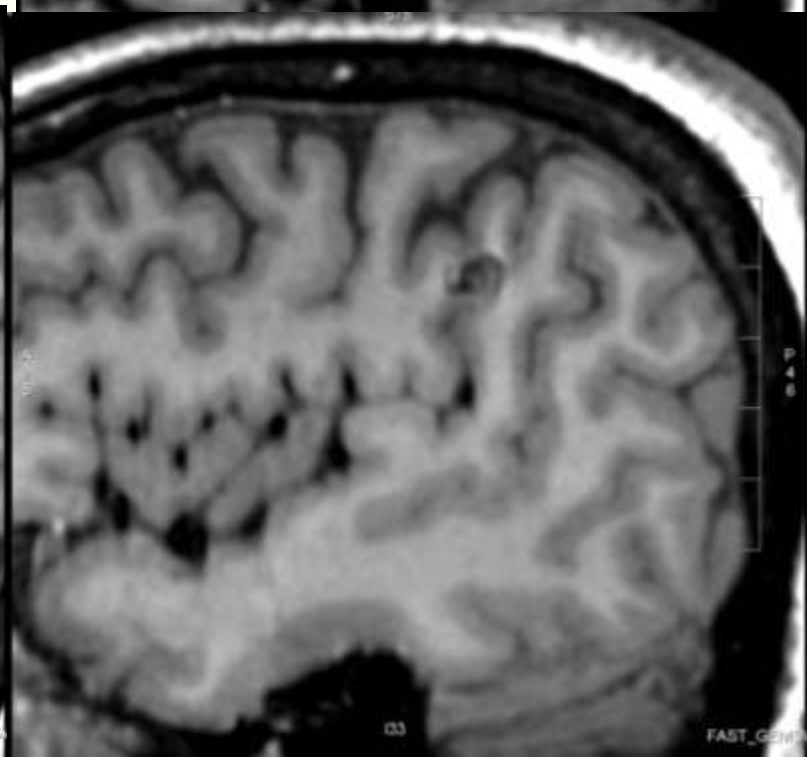
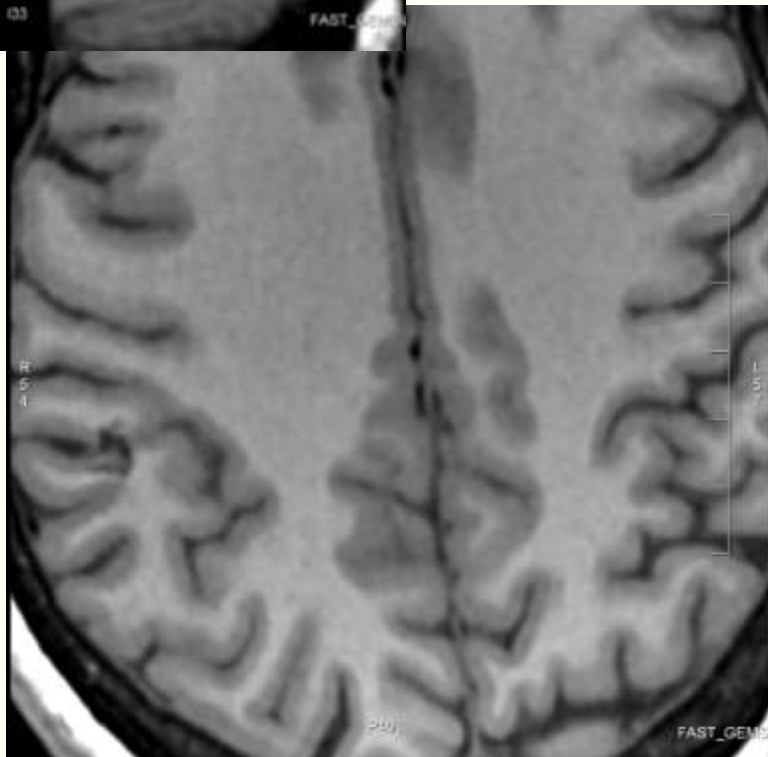
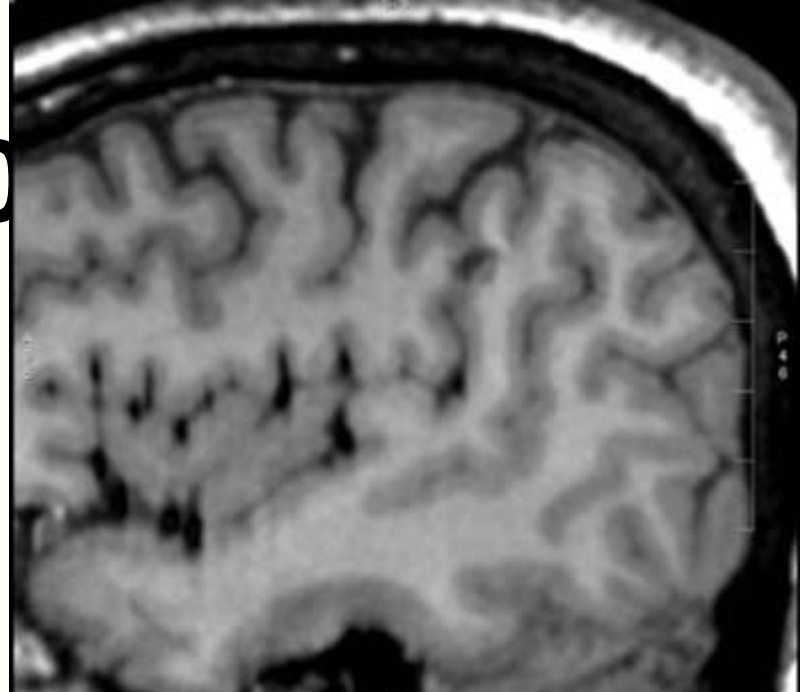


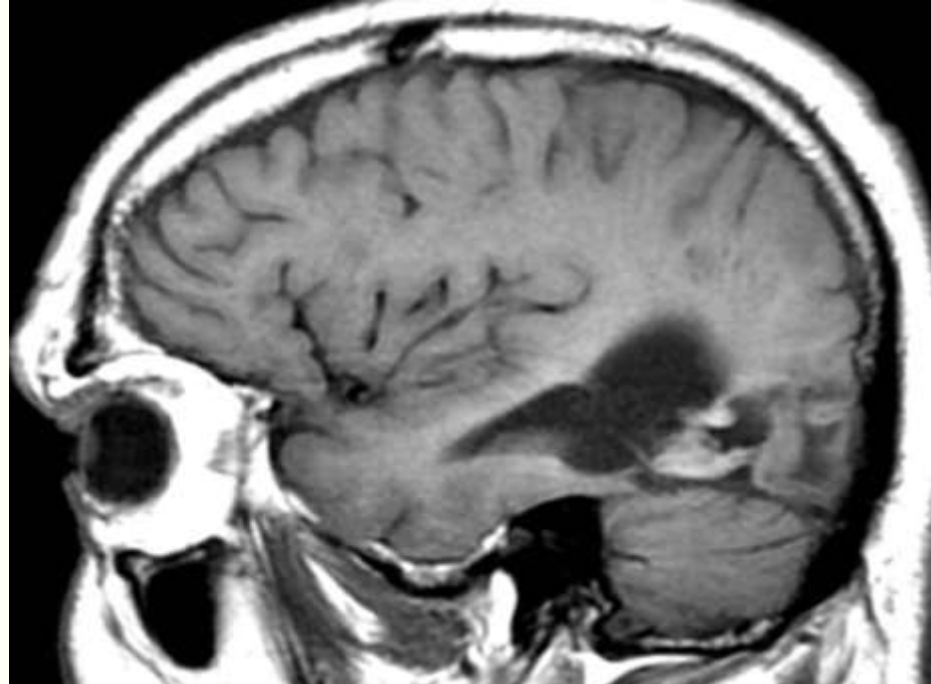
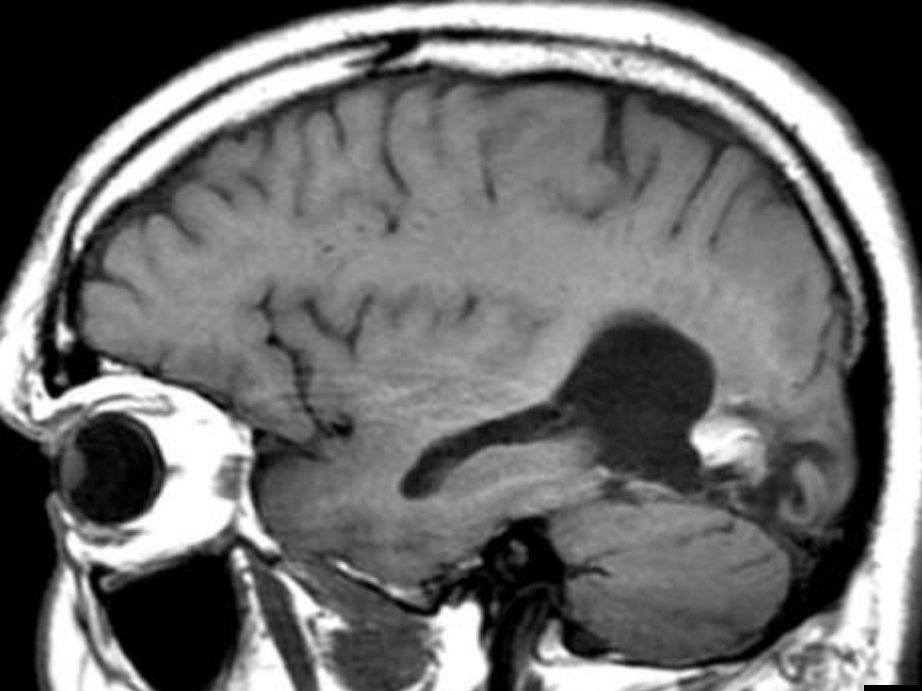
CAS 29



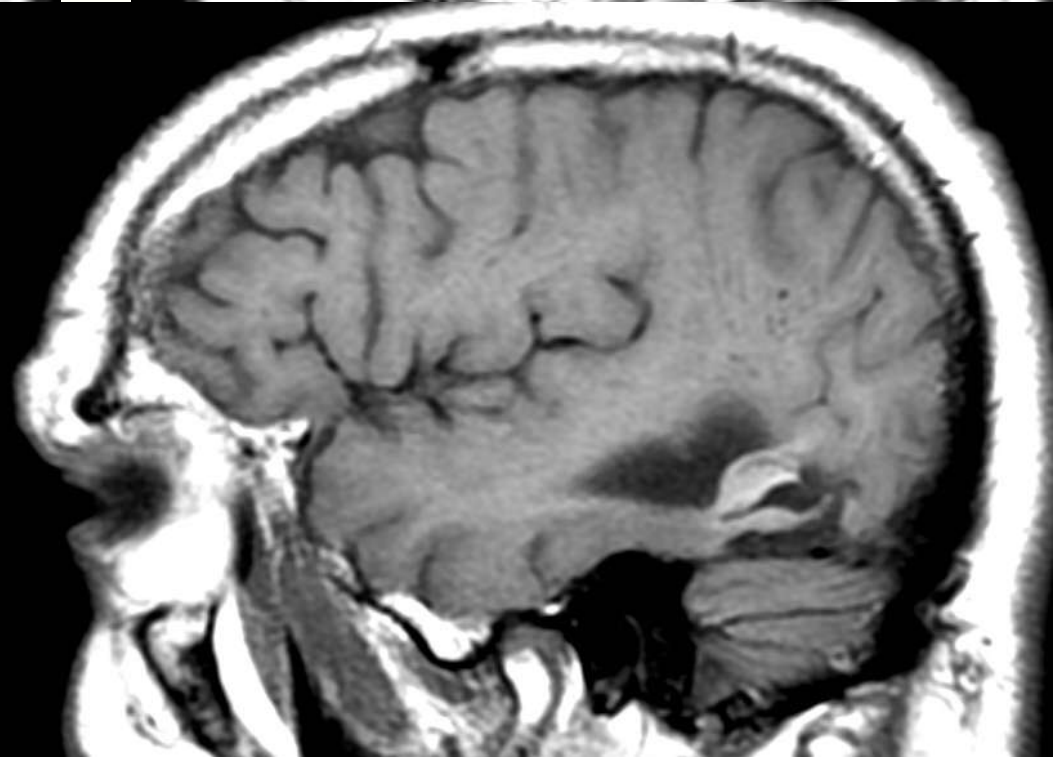


CAS 30

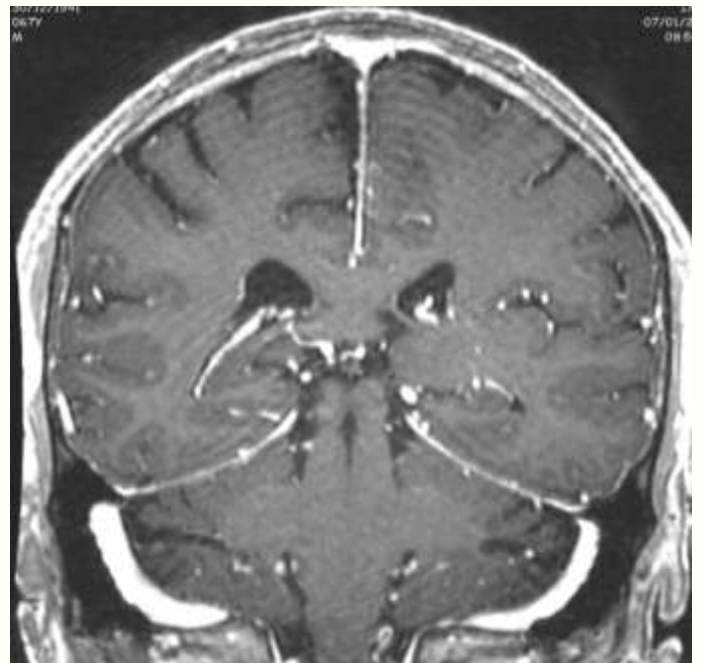
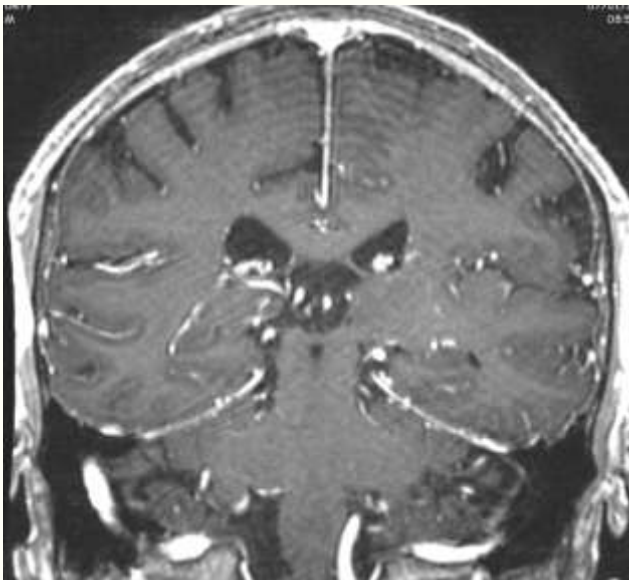
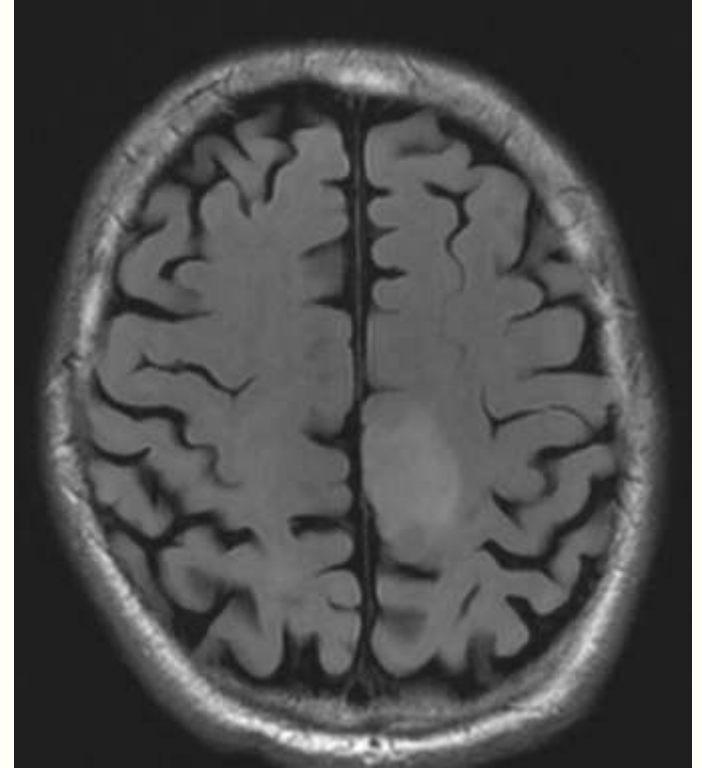
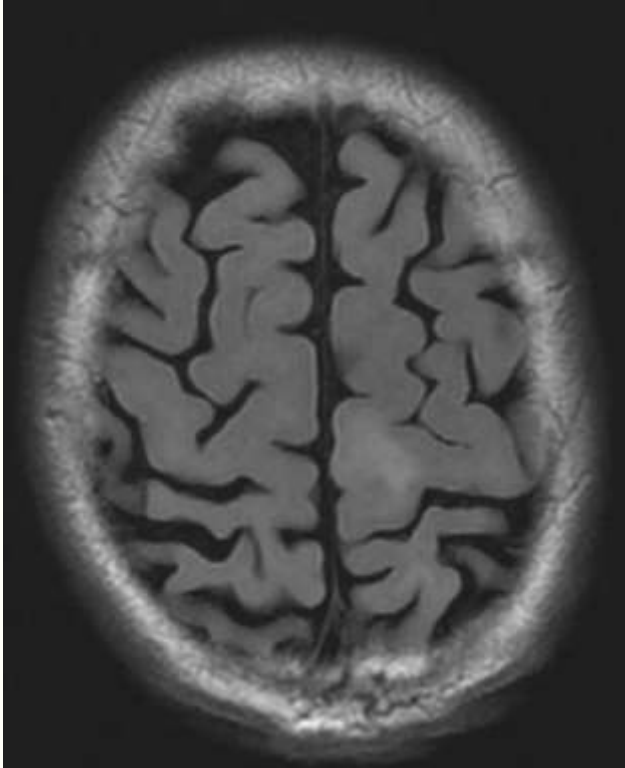




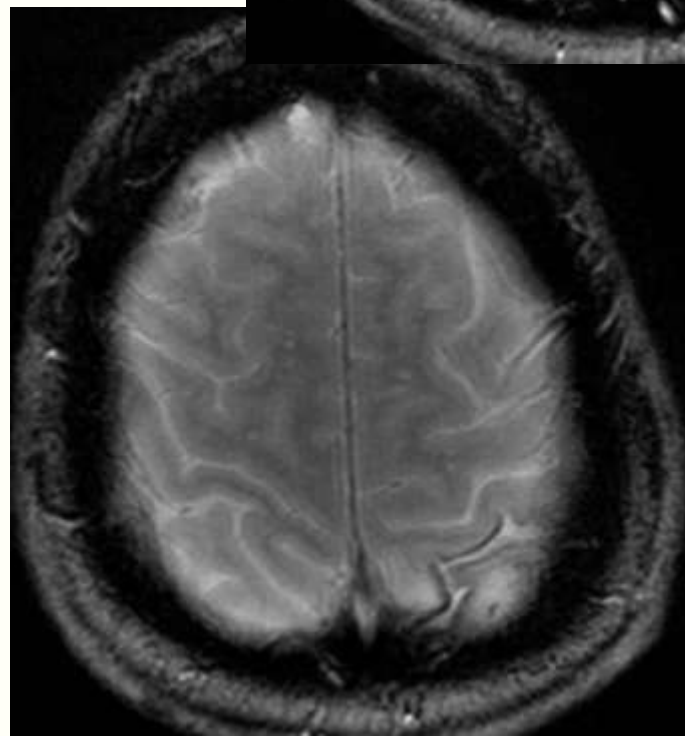
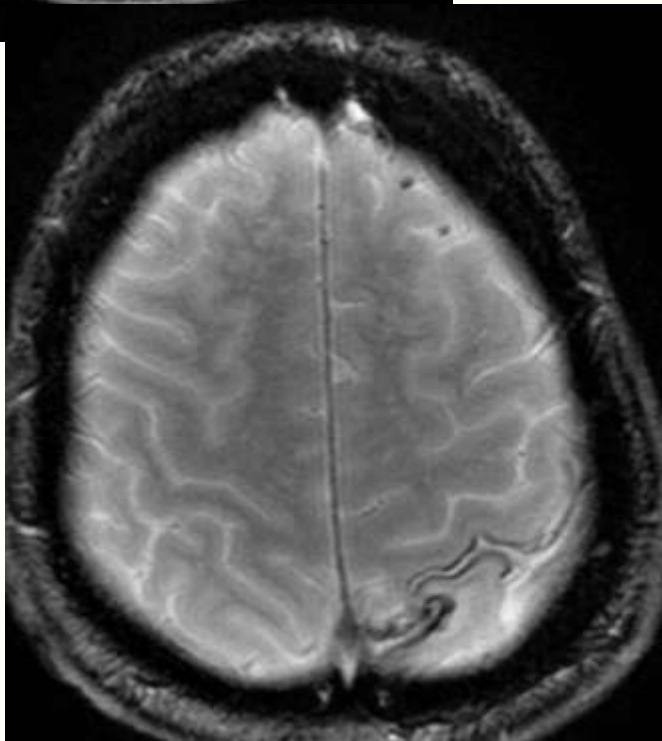
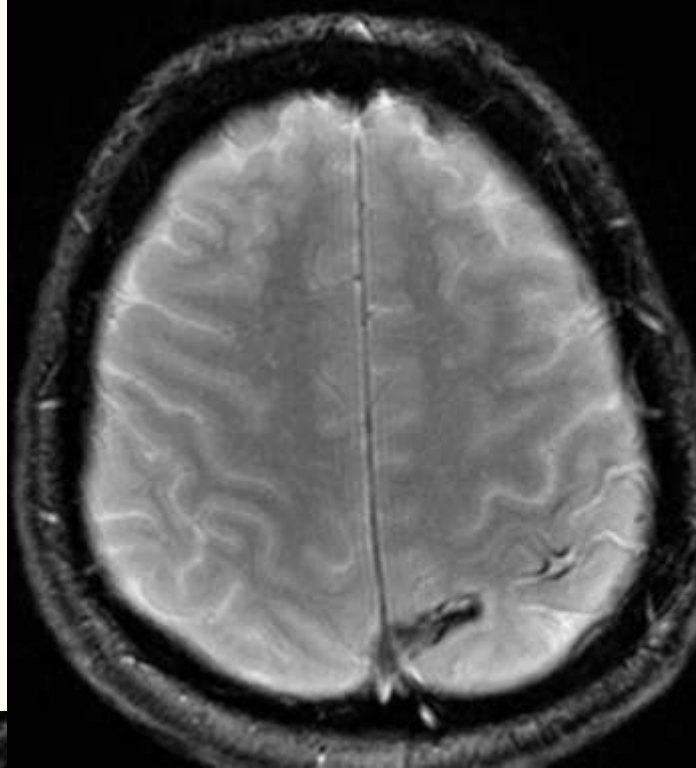
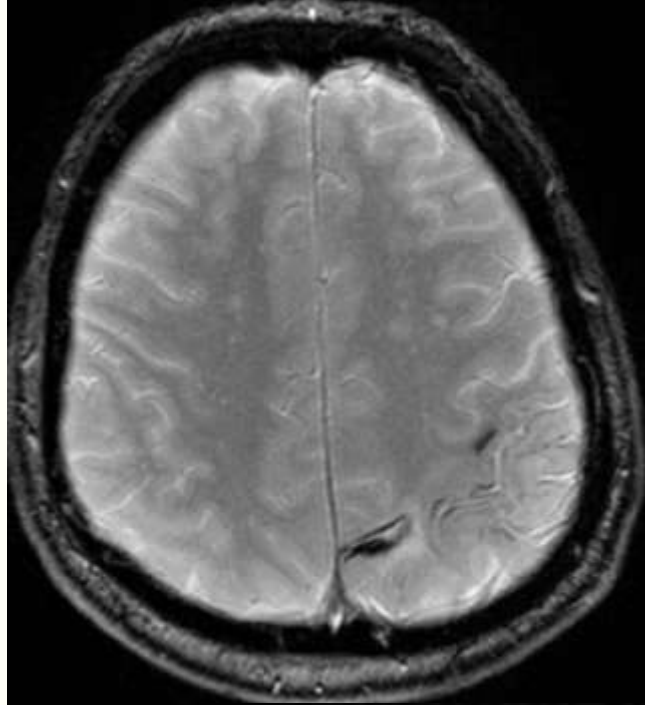
CAS 31



CAS 32



CAS 33



Merci