UCLouvain

Secteur des Sciences de la santé

Faculté de Médecine

Cours WMDS ANAT 1311 (BAC13)

Année académique 2021-2022

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Neuroanatomie radiologique

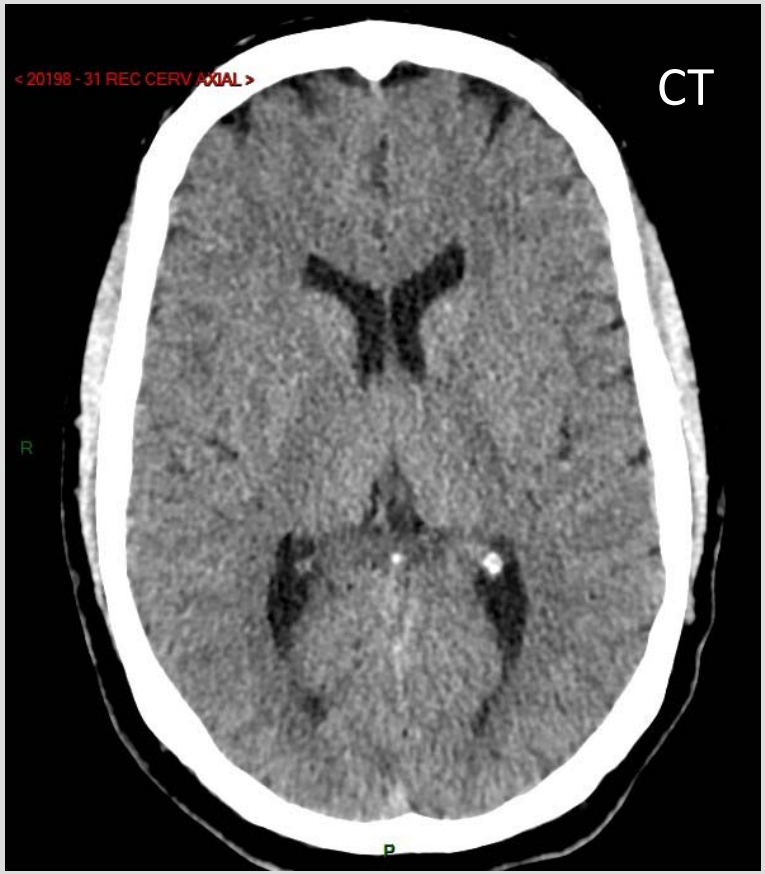
Pr. Thierry DUPREZ

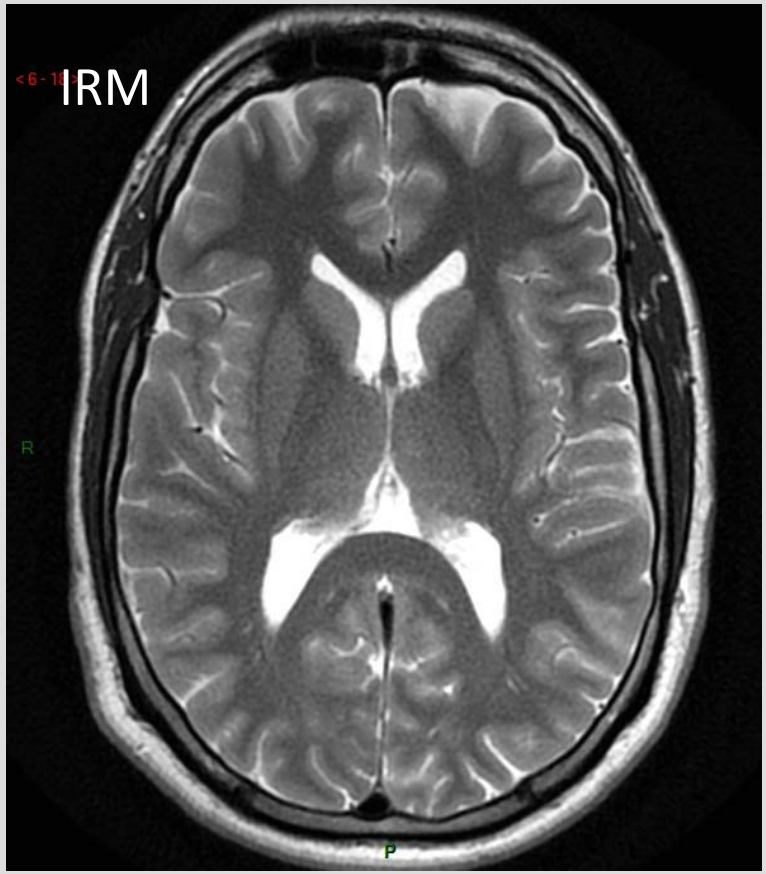
Cliniques universitaires SAINT-LUC UCL BRUXELLES

Module 5 : Overview des examens neuroradiologiques (TP)

Fosse postérieure et nerfs crâniens

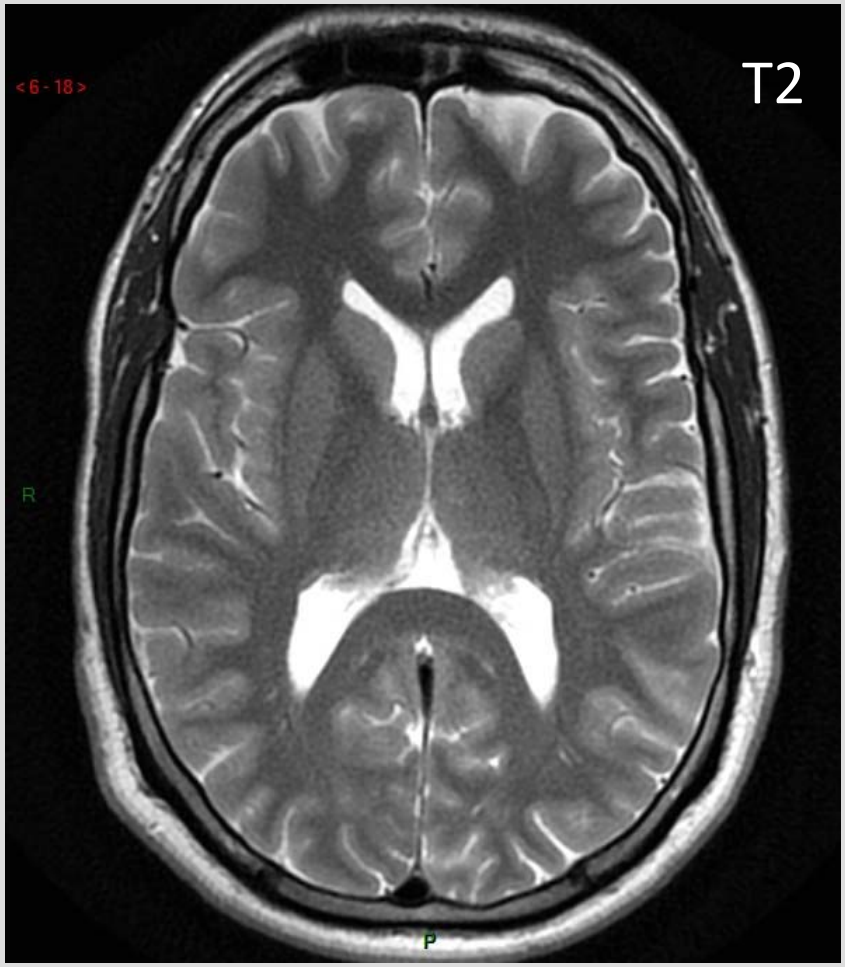
Overview des examens CT/ IRM de l’encéphale en routine clinique

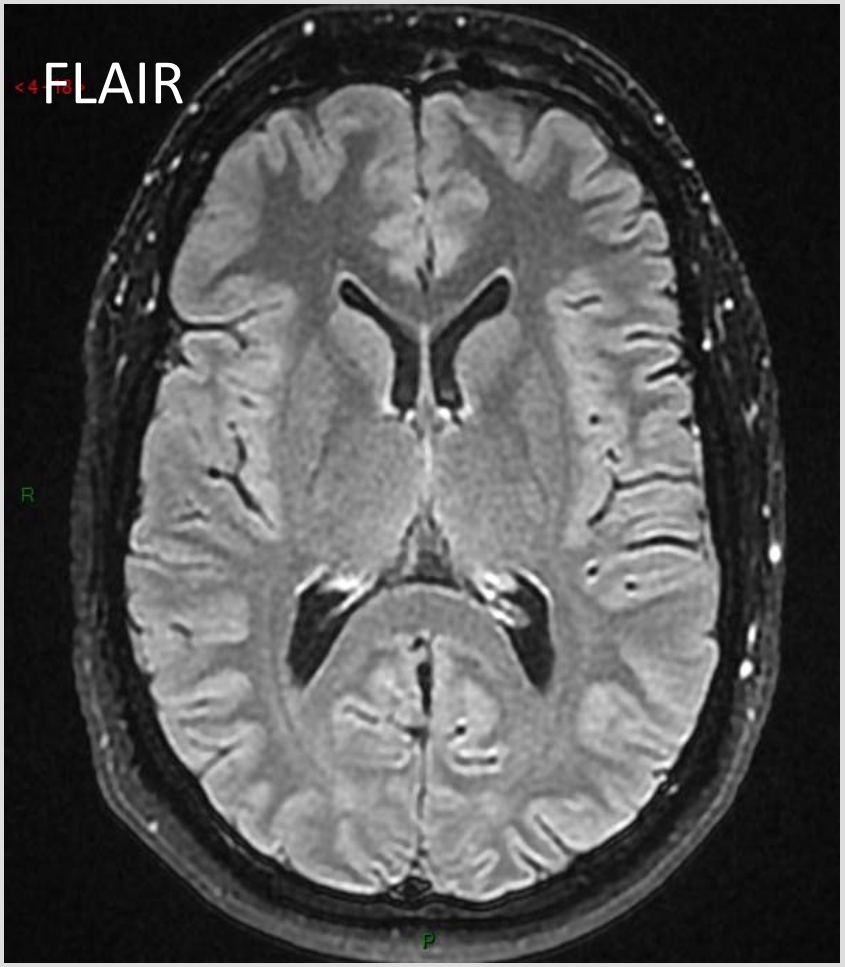




Comparaison d'une coupe transversale chez la même personne dans un plan identique:

- **CT scanner** à gauche
- **IRM** en pondération **T2** à droite



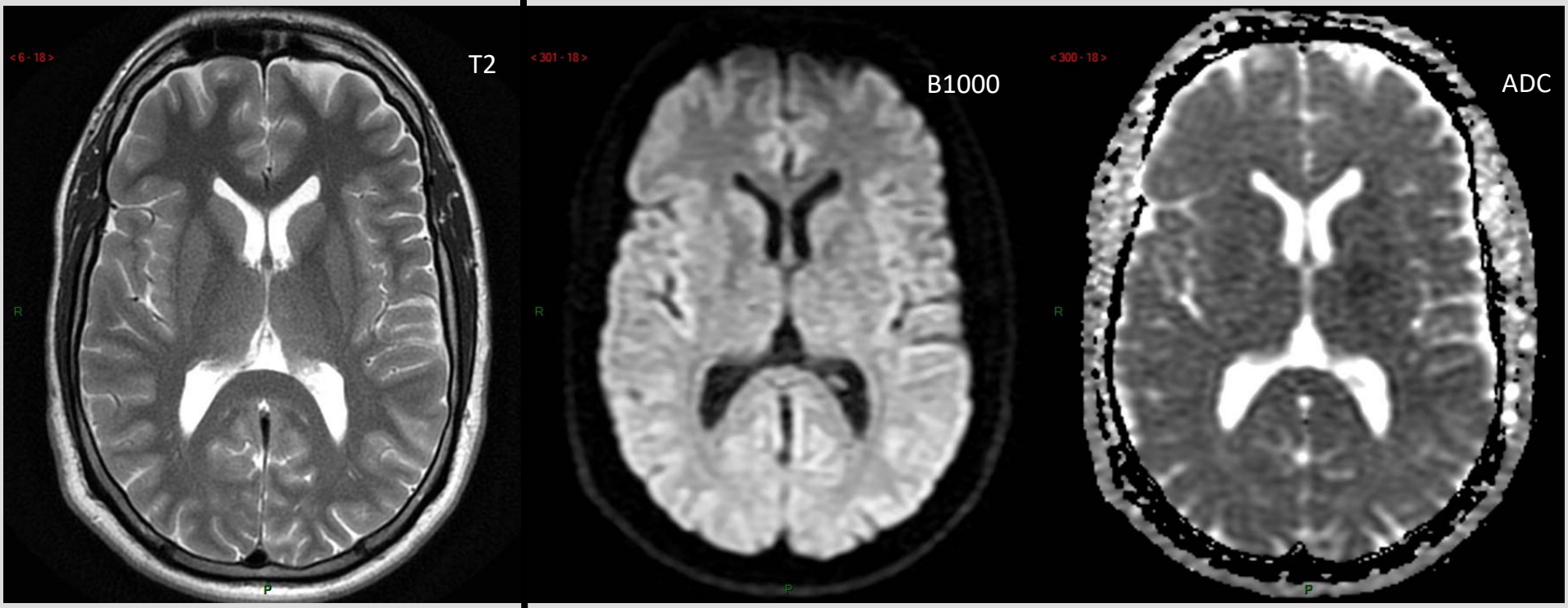


Chez la même personne, même plan de coupe: comparaison de la pondération **T2** (à gauche) et **FLAIR** (à droite

Pondération **T2 spin echo rapide (TSE)** à gauche et **écho de gradient (GRE)** à droite

Quelle valeur ajoutée à ma pondération GRE T2 ?

Pondération de diffusion



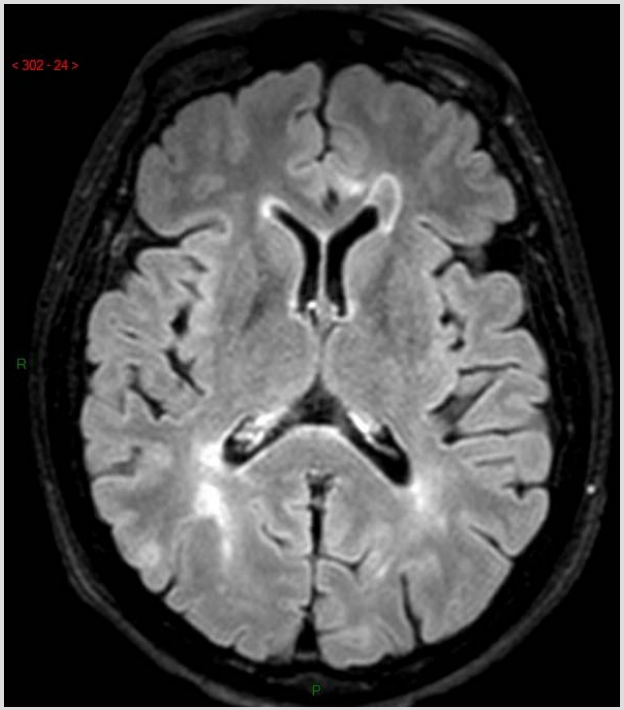
Pondération T2

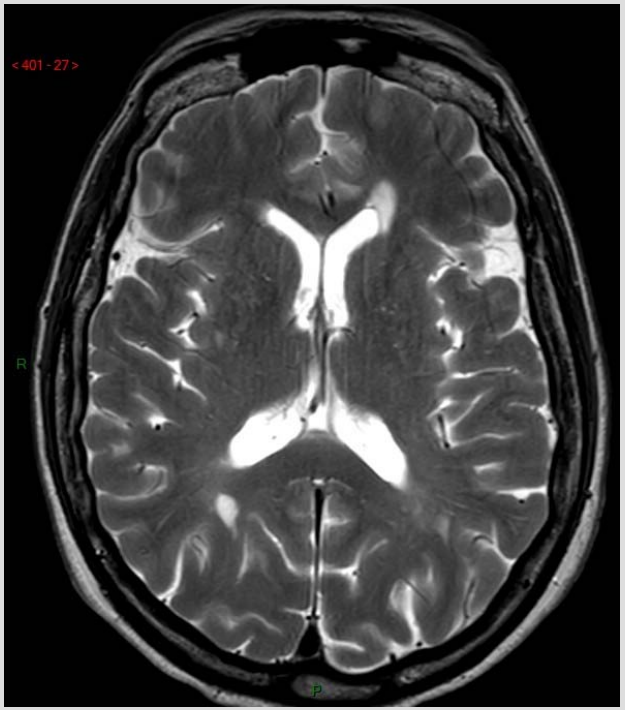
Pondération en diffusion

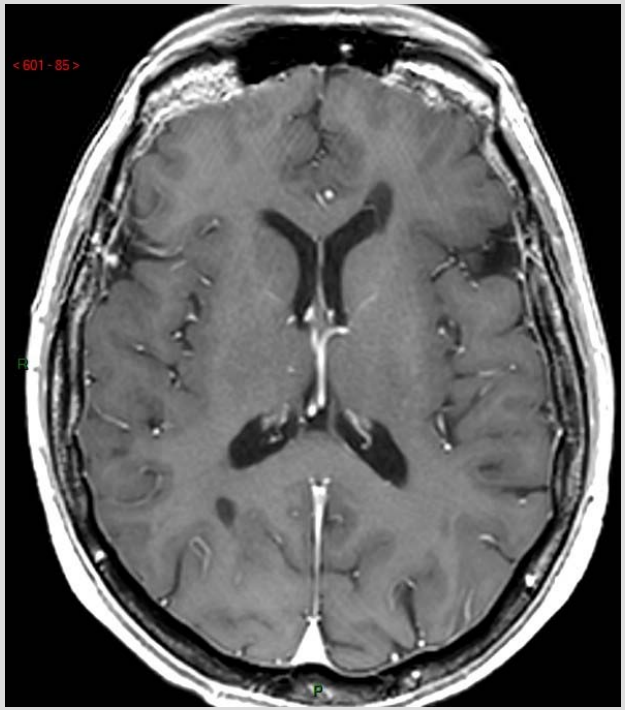
Cartographie de l'ADC

Domaine qualitatif

Domaine quantitatif







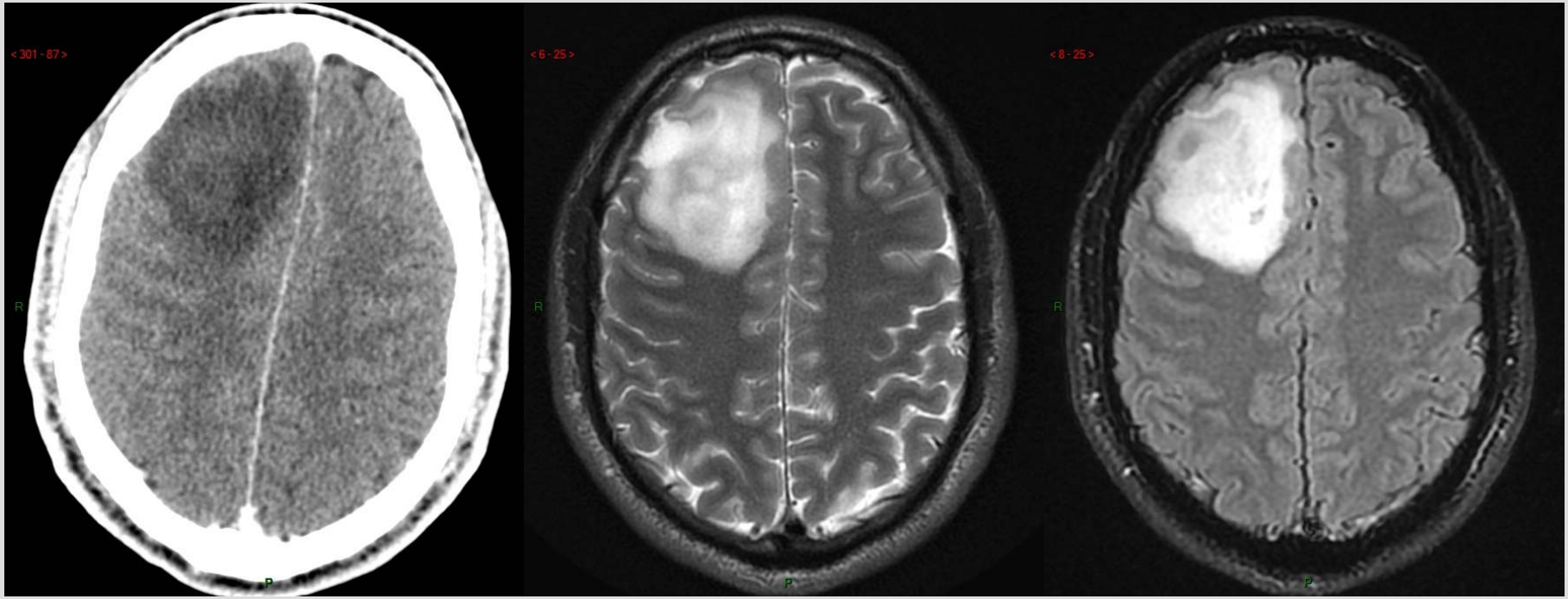
FLAIR T2 T1

Quelle information qualitative cardinale dans la prise en charge du patient apporte la pondération T1 post-contraste ?

Quelle autre information semi-quantitative cardinale apporte la pondération T1 ?

IRM cérébrale avant et après injection de produit de contraste

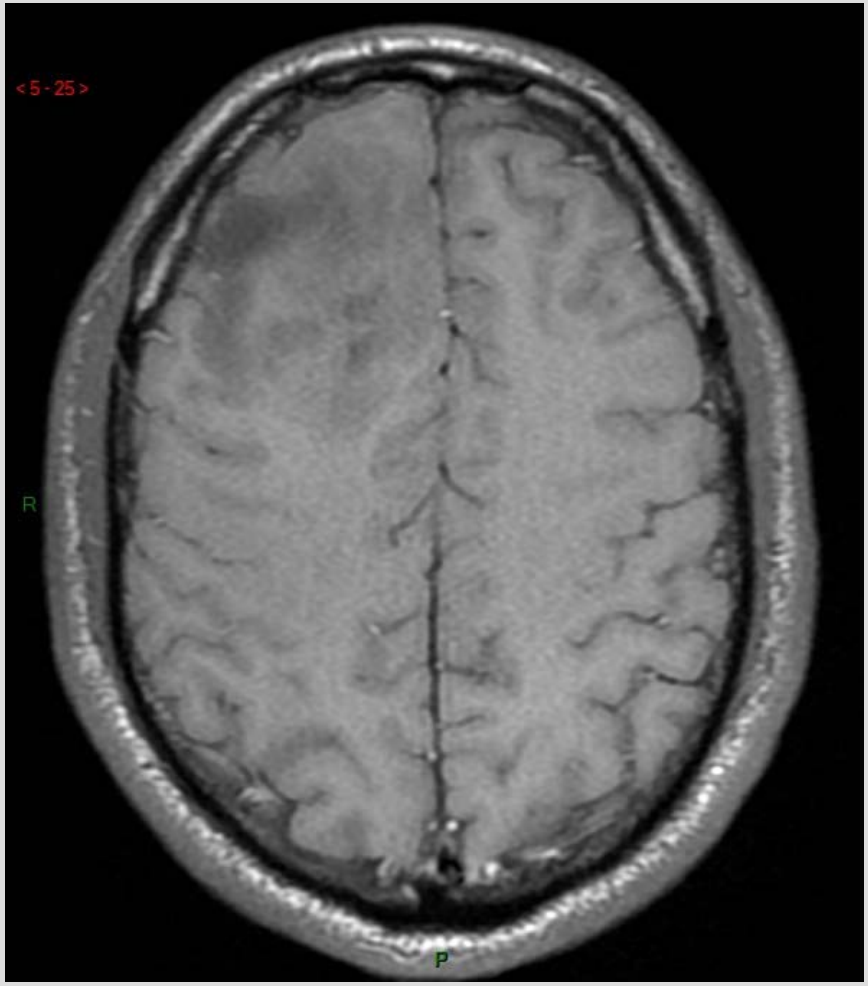
→ Caractérisation d'une lésion cérébrale vue sur les séquences sans injection de PdC



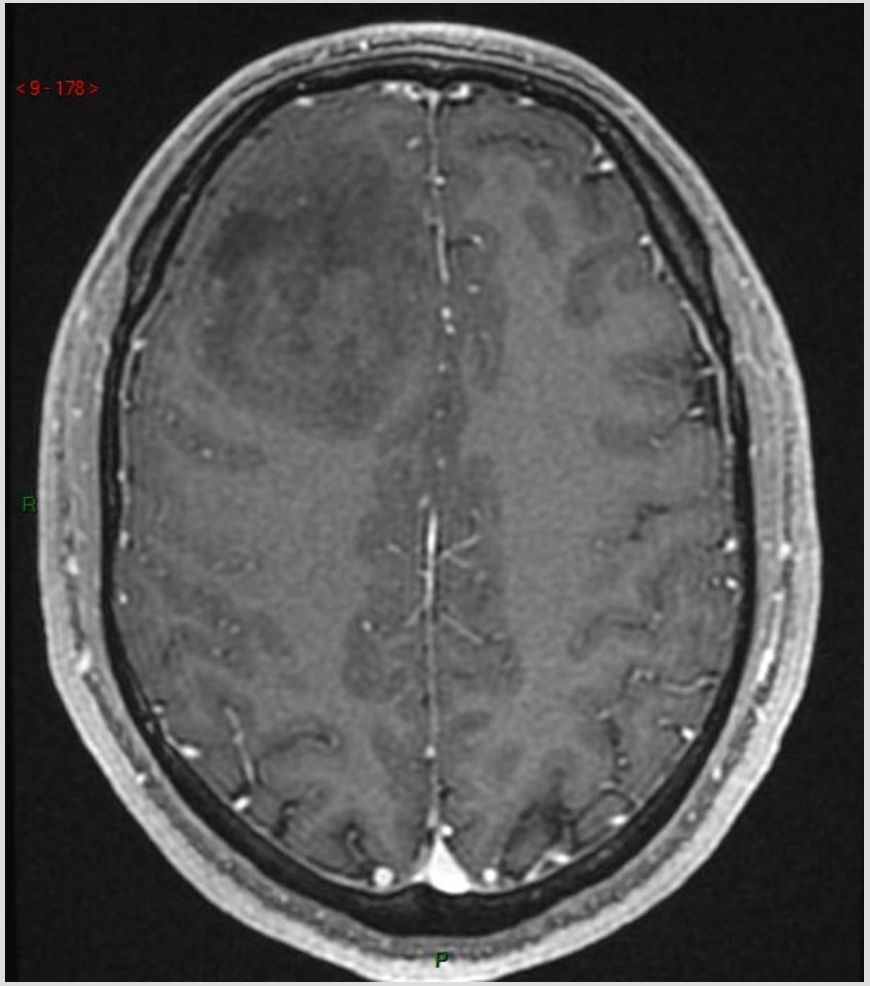
CT scanner cérébral <u>AVEC</u> injection de PdC

T2

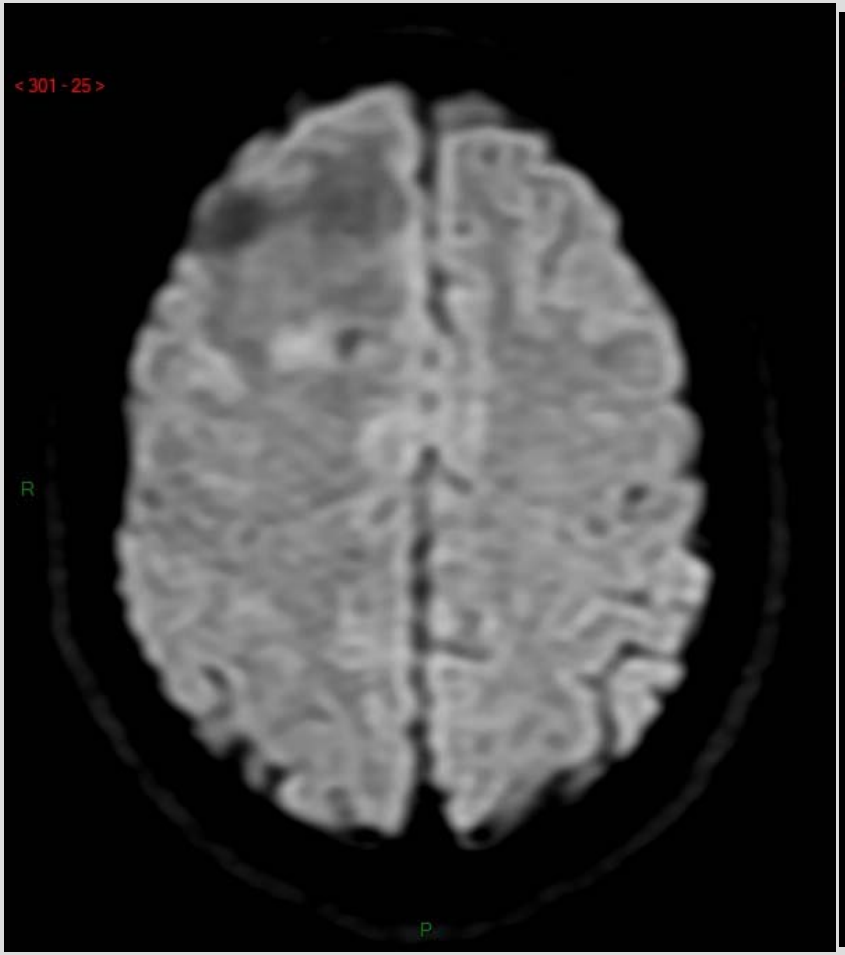
FLAIR



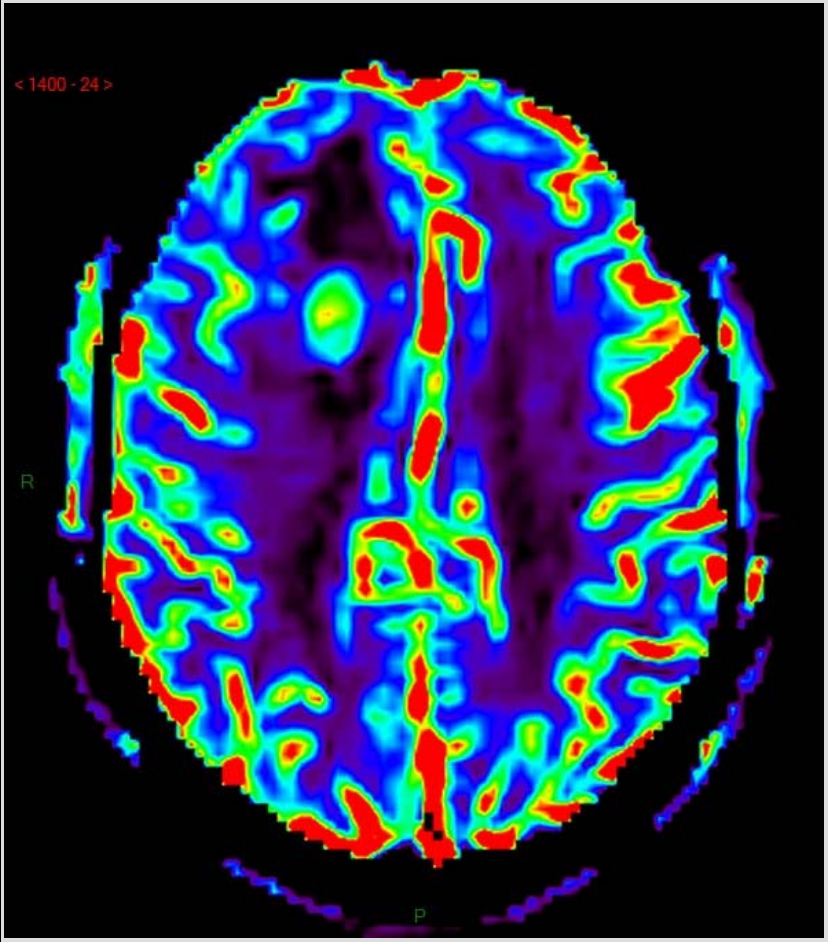
Pondération T1 (TSE) AVANT injection de PdC



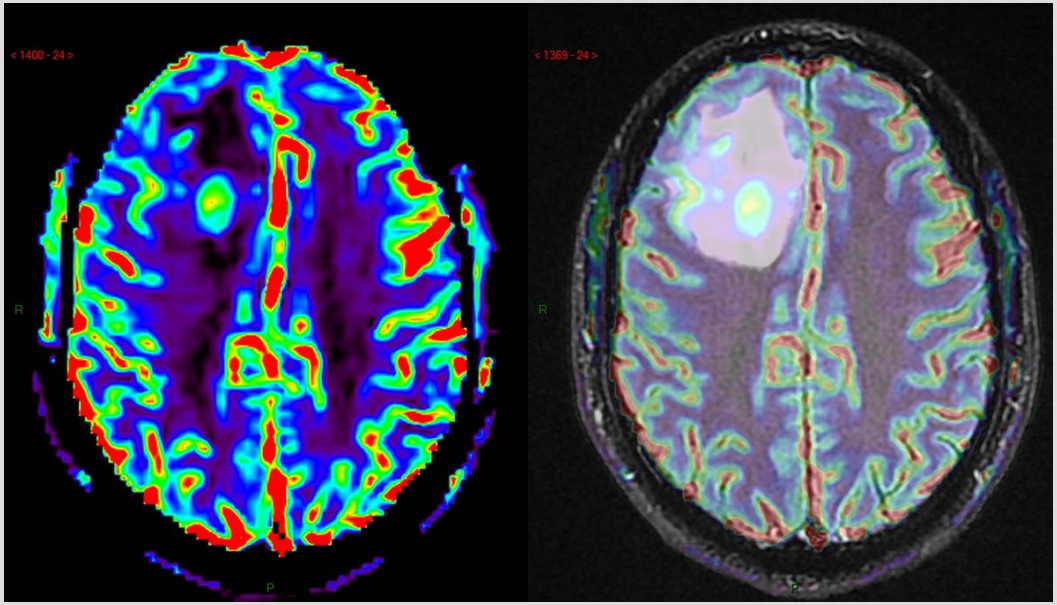
Pondération T1 (GRE) APRES injection de PdC



Séquence pondérée en diffusion
DWI = Diffusion-weighted Imaging

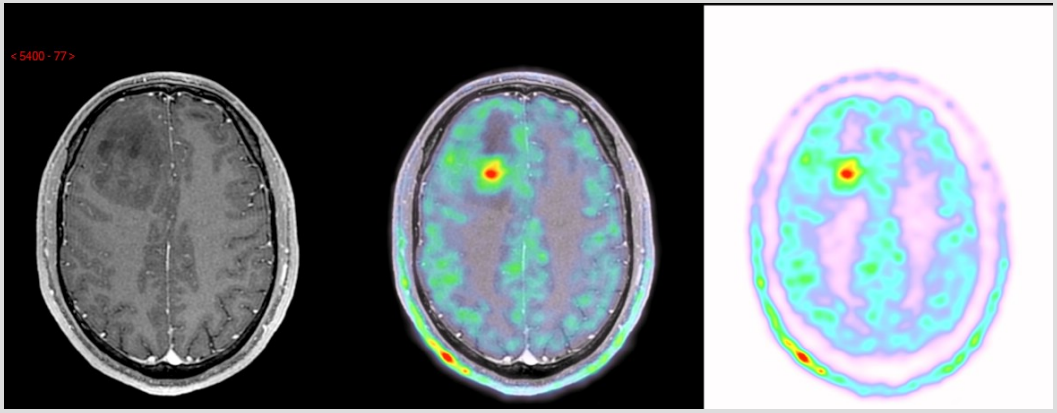


Séquence pondérée en perfusion
PWI = Perfusion-weighted Imaging (rCBV)



Superposition (‘overlay’) entre:

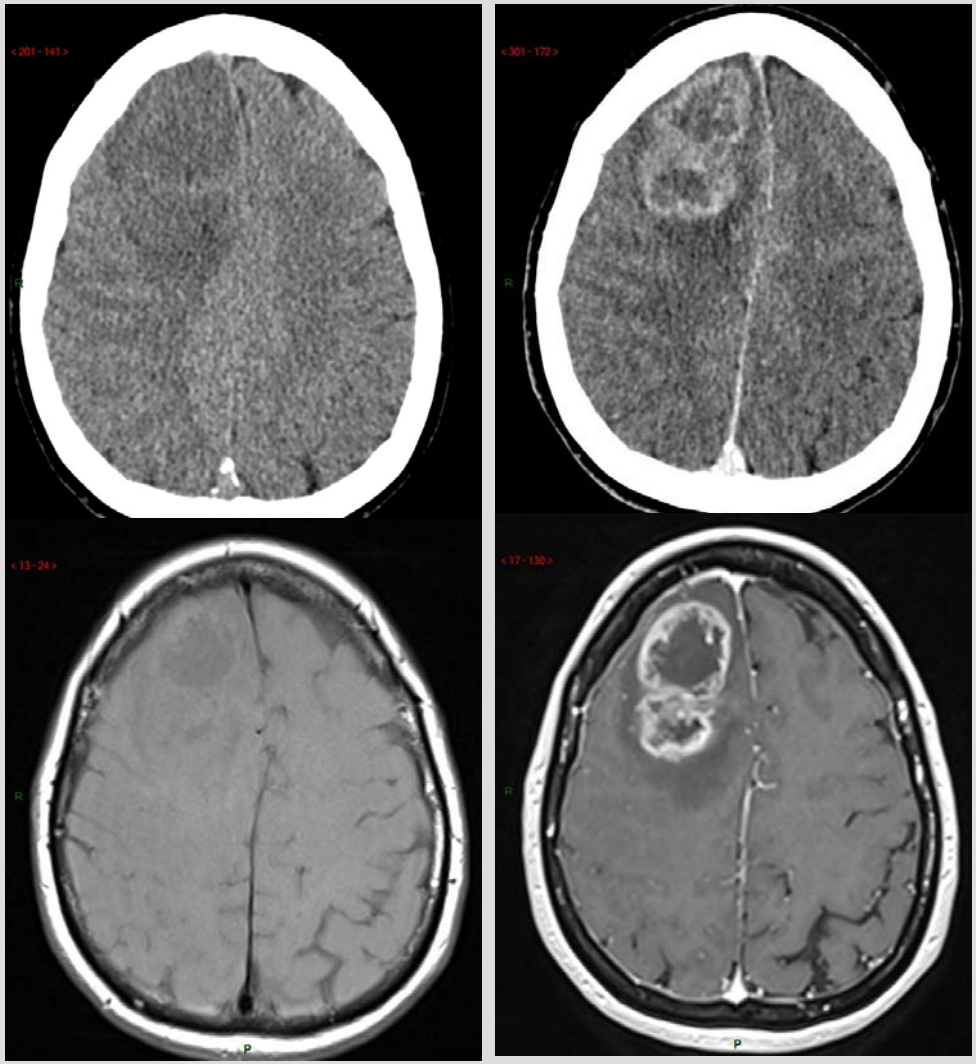
- imagerie de perfusion (à gauche) …
- … et imagerie anatomique (à droite)



Superposition (‘overlay’) au milieu entre:

- imagerie de anatomique T1 (à droite)
- et imagerie métabolique* (à gauche)

Quelle information spécifique ?....
… convergente ou divergente entre les deux modalités ?

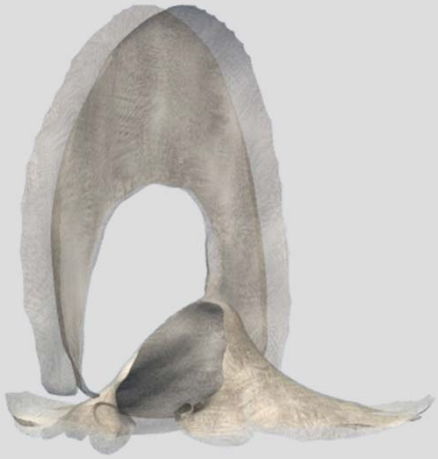


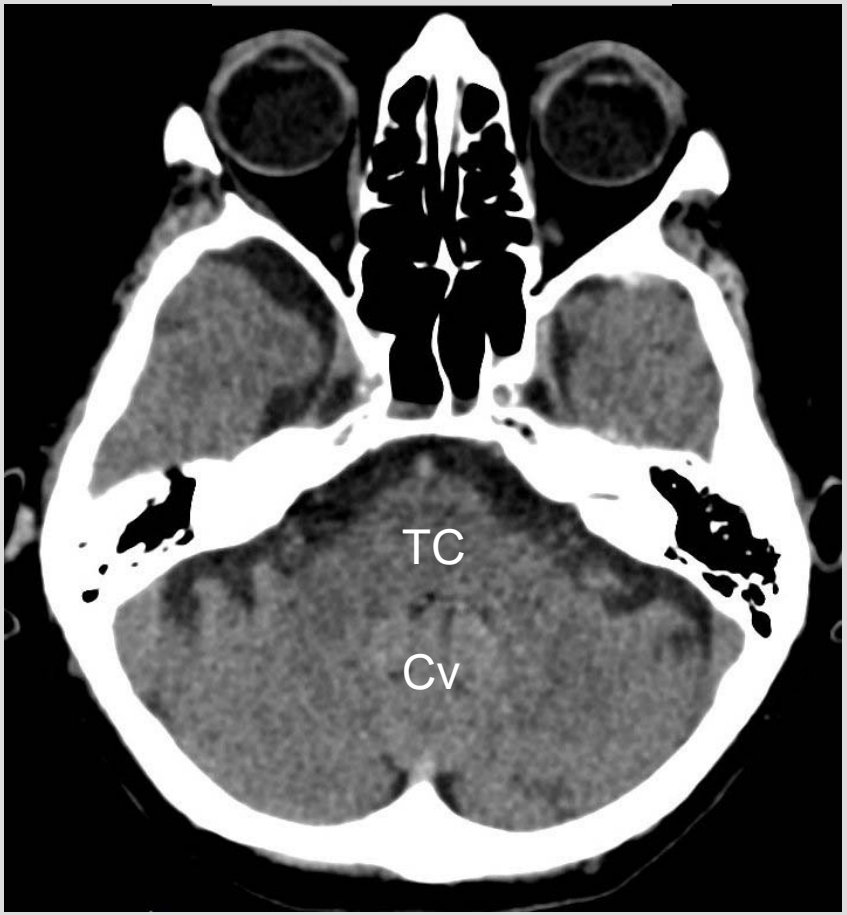
CT scanner sans et avec produit de contraste

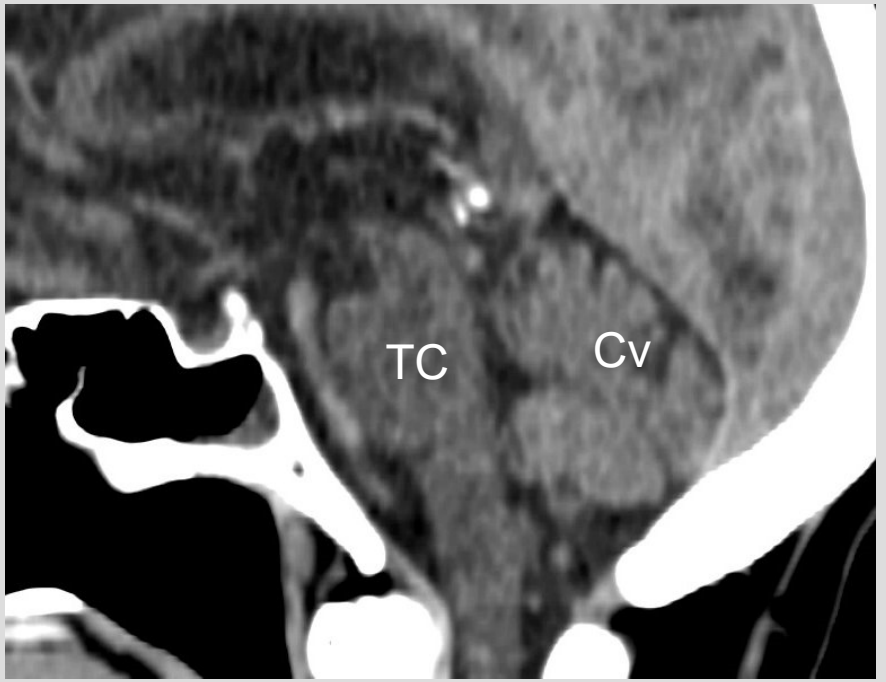
IRM pondérée T1 sans et avec produit de contraste

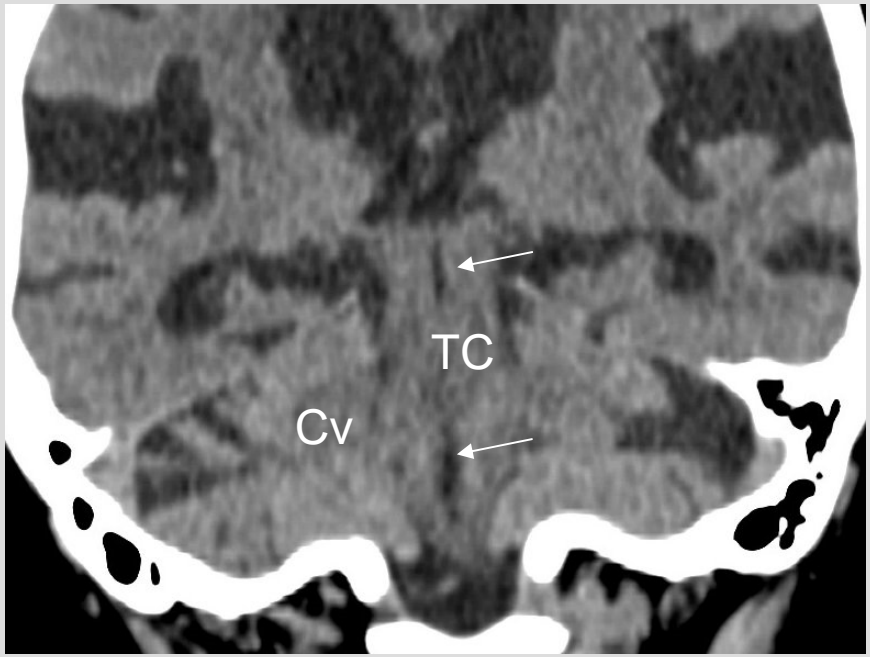
Quelle différence entre les deux modalités?
Quelle différence importante avec le cas précédent ?

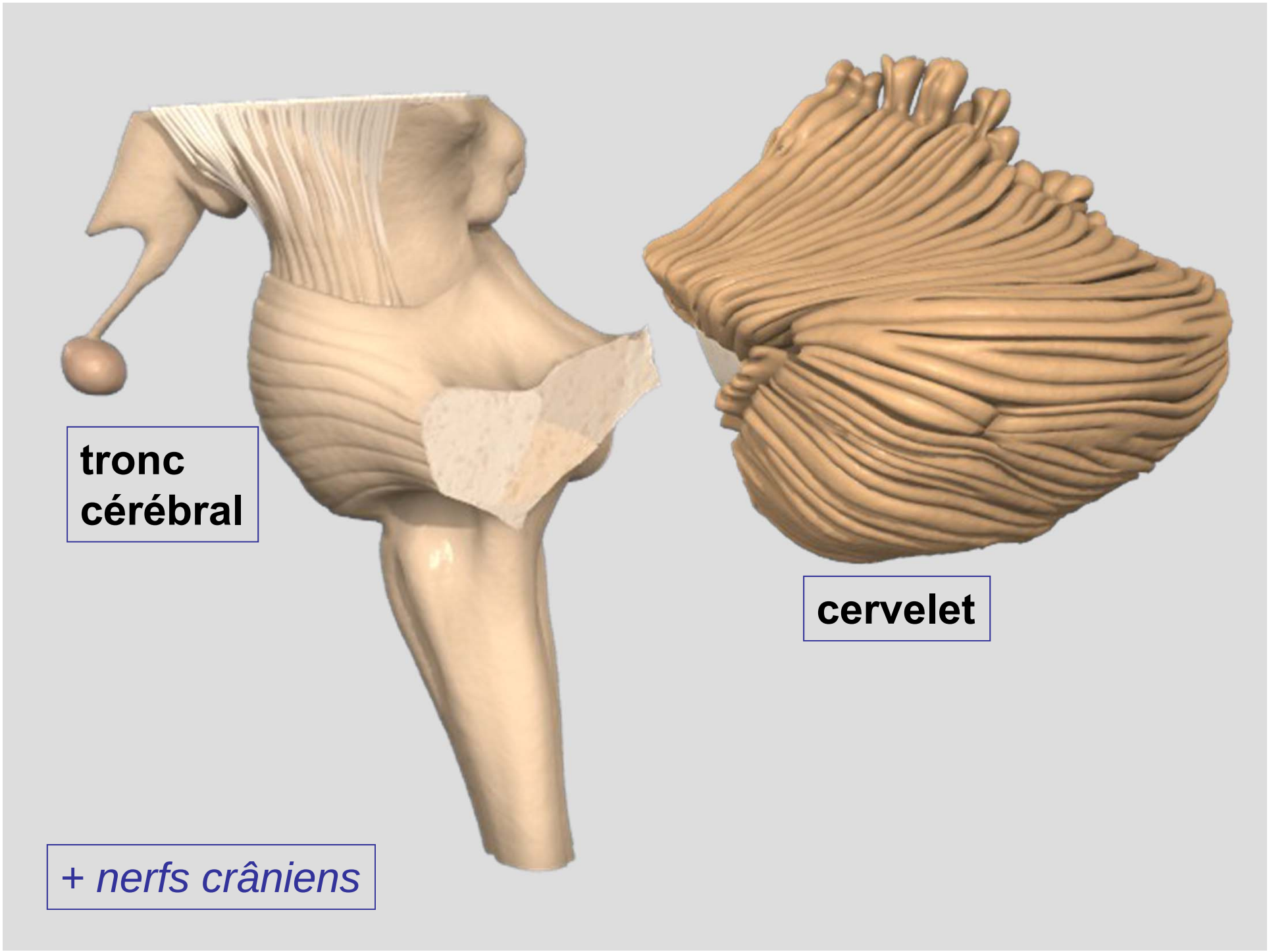
Fosse postérieure
et
paires crâniennes

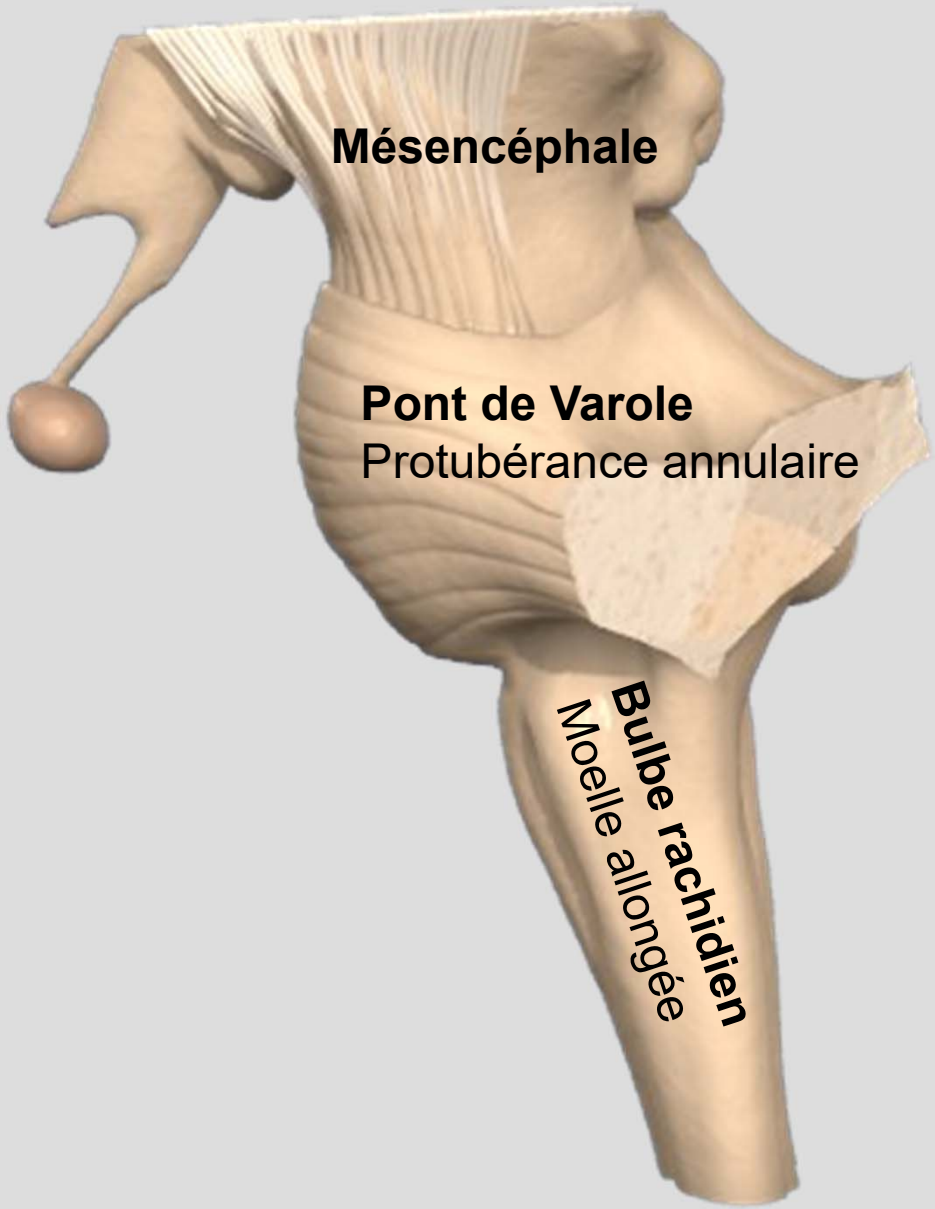



TC
Cv

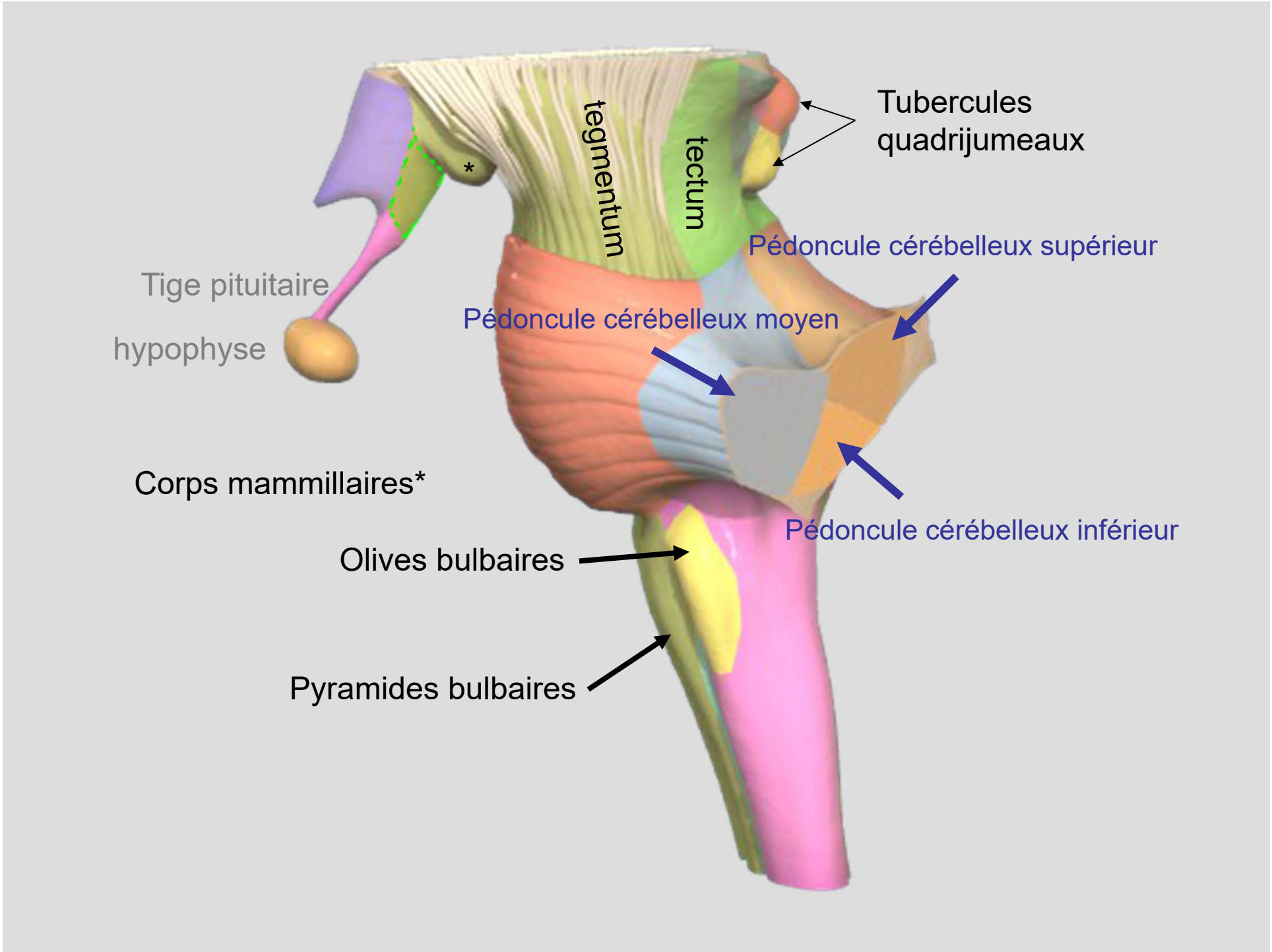

TC
Cv

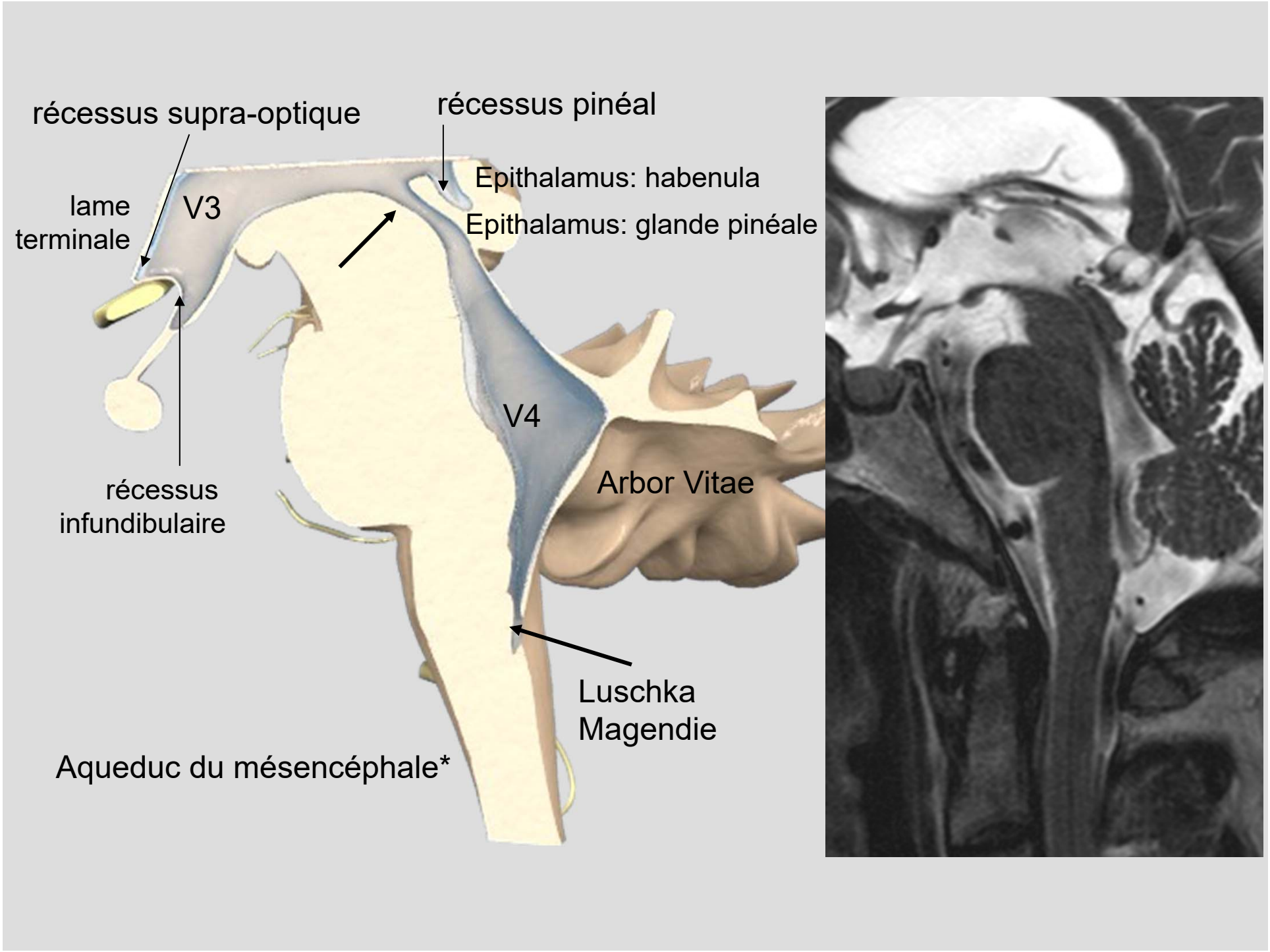

TC
Cv


tronc cérébral
cervelet
+ nerfs crâniens



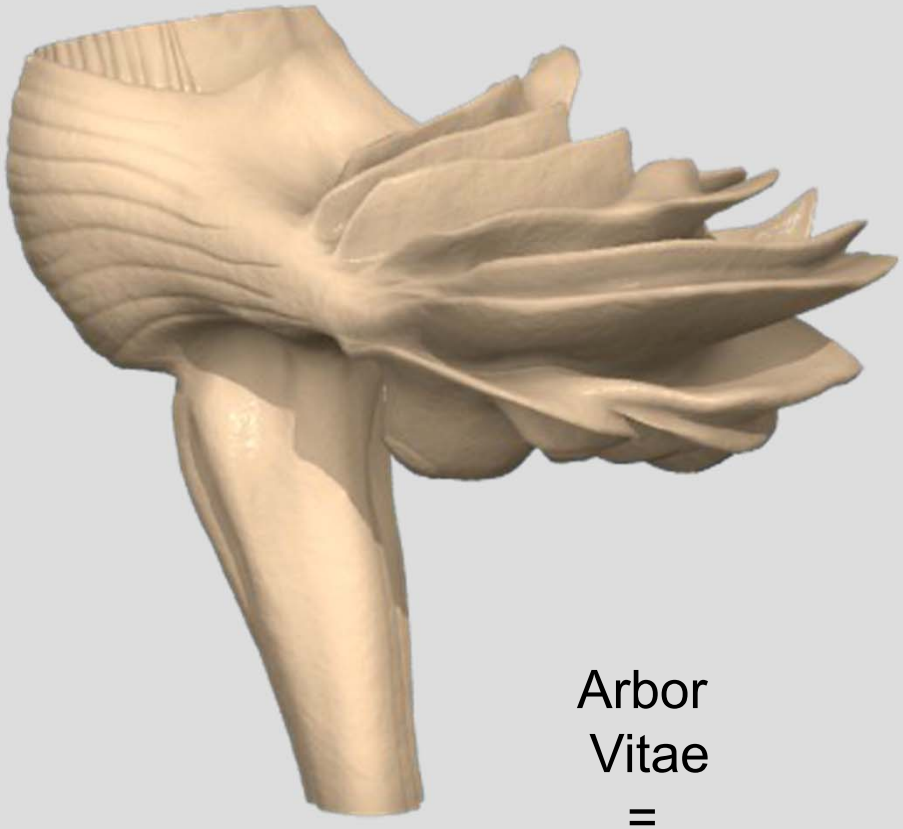
Coupe IRM sagittale médiane pondérée T1


Tubercules
quadrijumeaux
tegmentum
tectum
*
Pédoncule cérébelleux supérieur
Tige pituitaire
hypophyse
Pédoncule cérébelleux moyen
Corps mammillaires*
Pédoncule cérébelleux inférieur
Olives bulbaires
Pyramides bulbaires

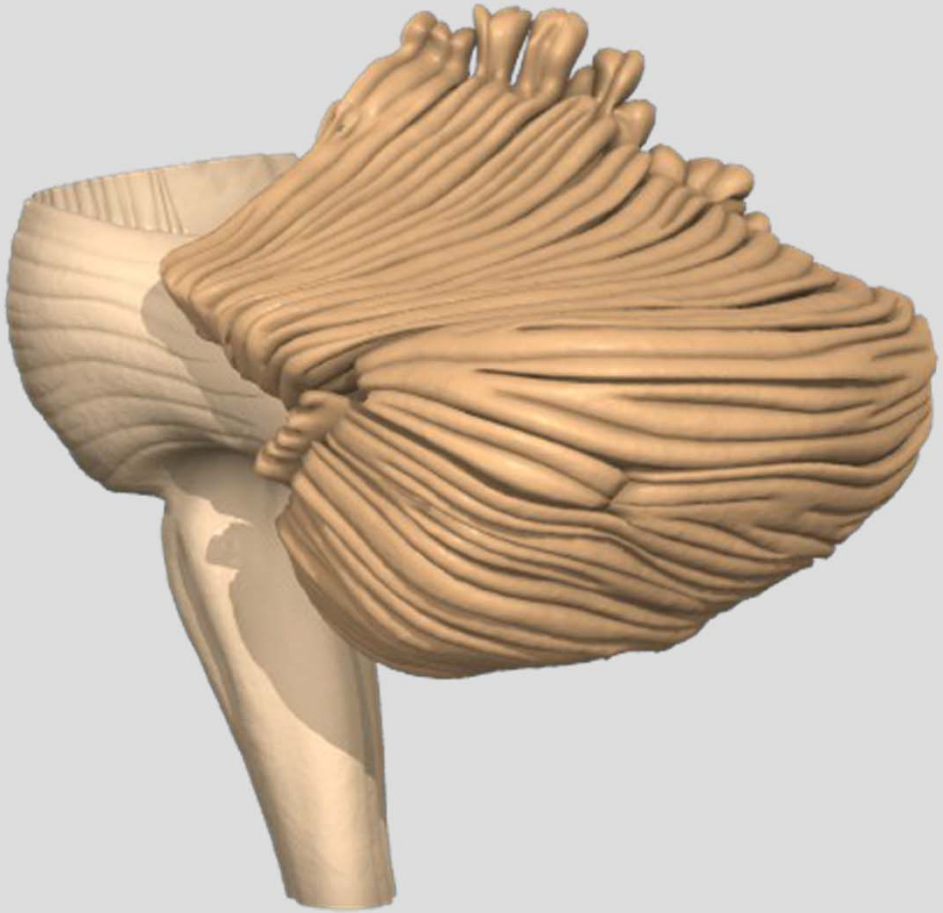

récessus supra-optique
récessus pinéal
Epithalamus: habenula
Epithalamus: glande pinéale
lame terminale
V3
V4
Arbor Vitae
récessus infundibulaire
Luschka
Magendie
Aqueduc du mésencéphale*

Arbor Vitae

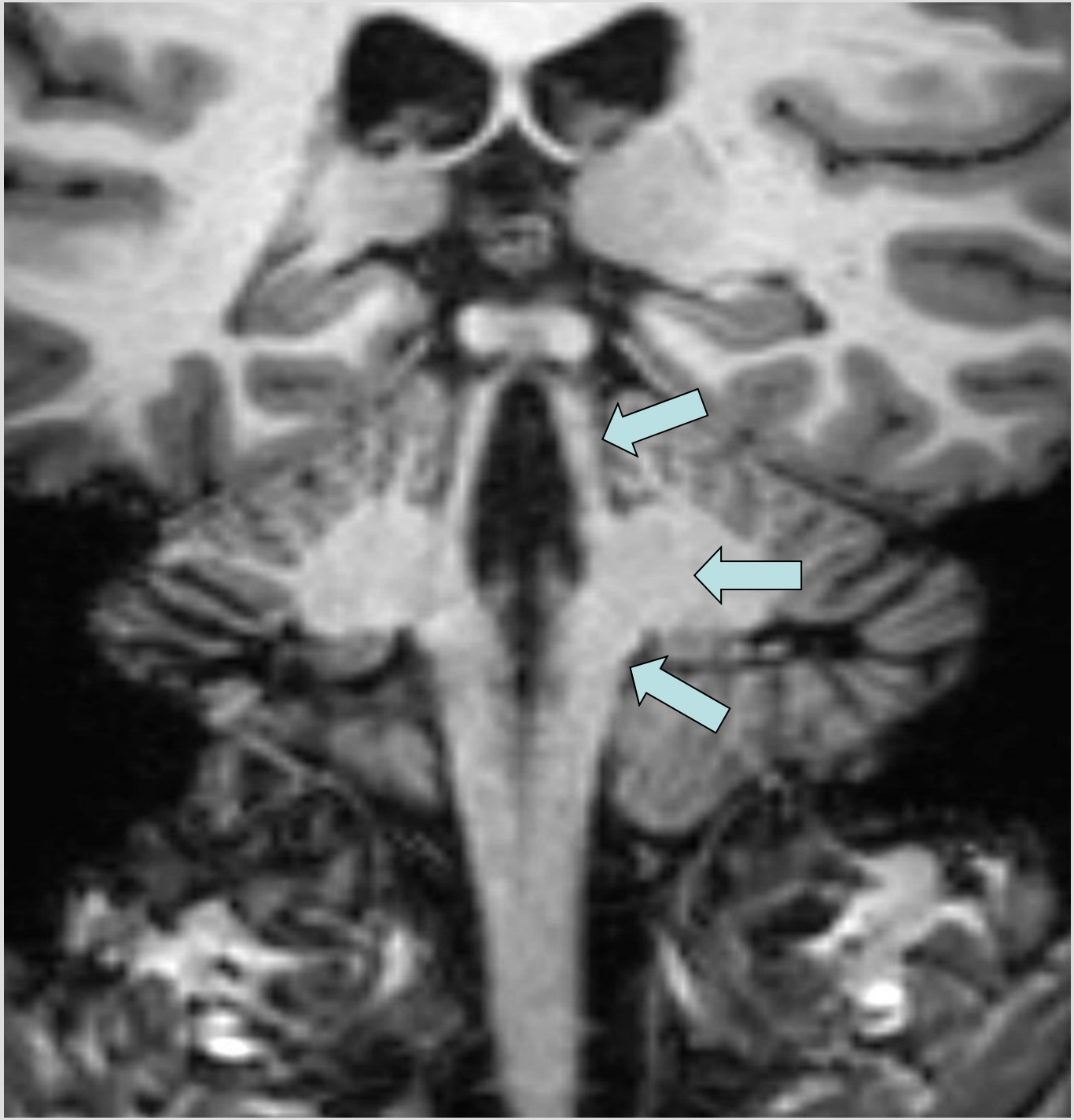
noyau dentelé

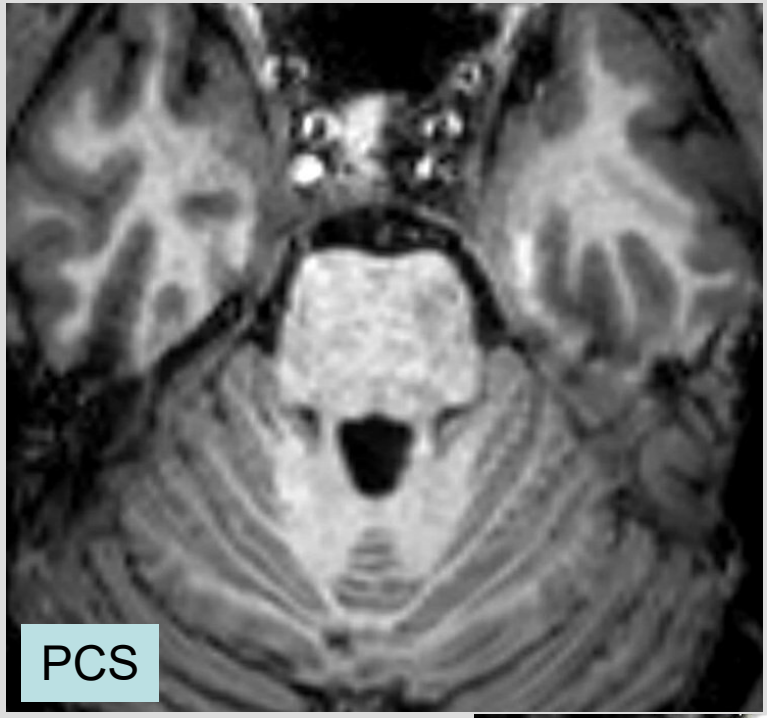


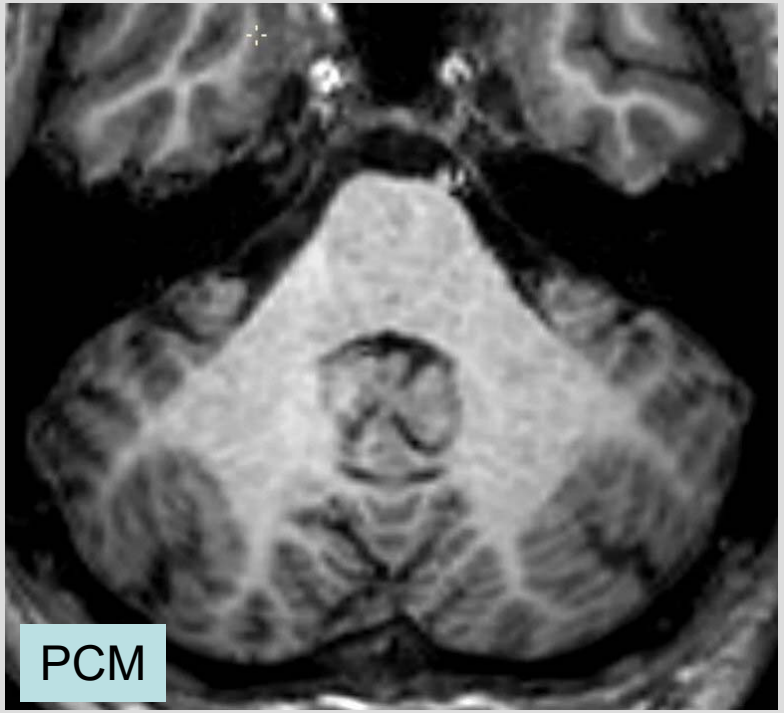
Arbor
Vitae
=
substance
blanche
cérébelleuse

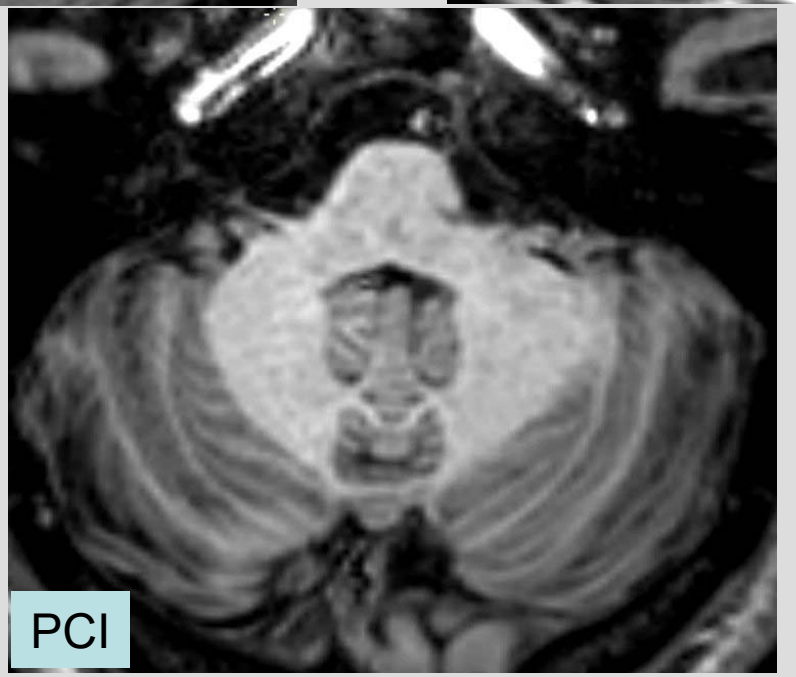


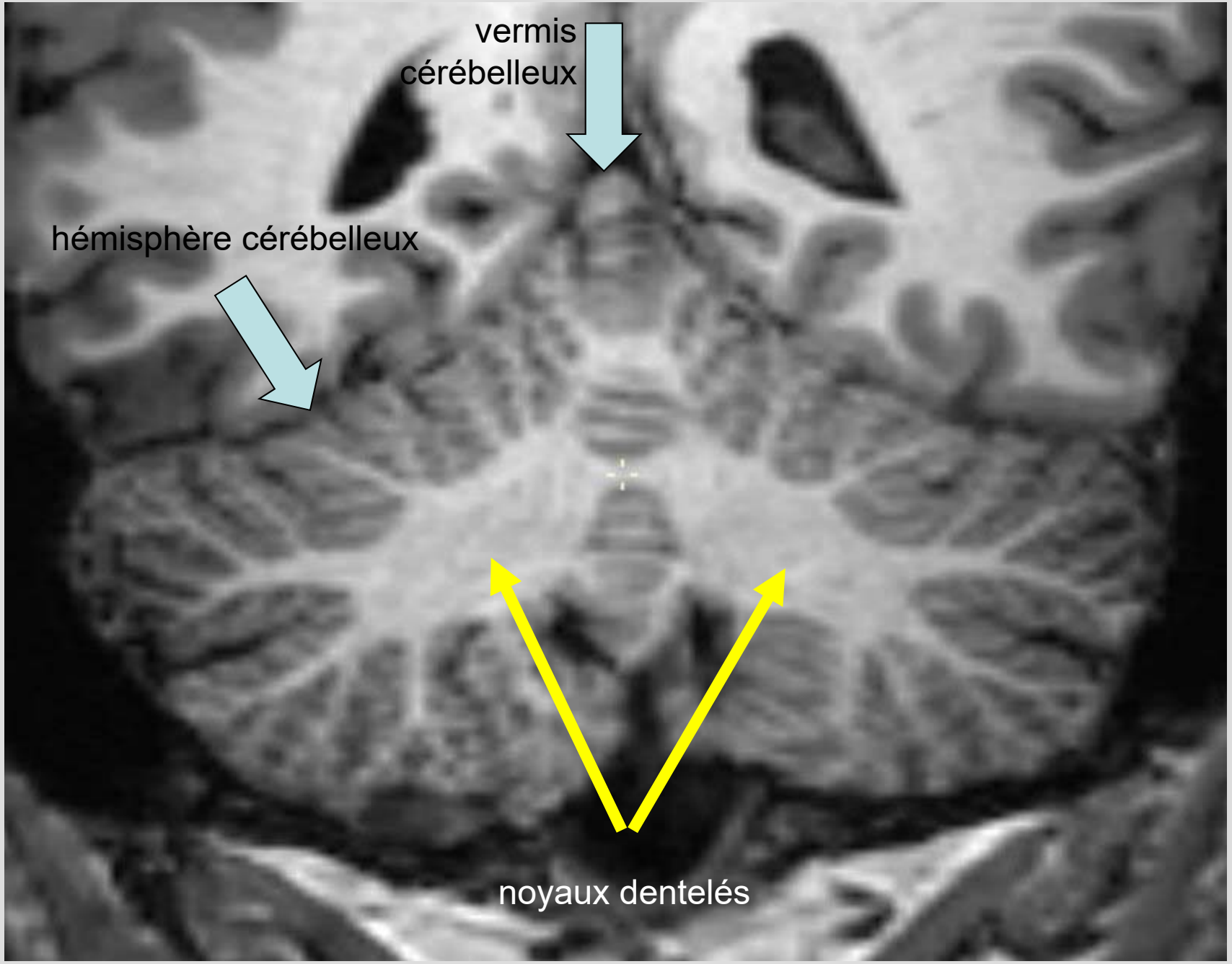
corticalité grise
(foliation)

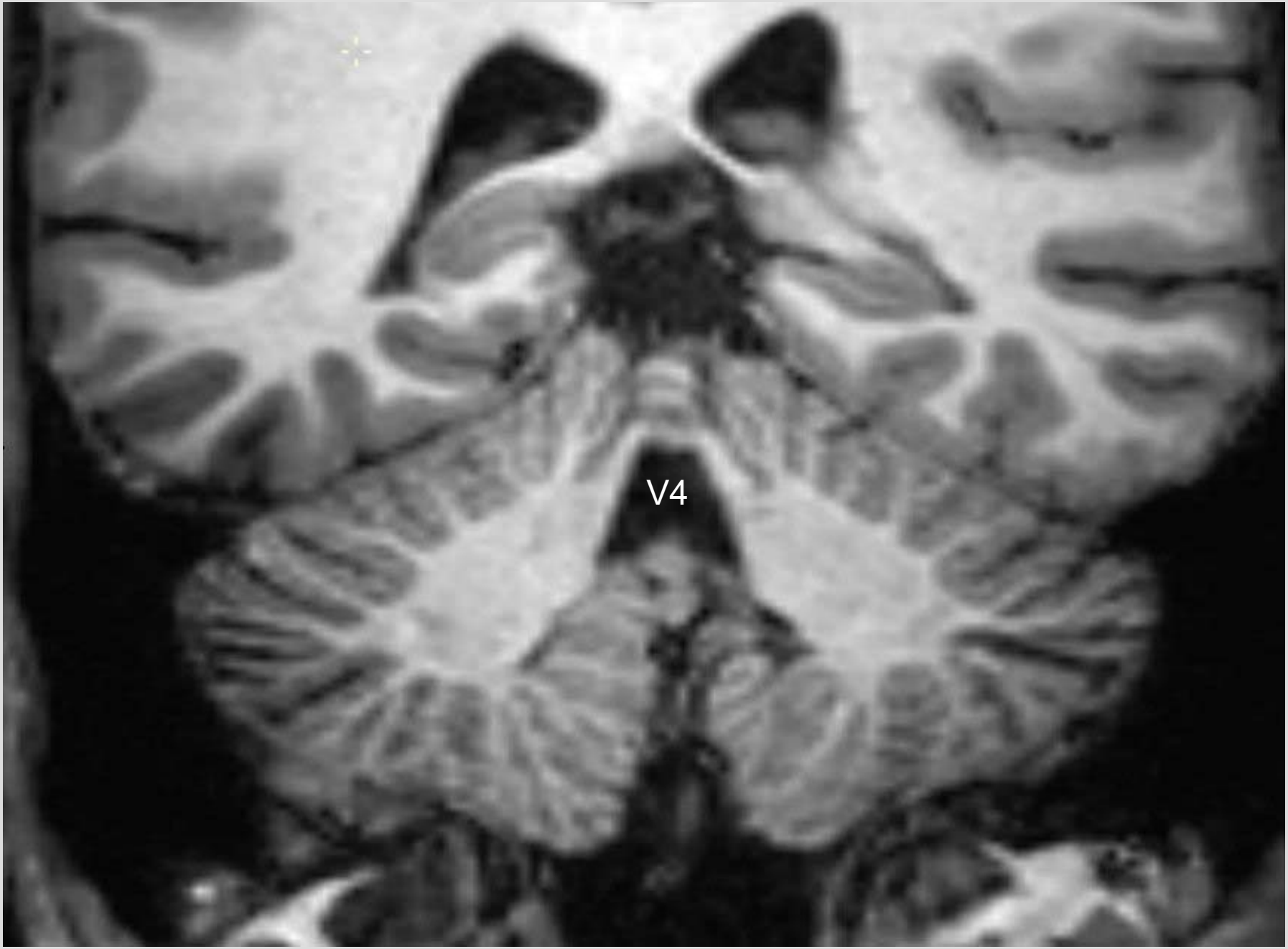



PCS

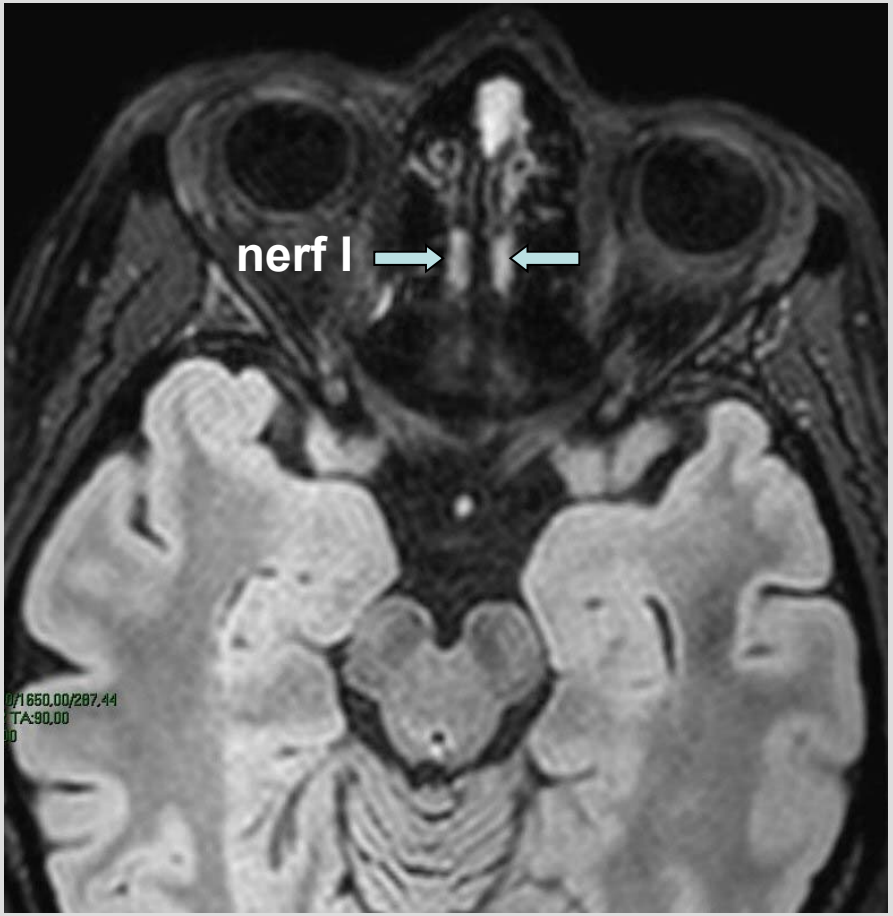

PCM

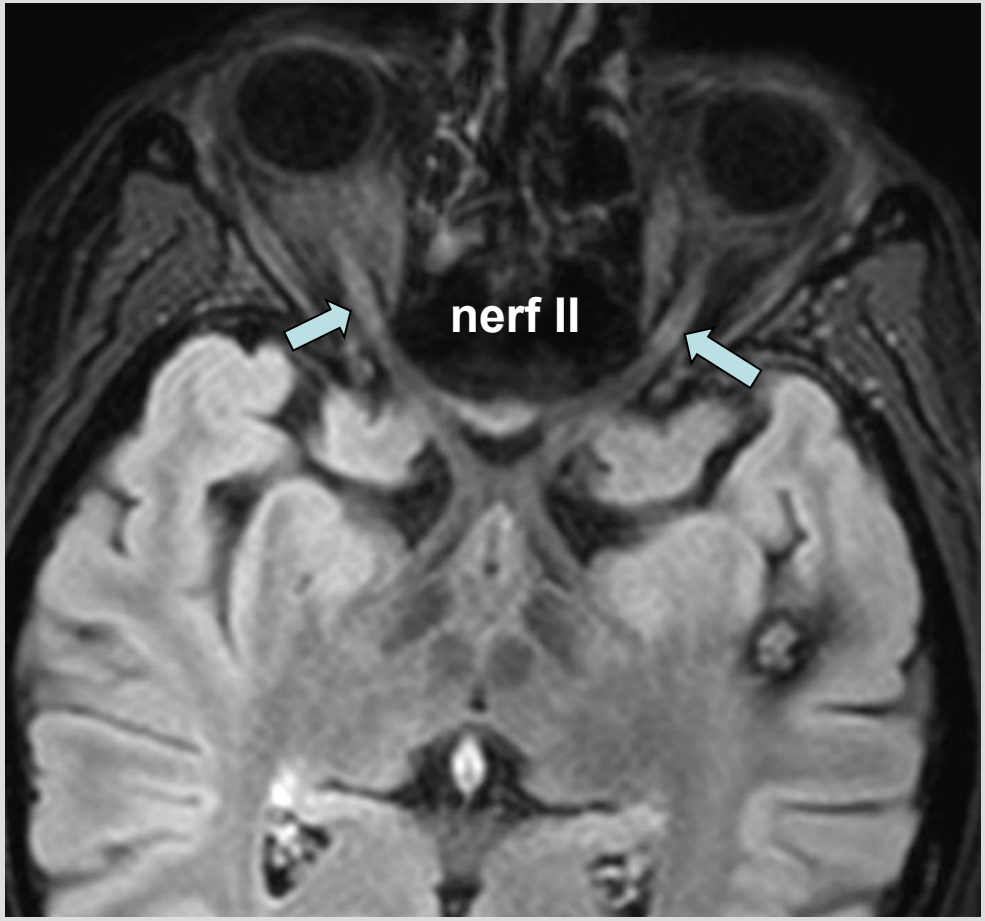

PCI

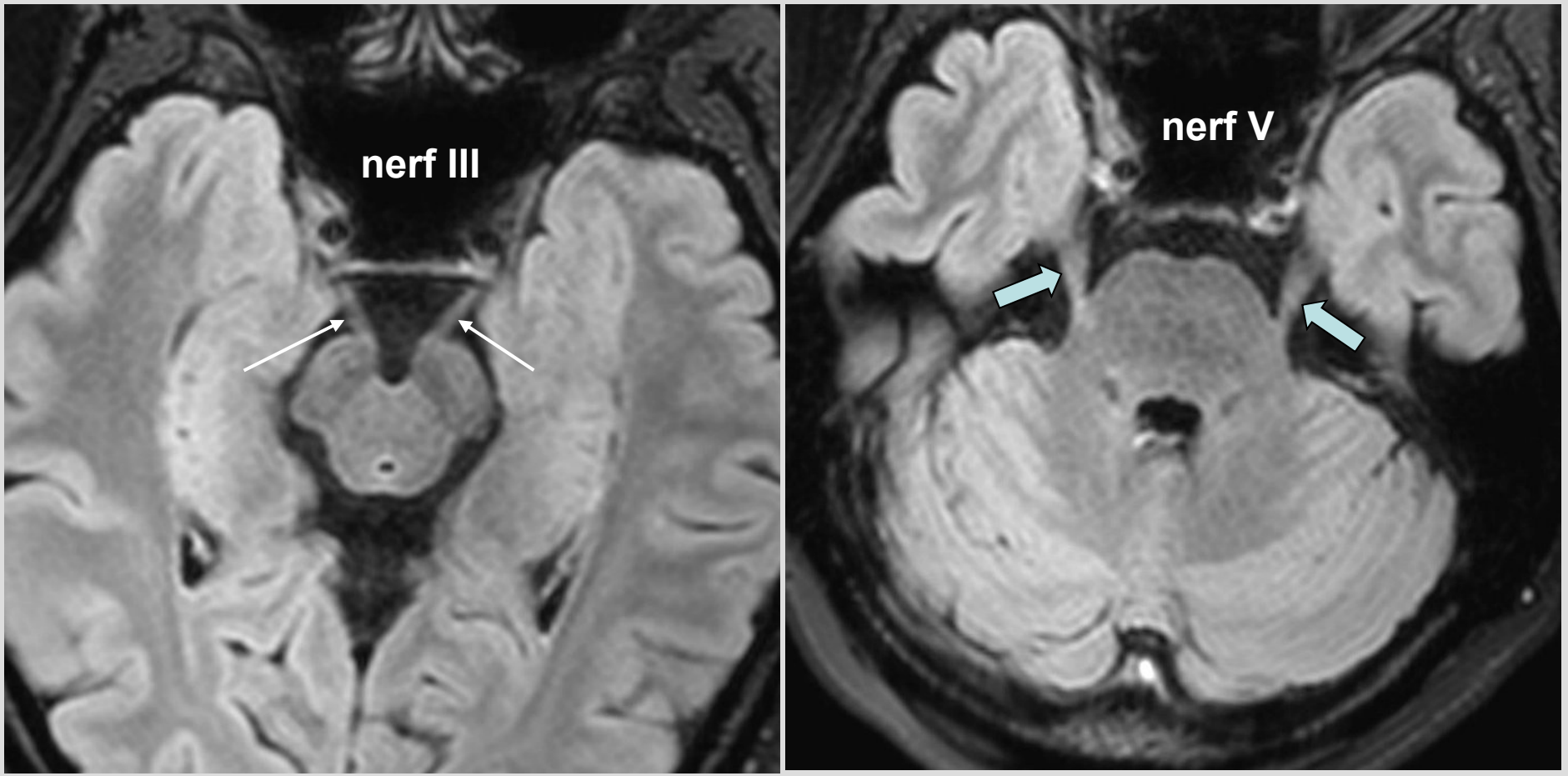

vermis
cérébelleux
hémisphère cérébelleux
noyaux dentelés

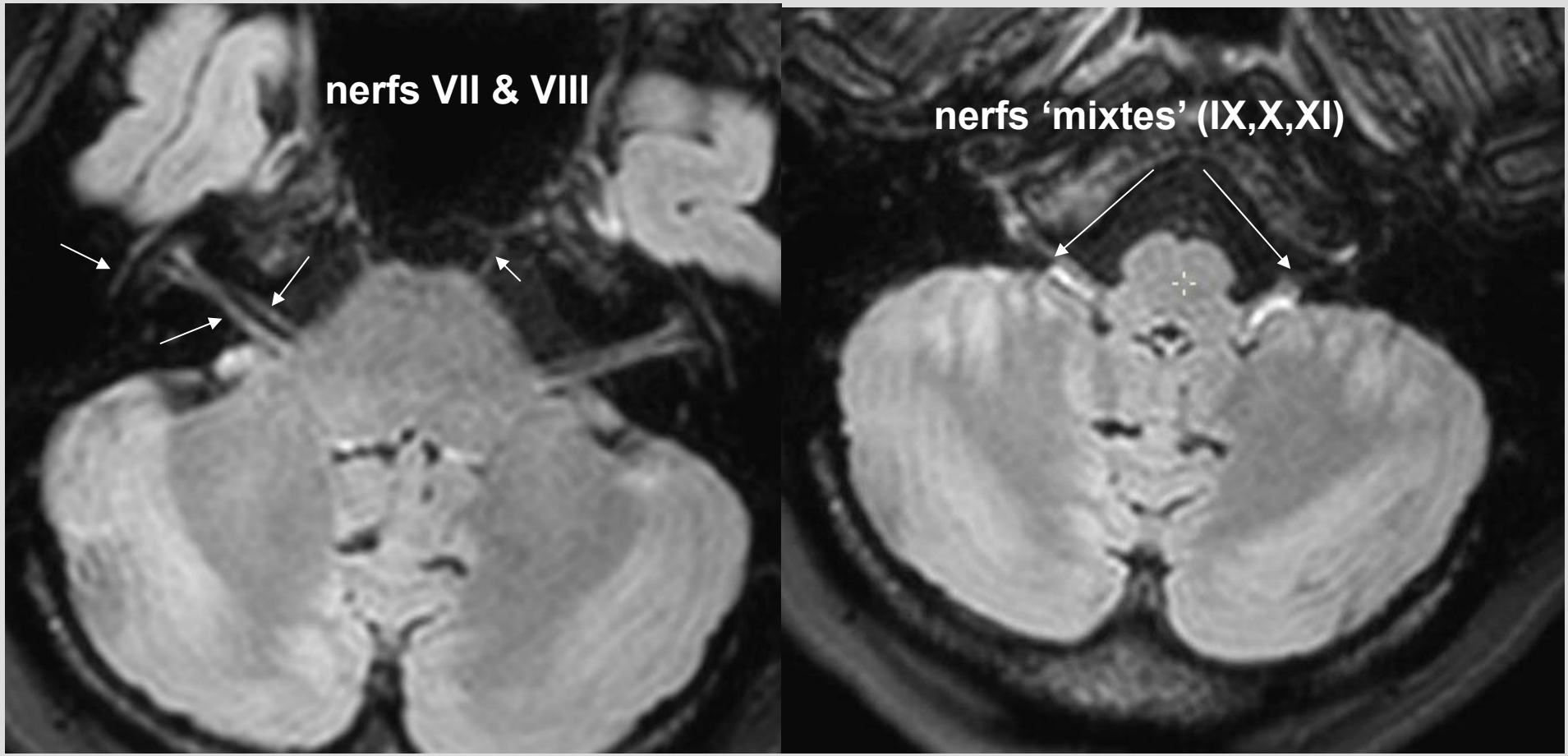

V4

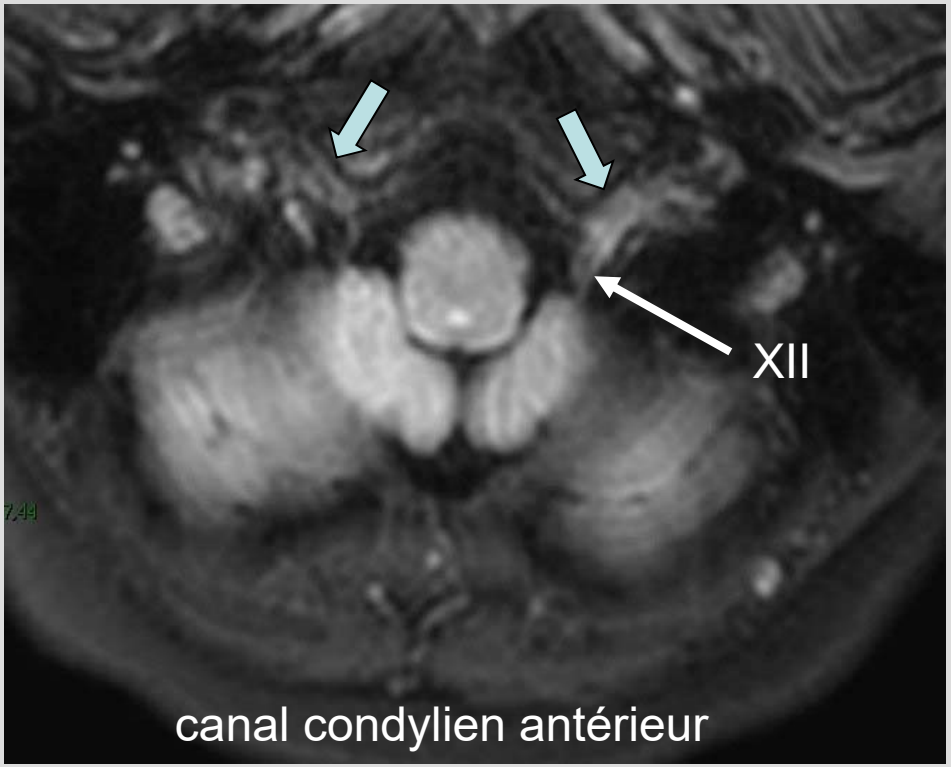
Nerfs crâniens

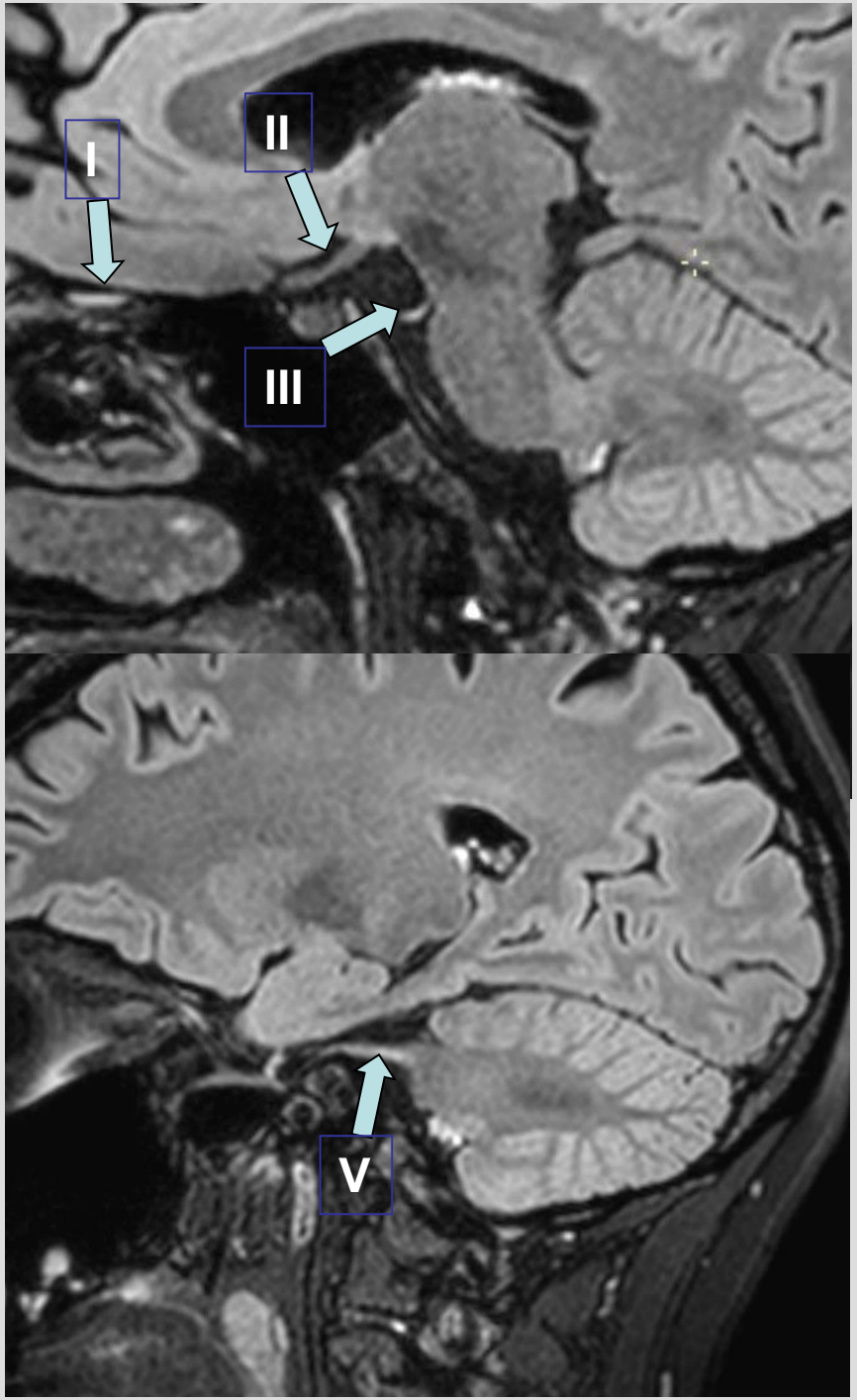





nerf III
nerf V


nerfs VII & VIII
nerfs ‘mixtes’ (IX,X,XI)


XII
canal condylien antérieur


I
II
III
V

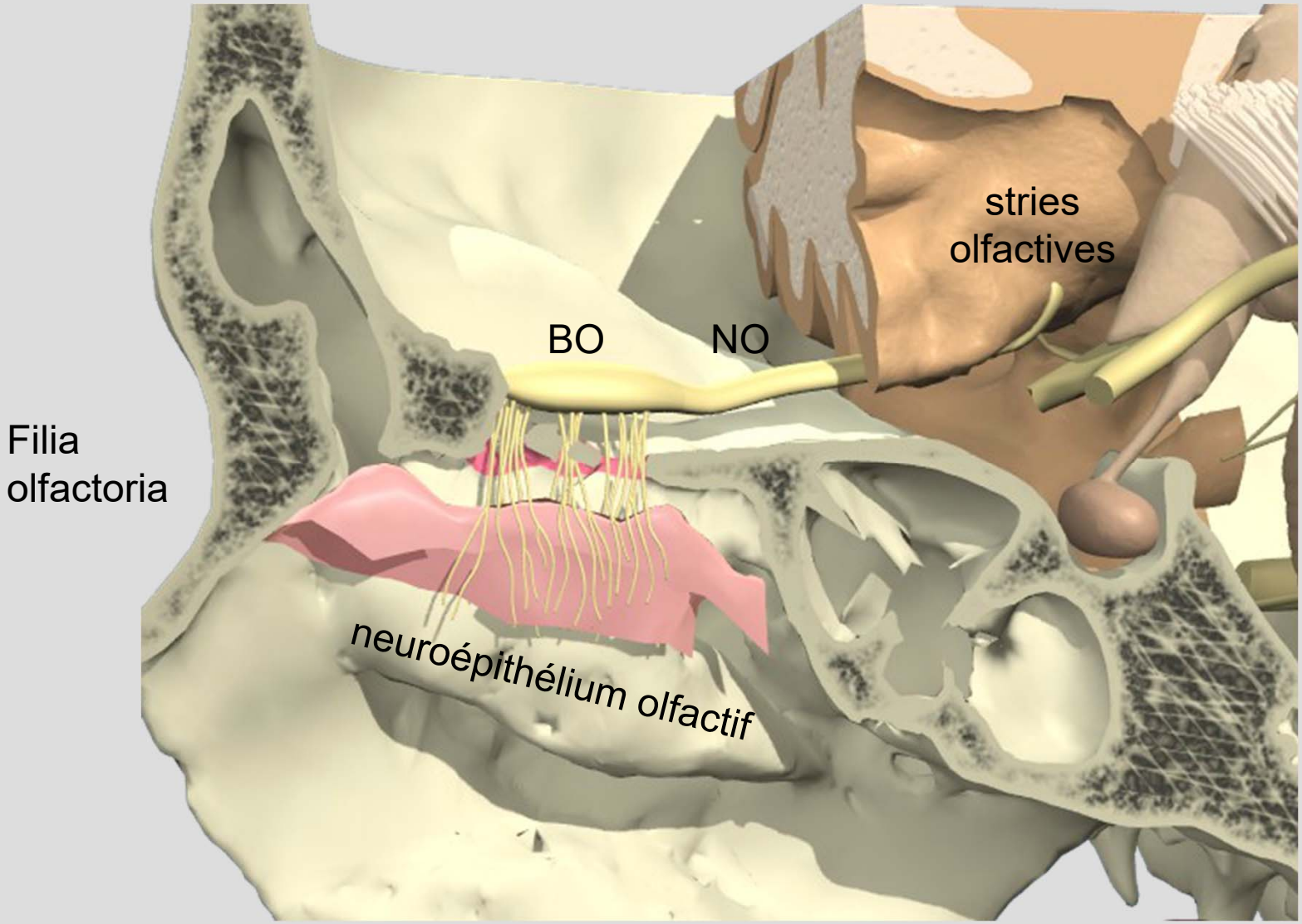
Paires crâniennes

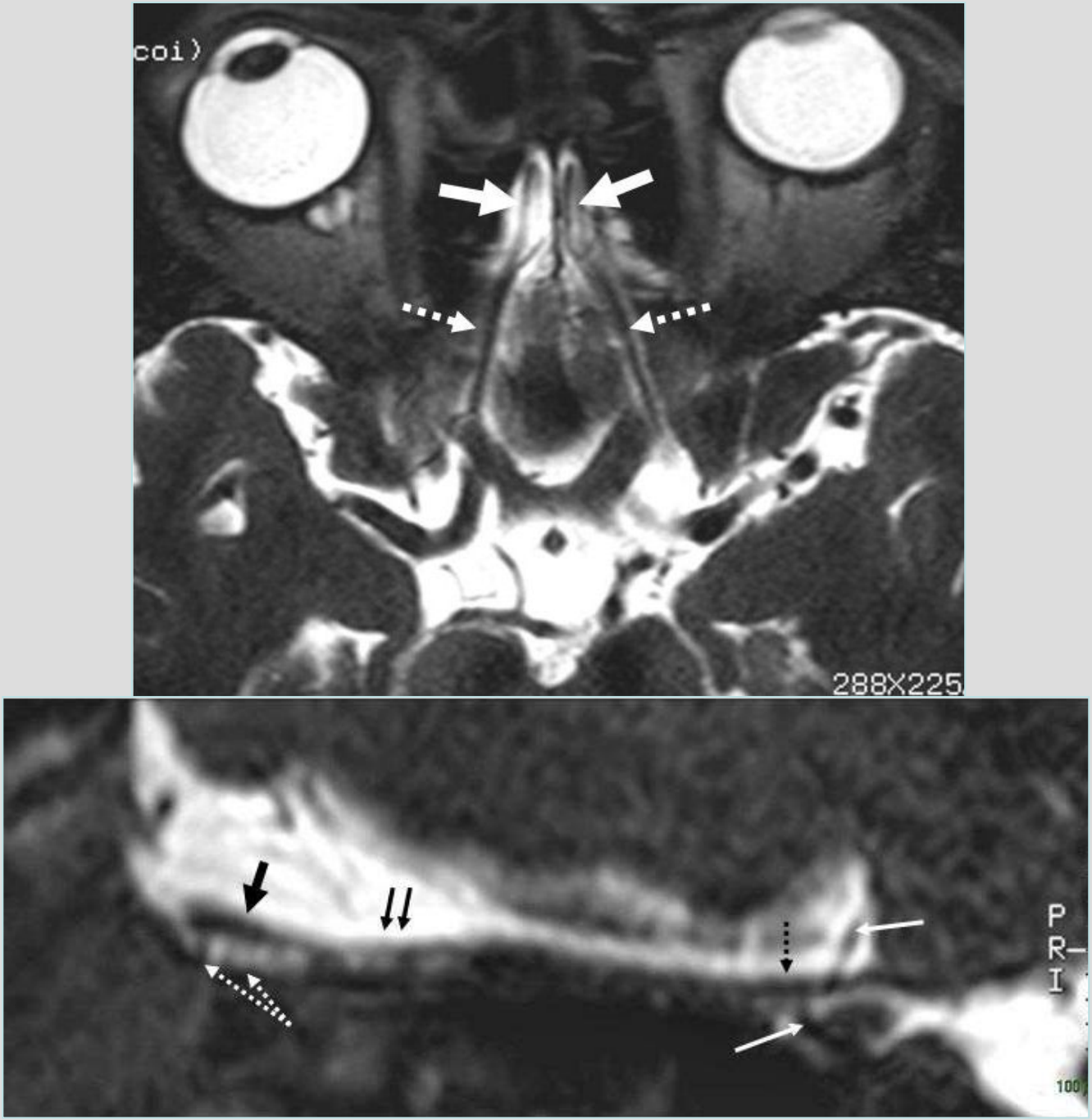
1. Modalités sensorielles

* olfaction: nerf I
* vision: nerf II
* goût: nerfs I,V,IX,X
* audition: nerf VIII
* équilibre: nerf VIII

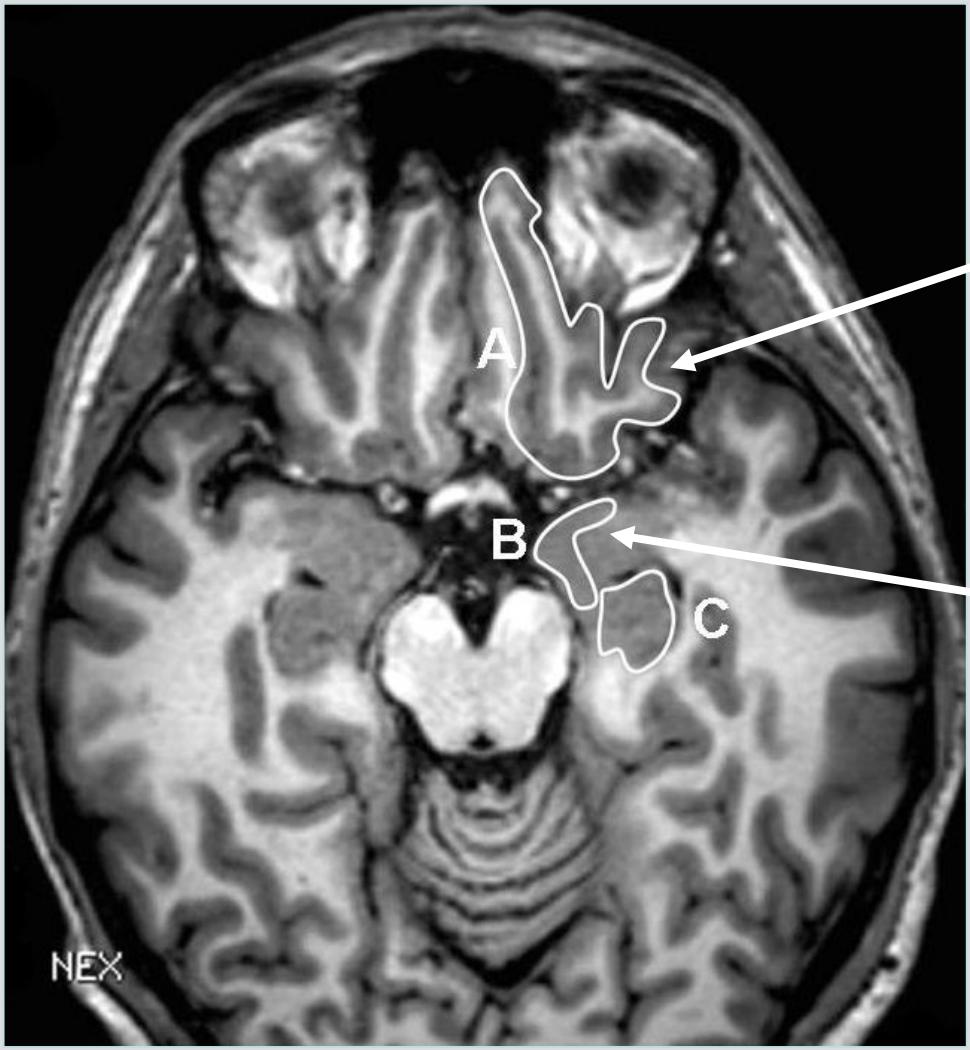
Olfaction

Nerf I *nerf olfactif*




coi)
288X225
P
R
I
100

A. Orbitofrontal olfactory cortex
(from MD thalamic nucleus)



Projections centrales

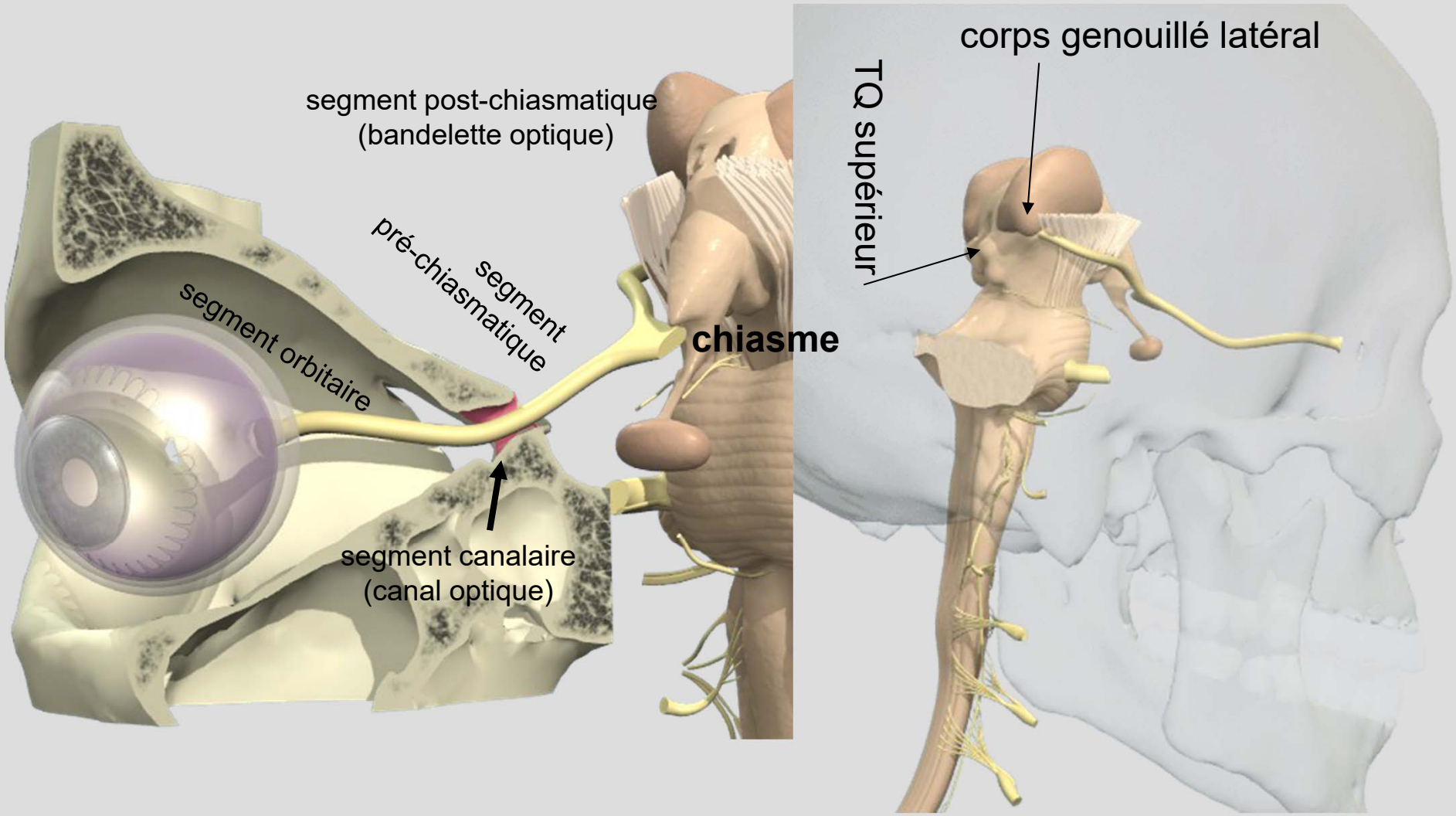
néocorticales

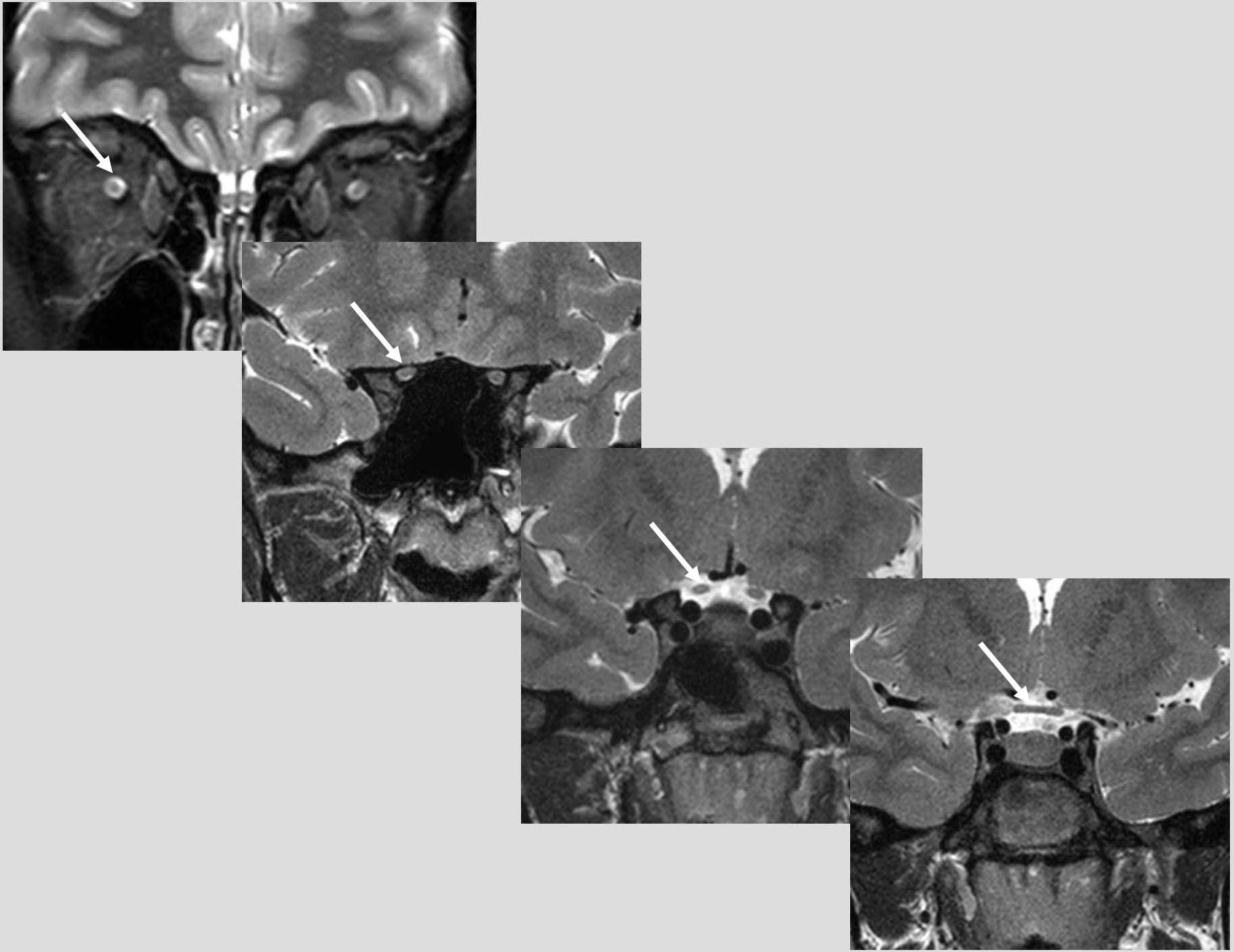
paléocorticales

B. piriform/periamygdaloid cortex:
primary olfactory cortex
C. Entorhinal cortex:
secondary olfactory cortex

Vision

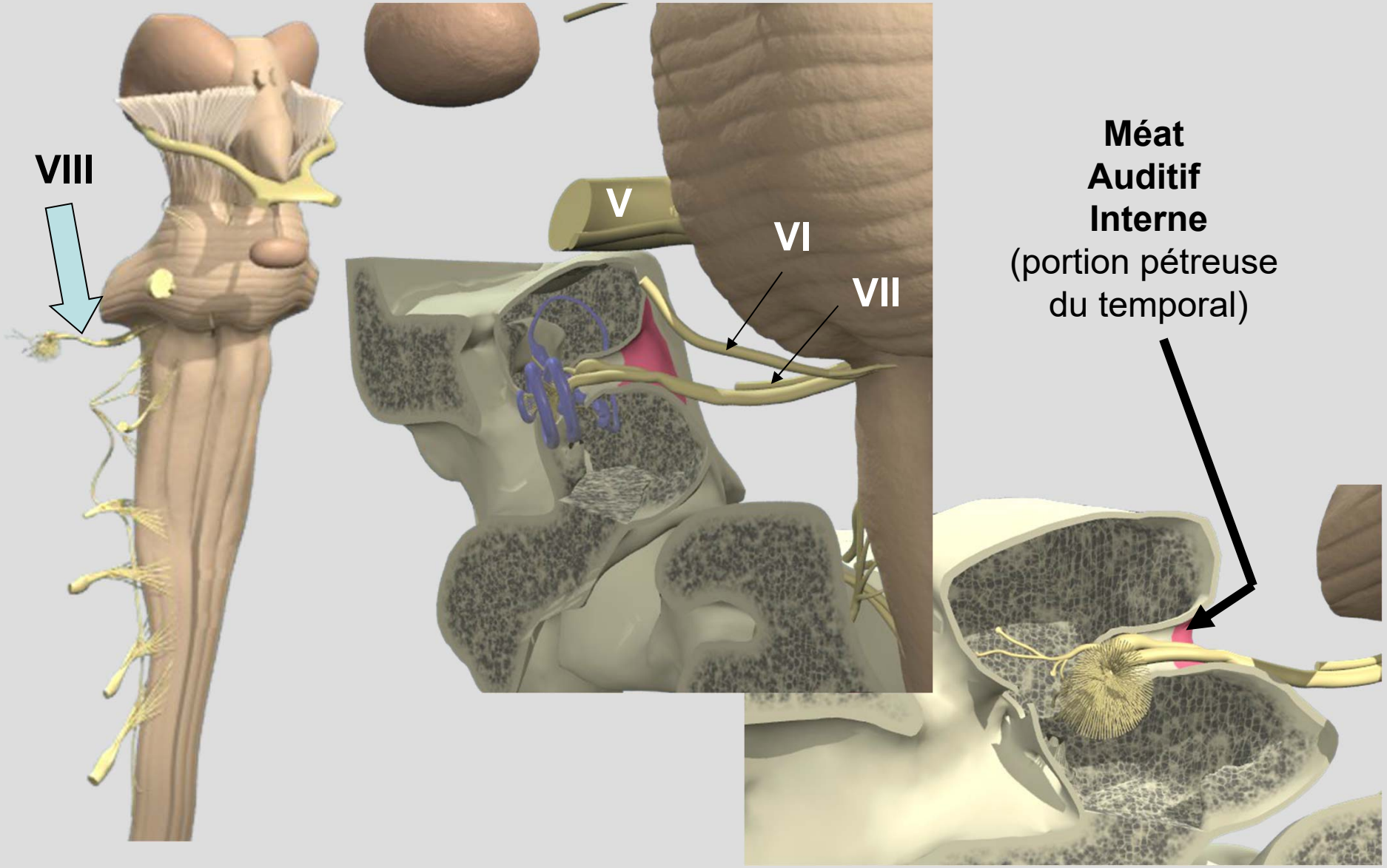
Nerf II *nerf optique*



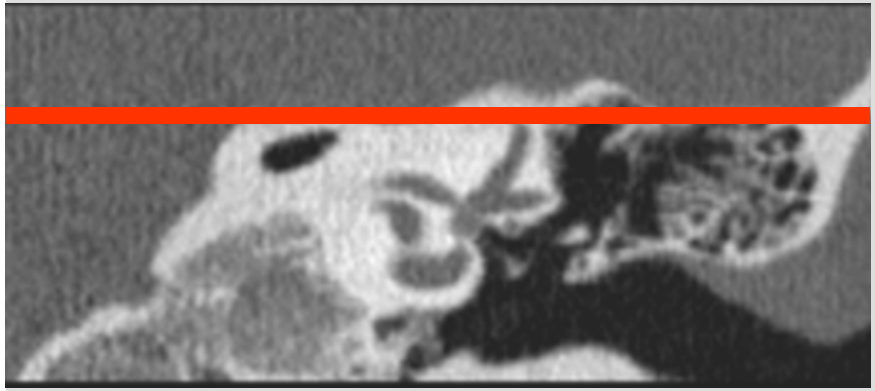


Audition - équilibre

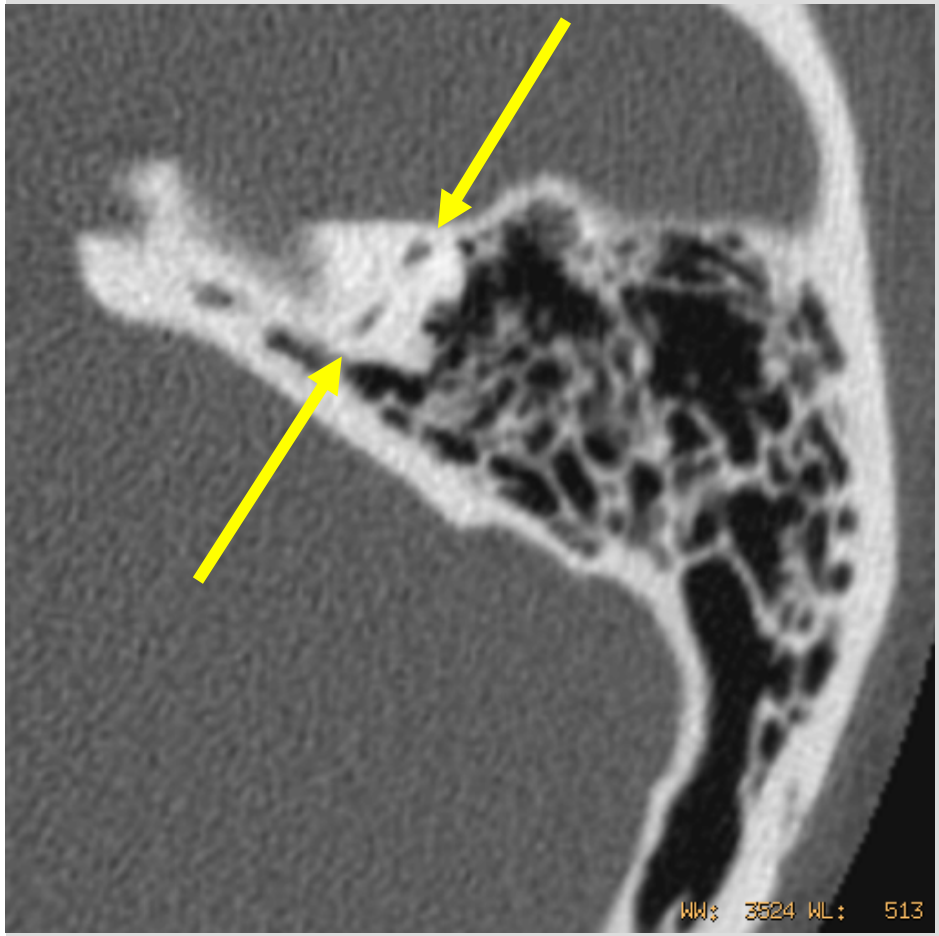
Nerf VIII *nerf vestibulo-cochléaire*



Canal semi circulaire supérieur



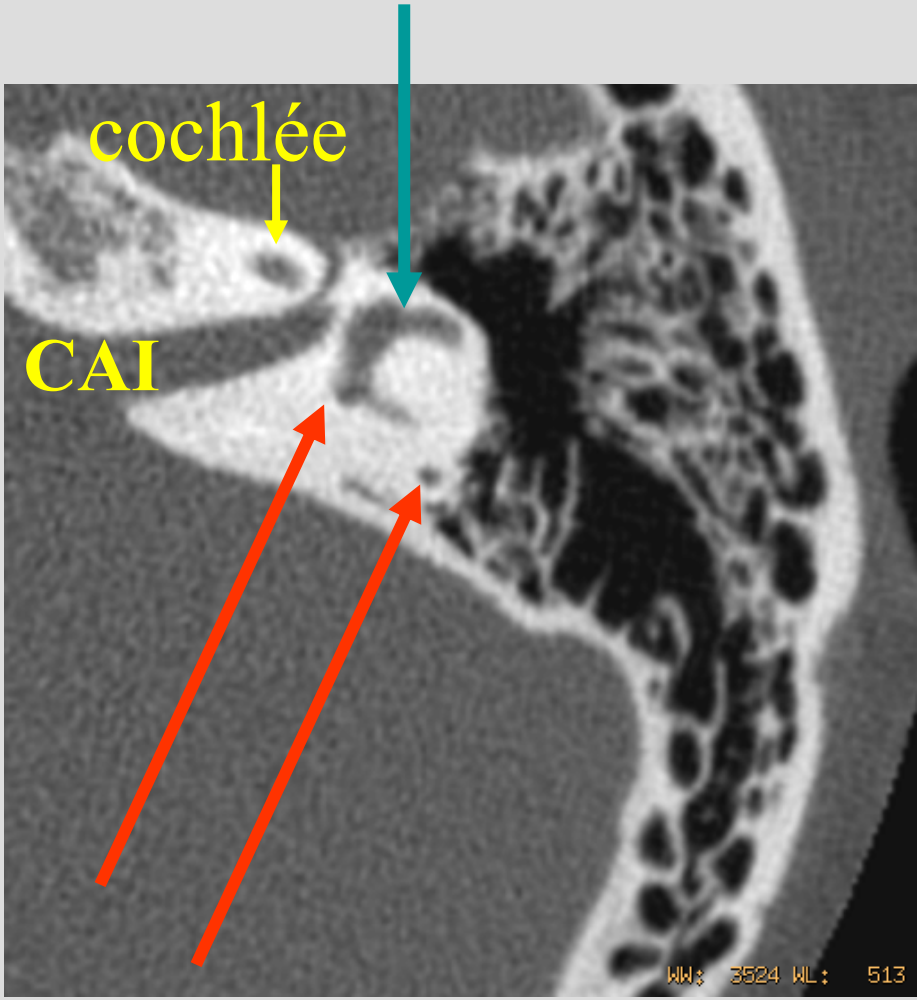
Canal semi circulaire supérieur



Canal semi circulaire supérieur

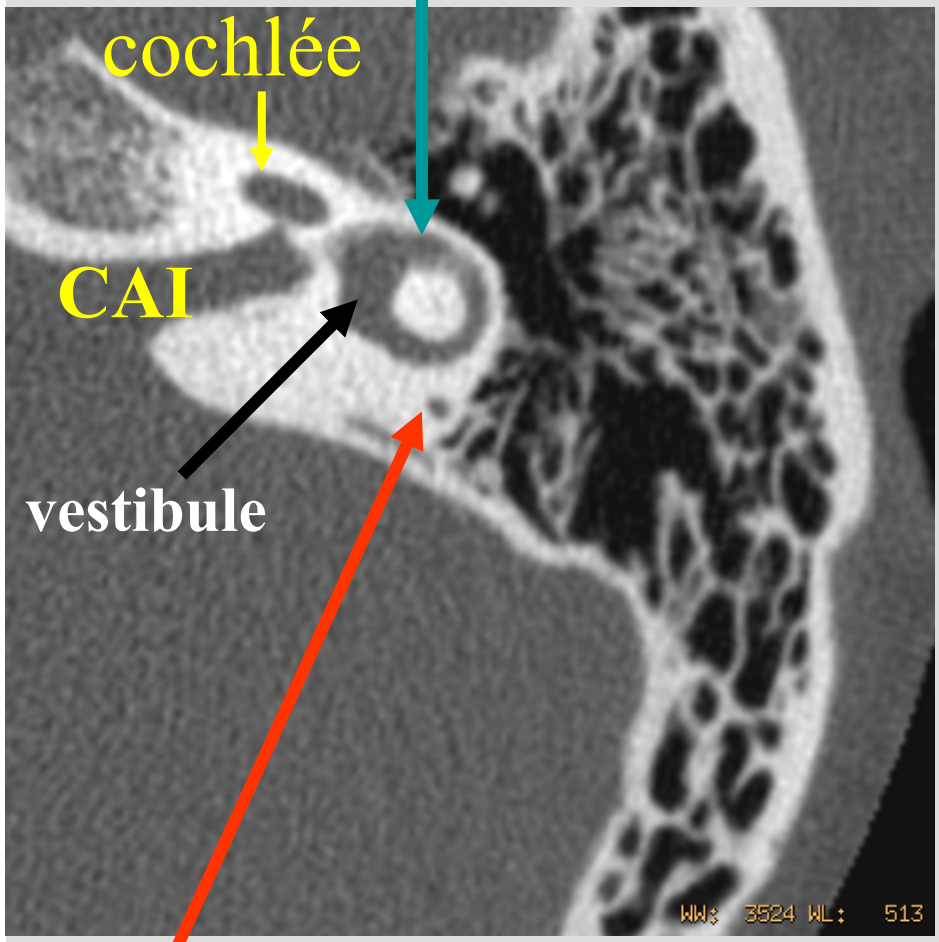
Canal semi circulaire postérieur

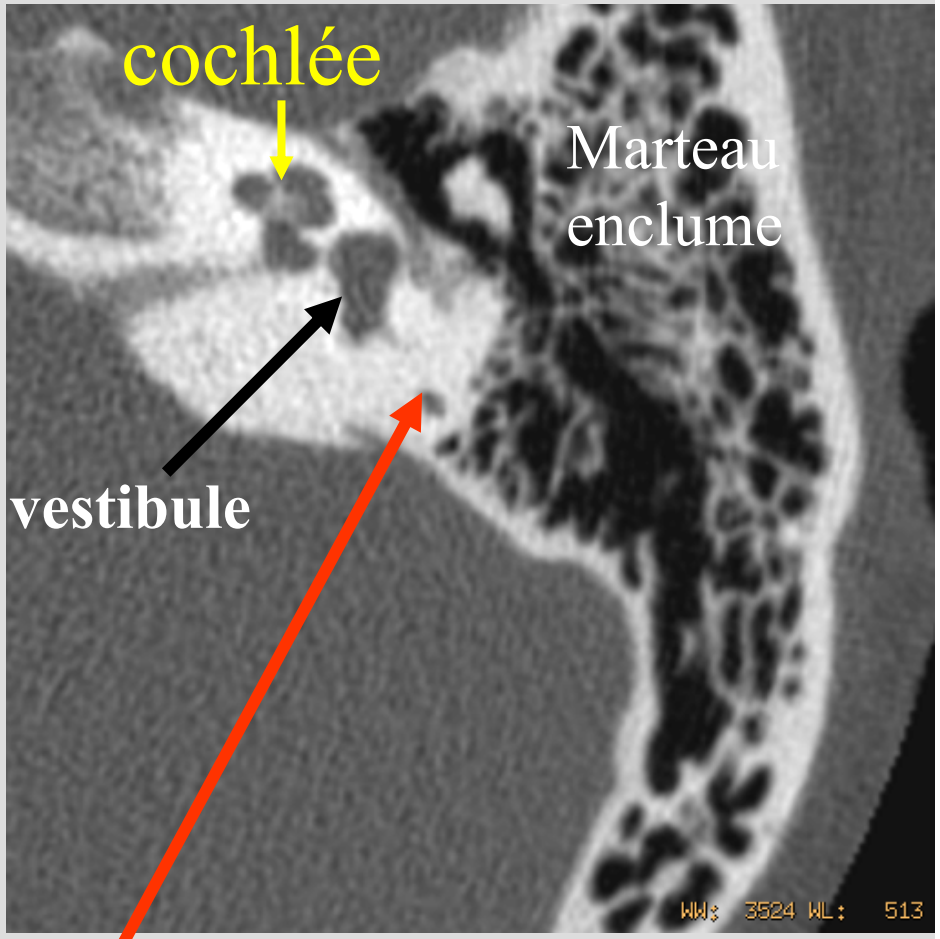
Canal semi circulaire latéral ou externe



Canal semi circulaire postérieur

Canal semi circulaire latéral ou externe





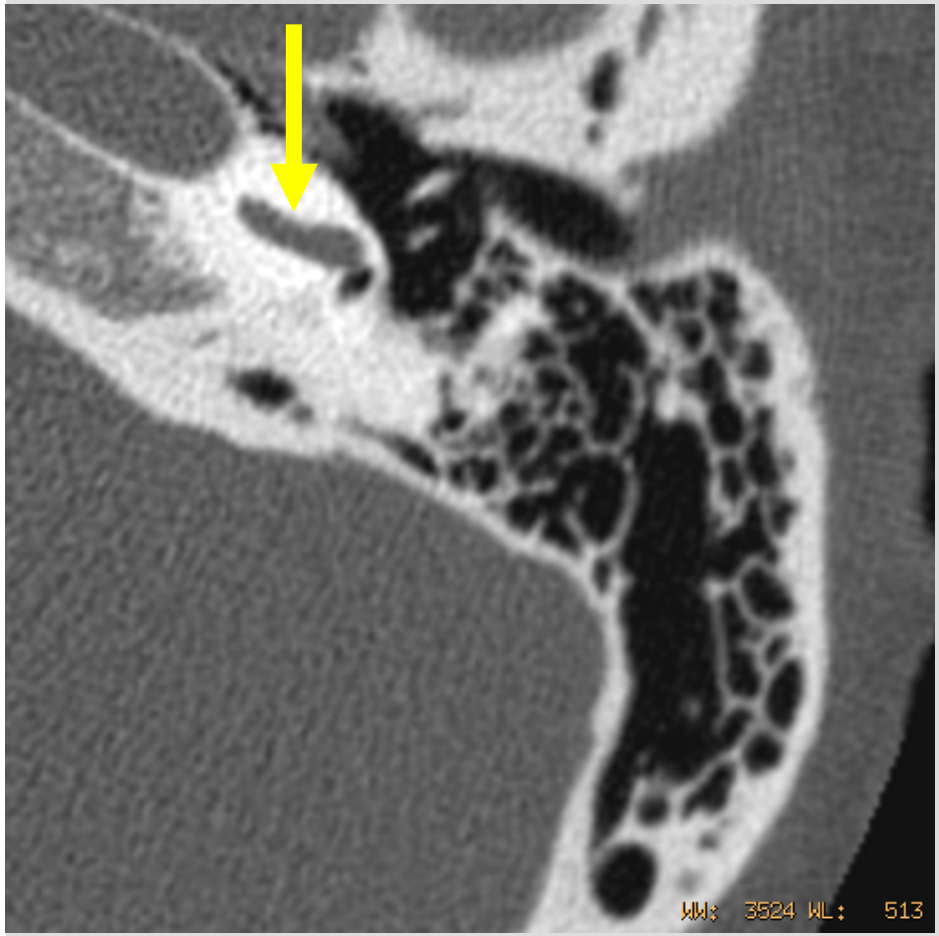
Canal semi circulaire postérieur

cochlée

cochlée

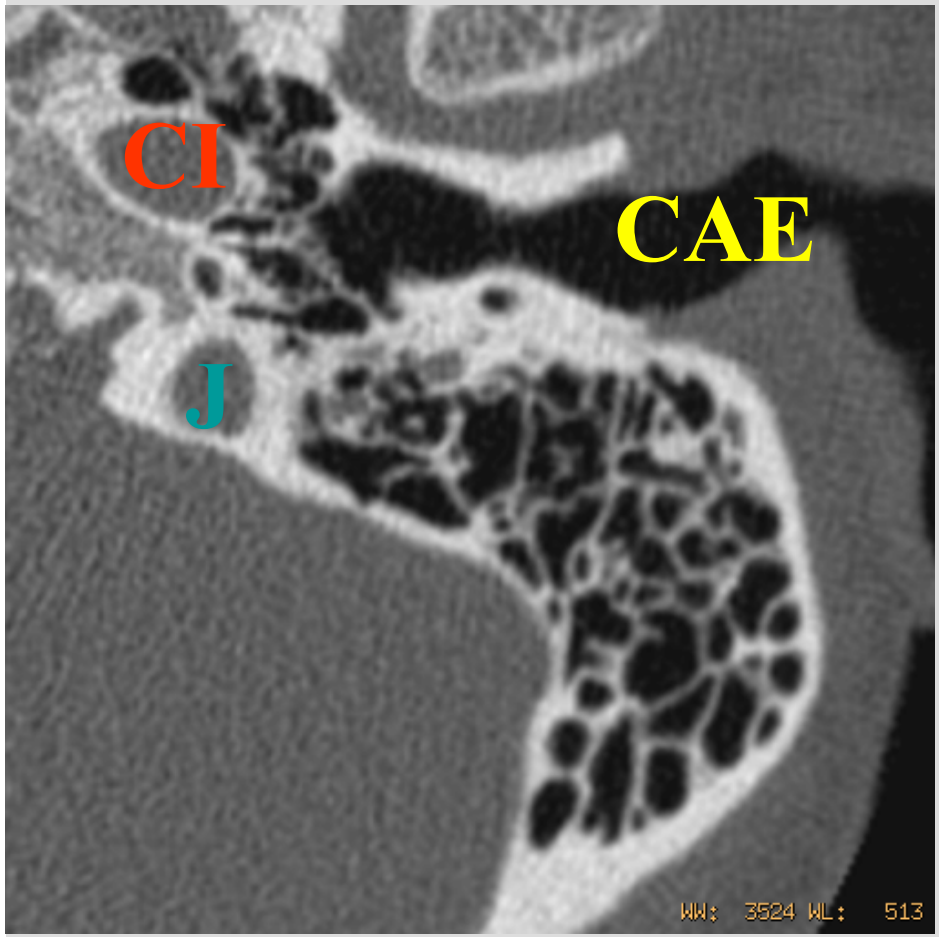
Canal semi circulaire postérieur

cochlée

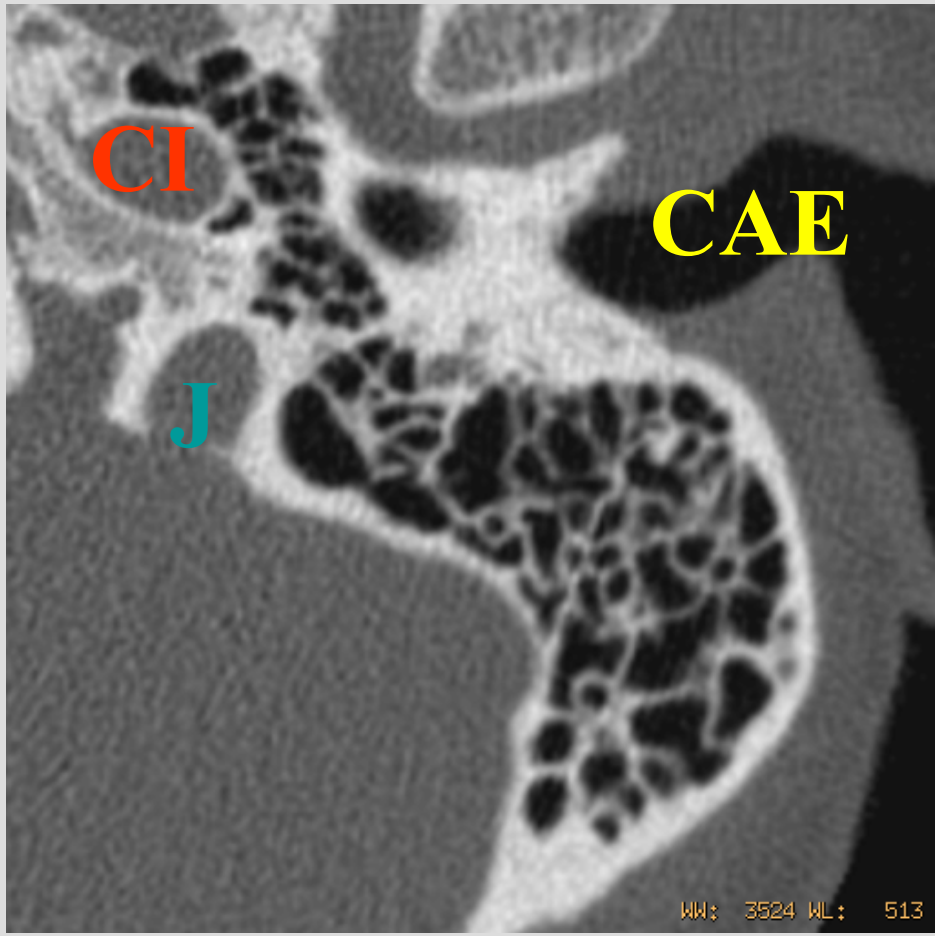


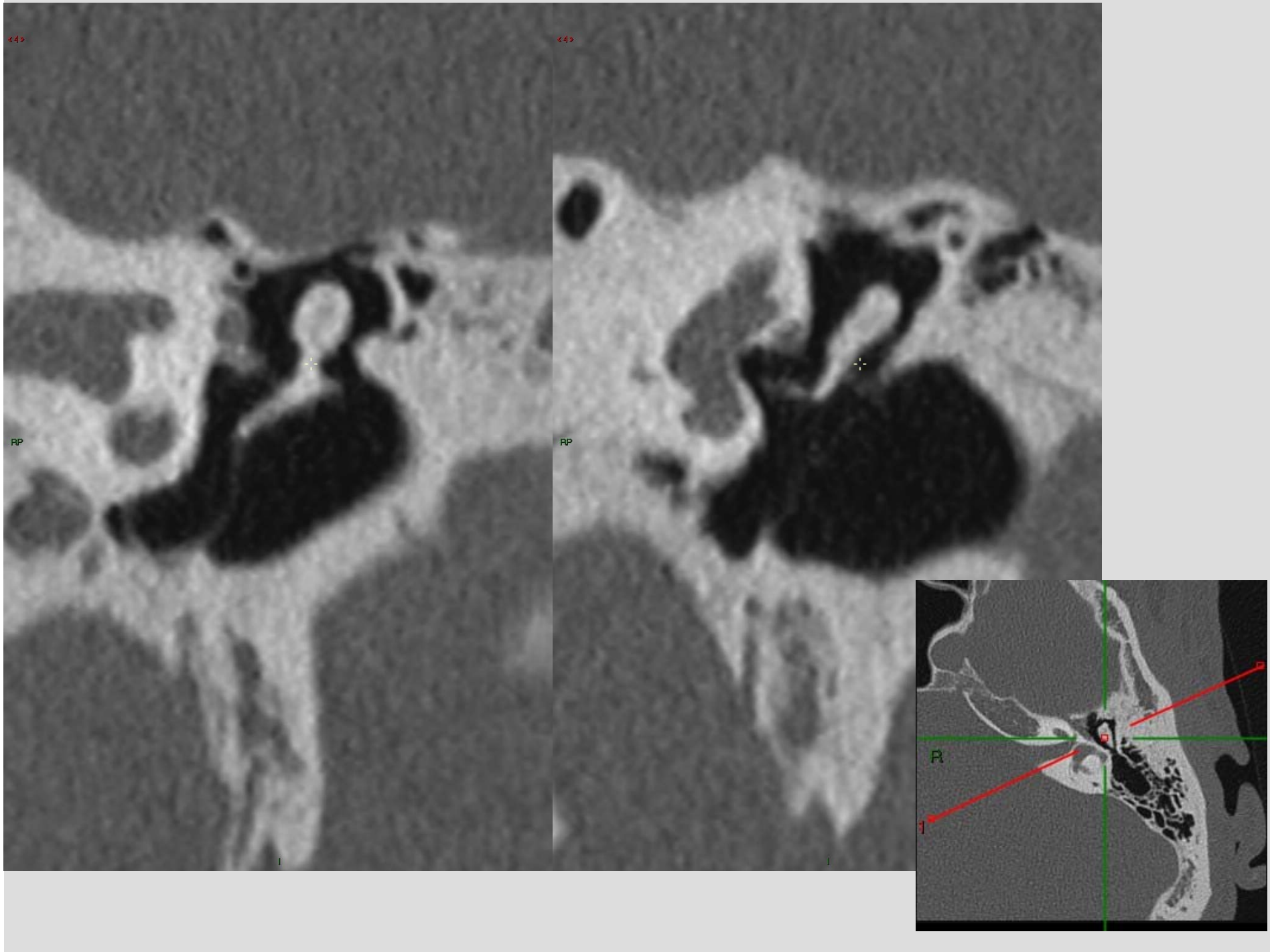
cochlée

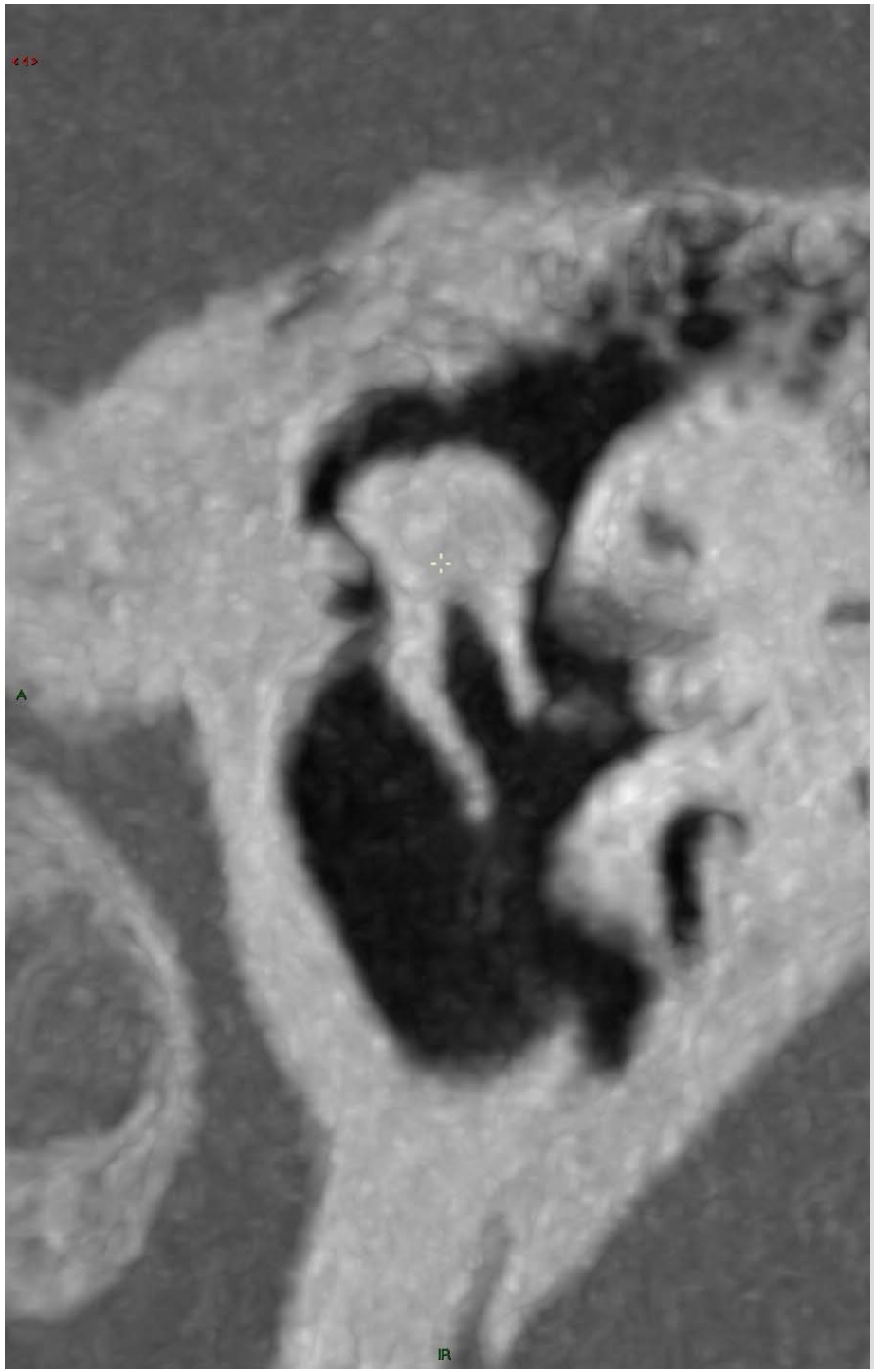
ATM

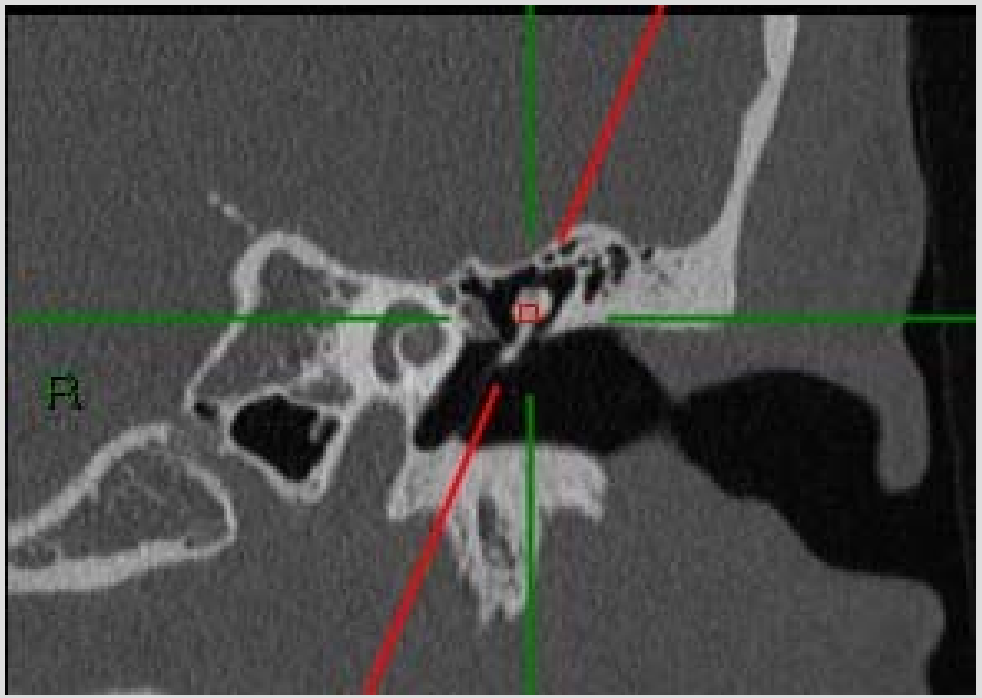


ATM




RP
RP
R


A
IR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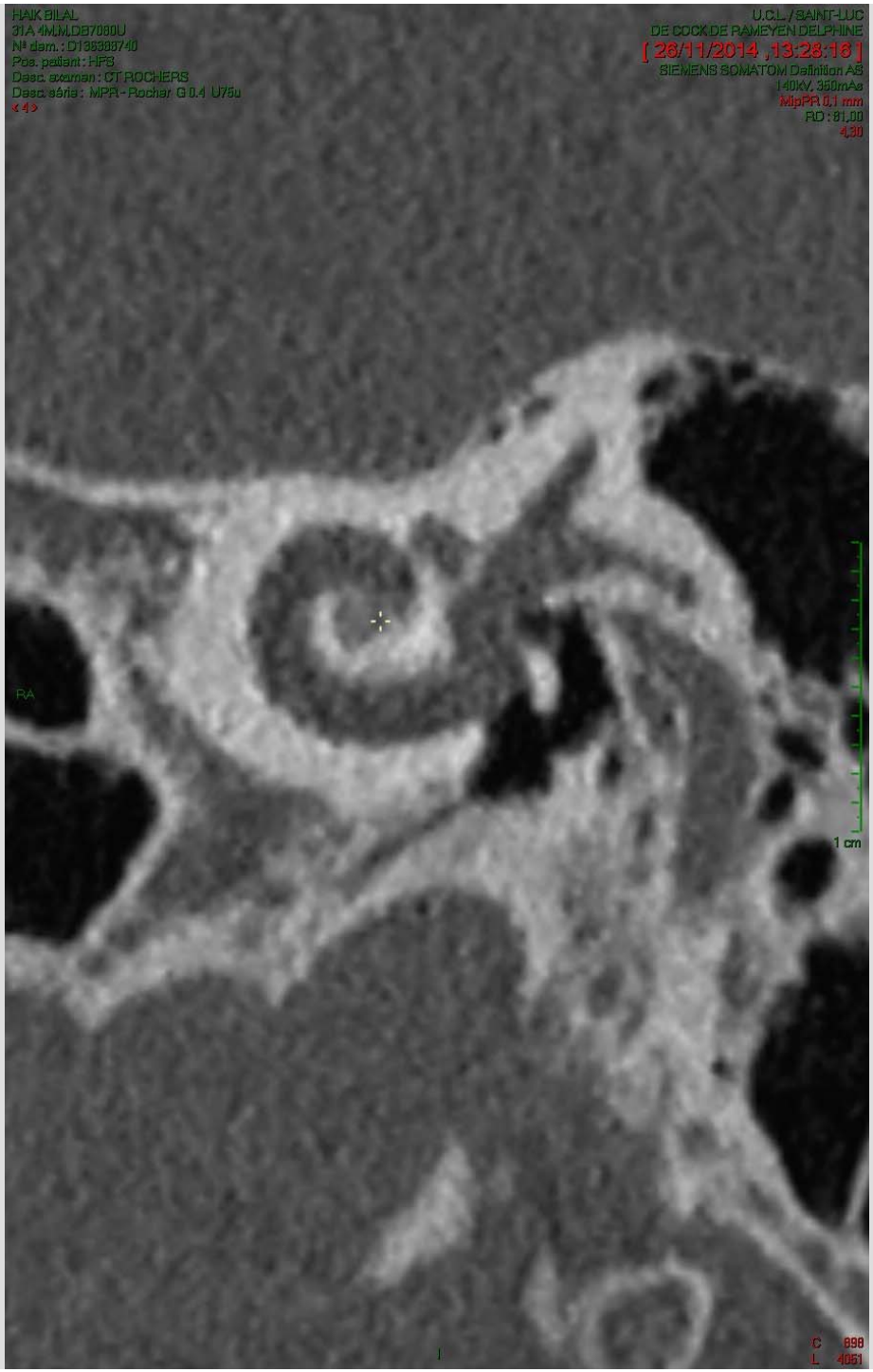
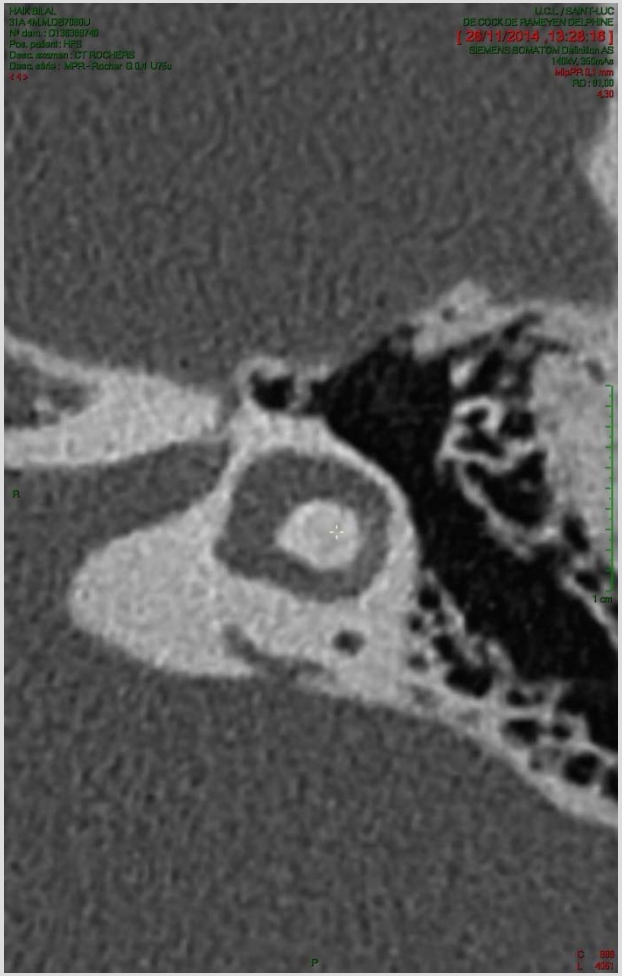

HAIK BILAL
31A 4M.M.DB7080U
N° dem. : D136388740
Pos. patient : HFS
Desc. examen : CT ROCHERS
Desc. série : MPR - Rocher G 0.4 U75u
< 4 >
U.C.L. / SAINT-LUC
DE COCK DE RAMEYEN DELPHINE
[26/11/2014 ,13:28:16]
SIEMENS SOMATOM Definition AS
140kV, 350mAs
MipPR 0.1 mm
RD : 81.00
4.30
RA
1 cm
I
C 898
L 4051


HAIK BILAL
31A 4M,M,DB7080U
N° dem. : D13638740
Pos. patient : HFS
Exec. examen : CT ROCHERS
Class. série : MPR - Rocher G 0,4 U75u
< 4 >
U.C.L / SAINT-LUC
DE COCK DE RAMEYEN DELPHINE
[28/11/2014 ,13:28:16]
SIEMENS SOMATOM Definition AS
140kV, 350mAs
MdpPR 0,1 mm
RD : 91,00
4,30
R
1 cm
P
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L 4051

HAIK BILAL
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N° dem. : D13638740
Pos. patient : HFS
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Class. série : MPR - Rocher G 0,4 U75u
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SIEMENS SOMATOM Definition AS
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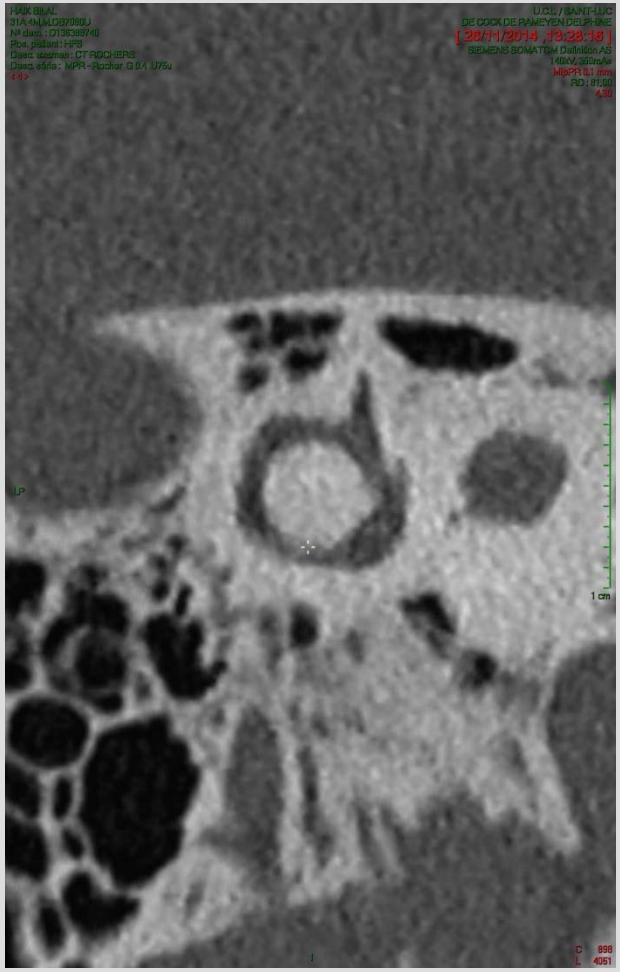
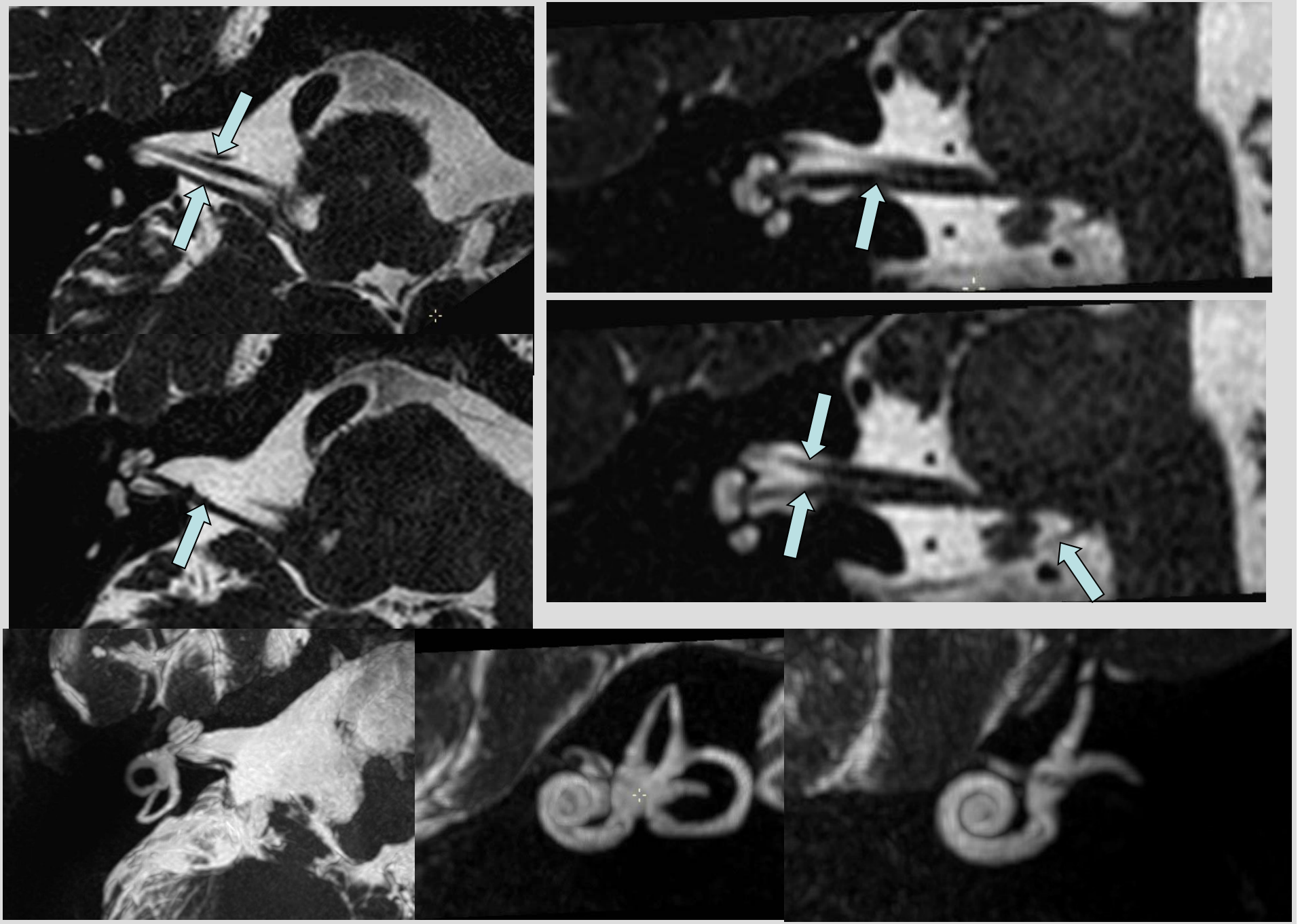
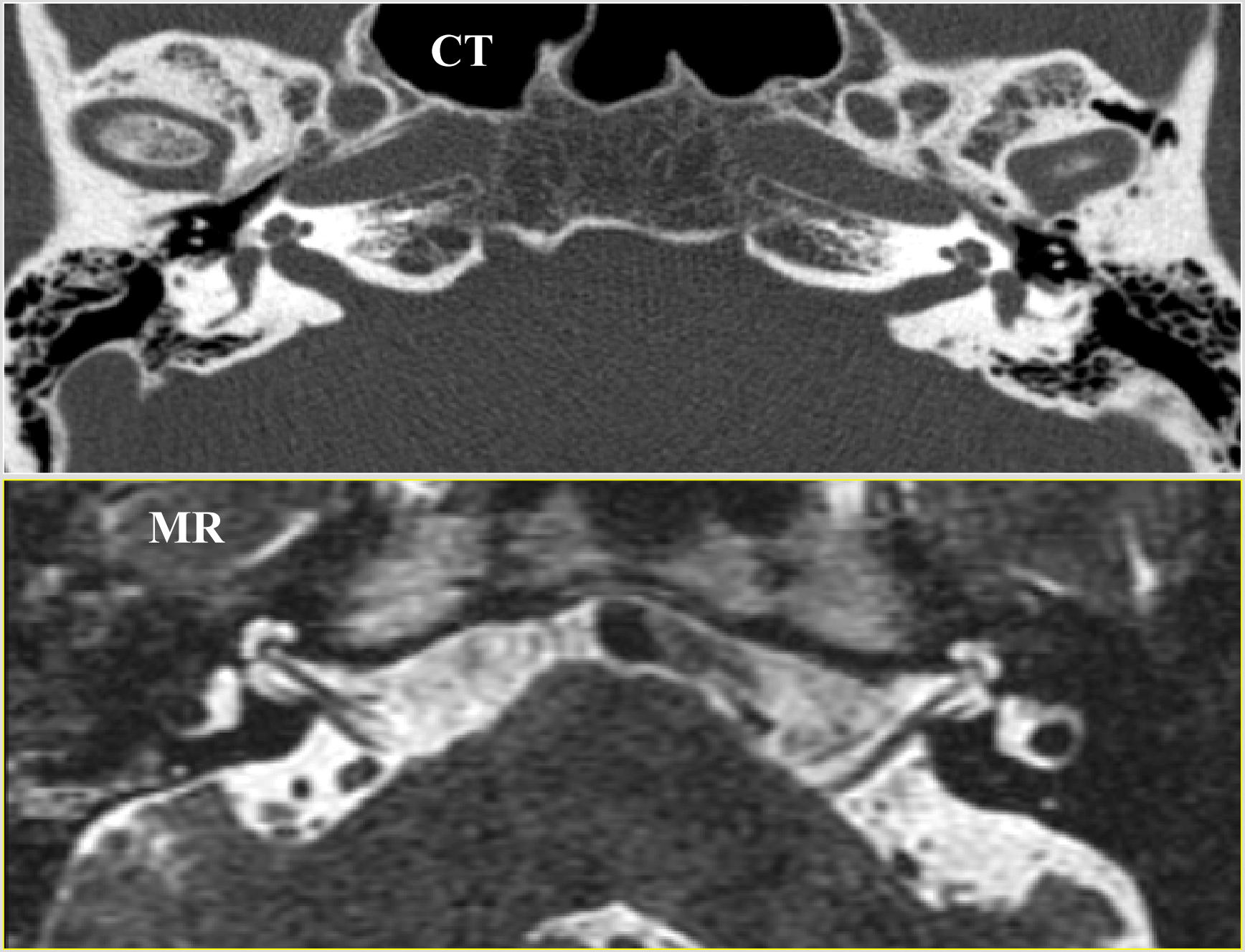

HAIK BILAL
31A 4M,M,DB7080U
N° dem. : D13638740
Pos. patient : HFS
Exec. examen : CT ROCHERS
Class. série : MPR - Rocher G 0,4 U75u
< 4 >
U.C.L / SAINT-LUC
DE COCK DE RAMEYEN DELPHINE
[28/11/2014 ,13:28:16]
SIEMENS SOMATOM Definition AS
140kV, 350mAs
MdpPR 0,1 mm
RD : 91,00
4,30
LP
1 cm
I
C 998
L 4051




CT
MR

Paires crâniennes

2. **Fonction motrice**

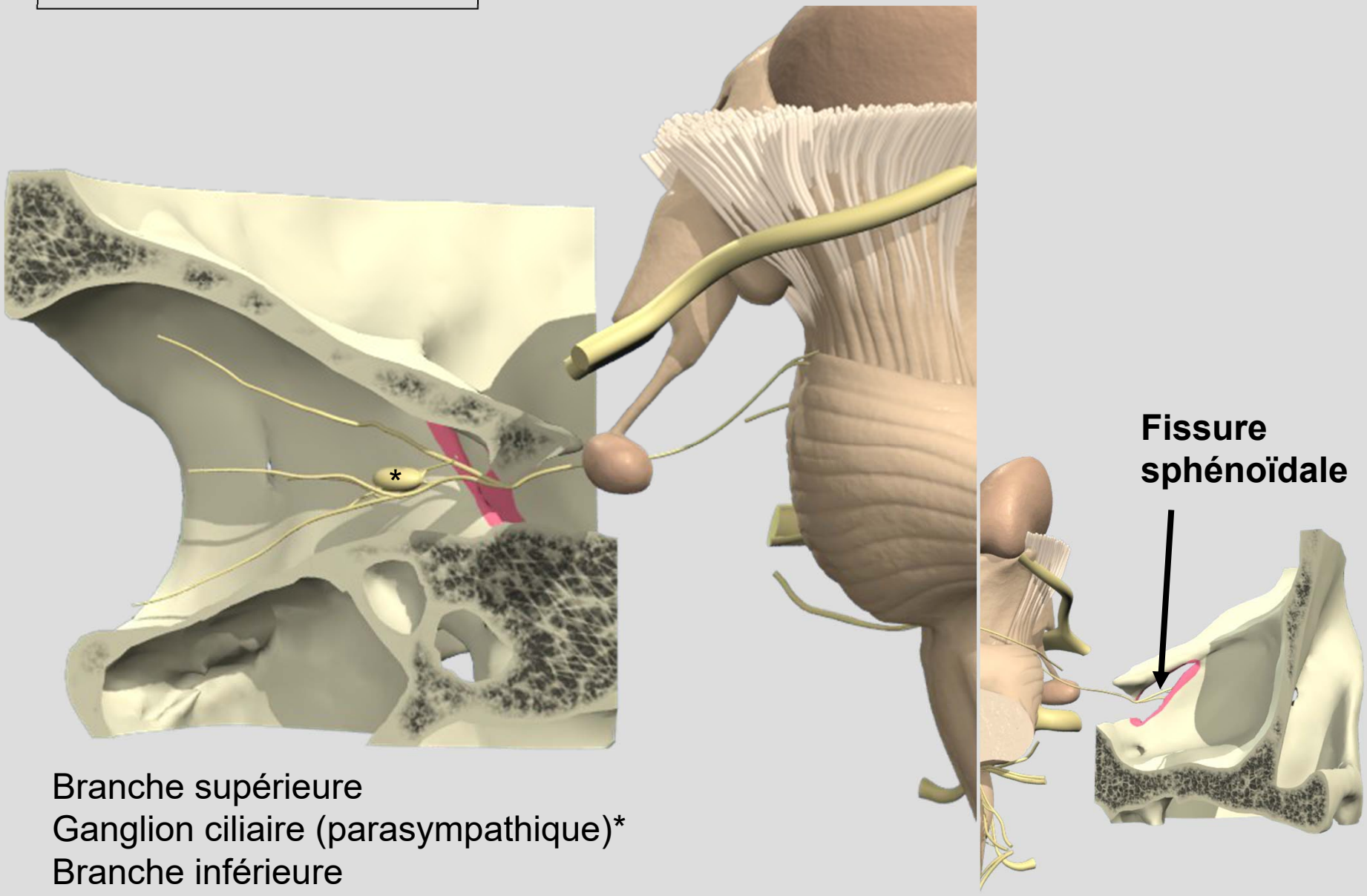
*oculo-motricité: nerfs III, IV, VI

*motricité de la face: nerf VII

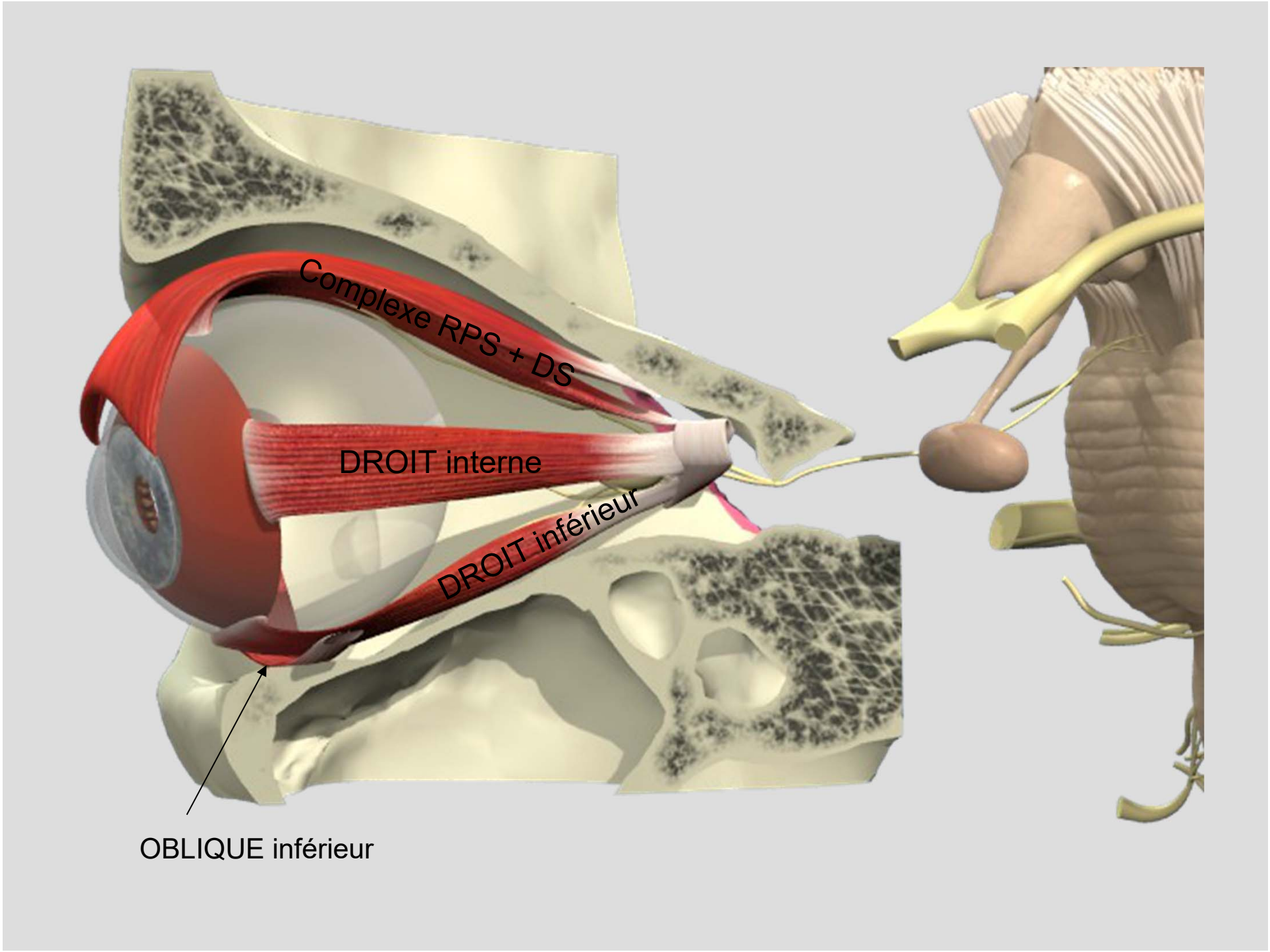
*motricité de la langue: nerf XII

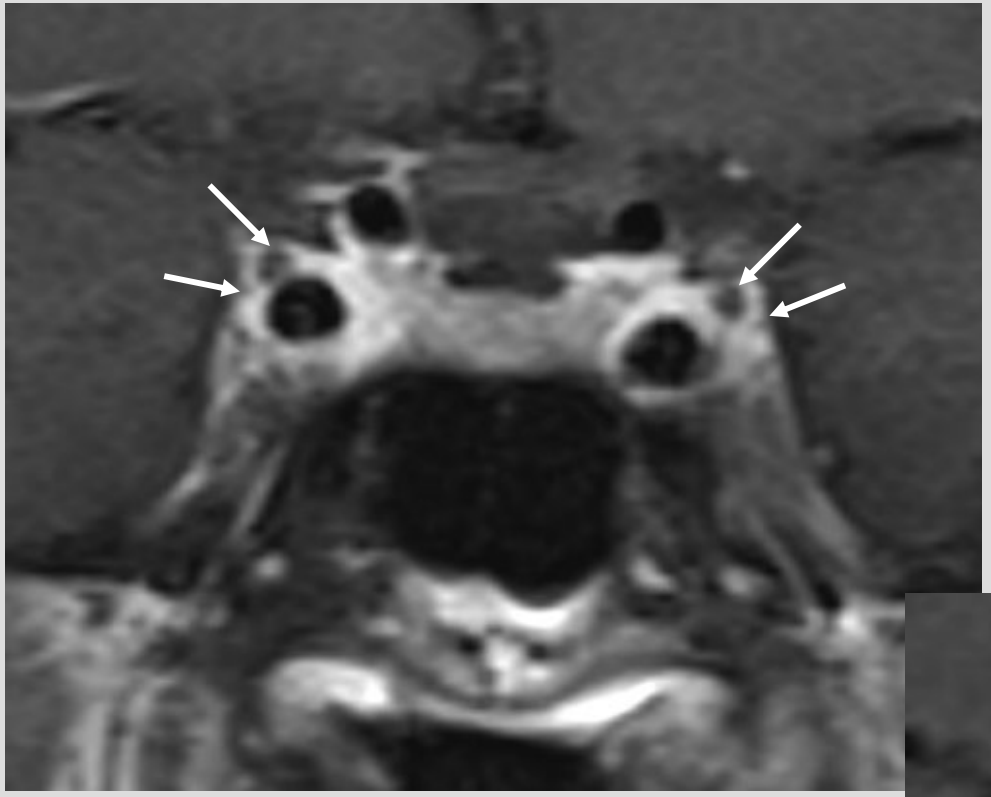
Oculo-motricité

Nerf III = nerf oculomoteur (commun)



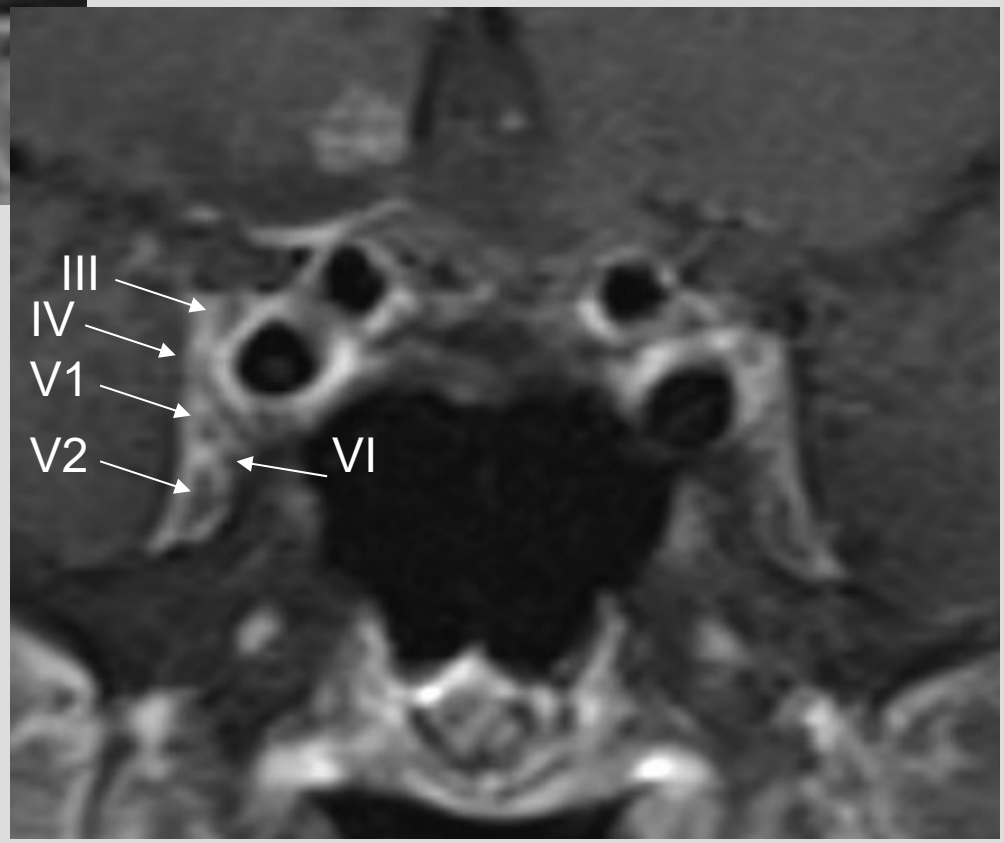
Branche supérieure
Ganglion ciliaire (parasympathique)*
Branche inférieure


Complexe RPS + DS
DROIT interne
DROIT inférieur
OBLIQUE inférieur



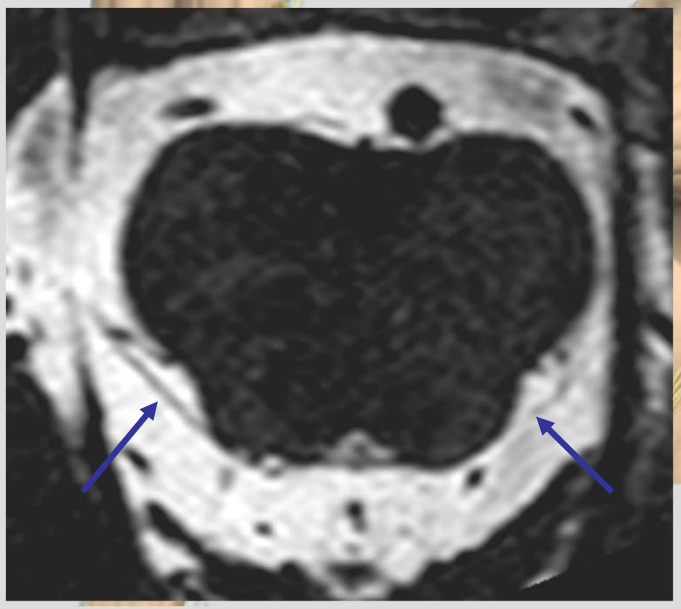
Sinus caverneux

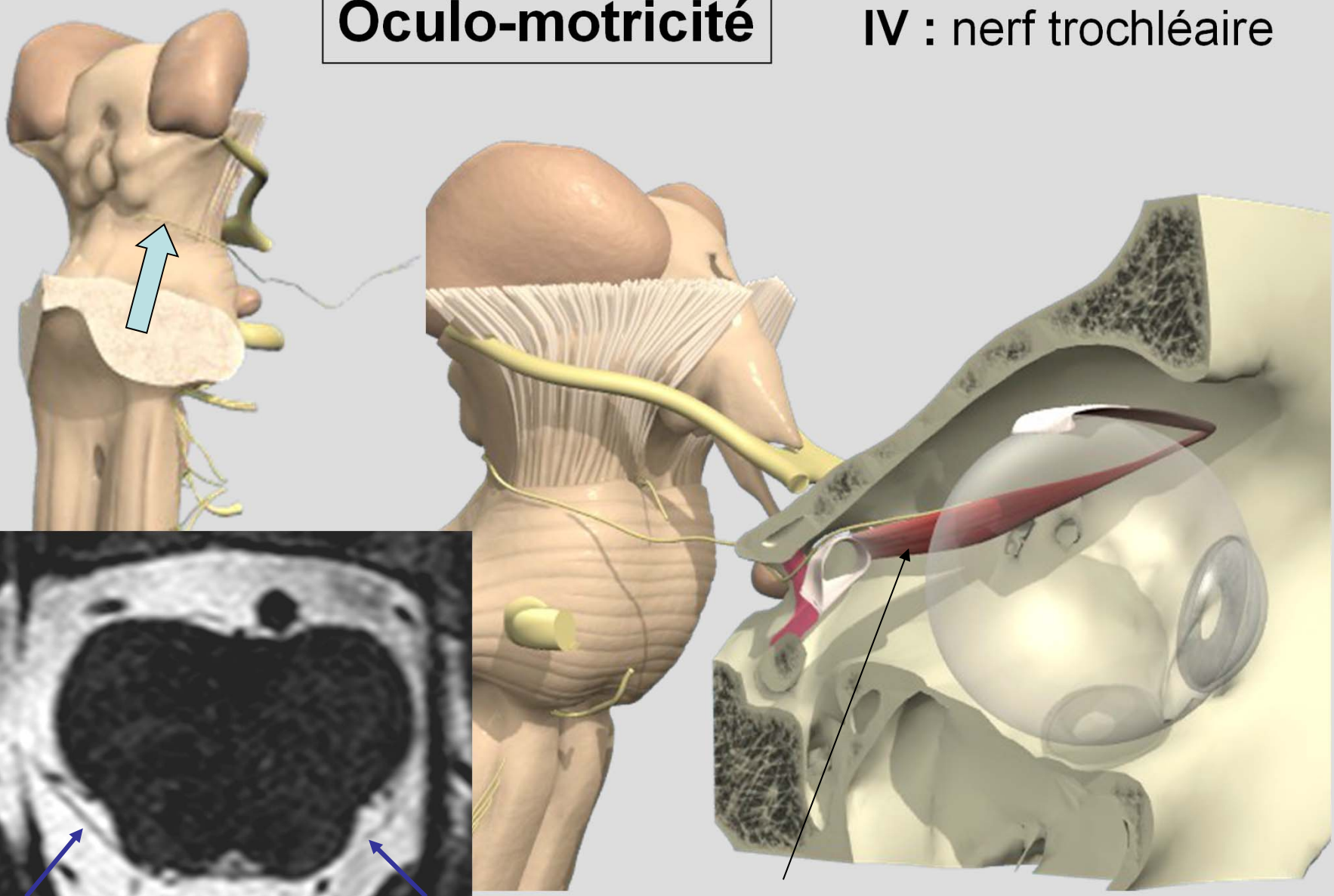
coupes frontales T1 post C+ FS



Oculo-motricité

IV : nerf trochléaire

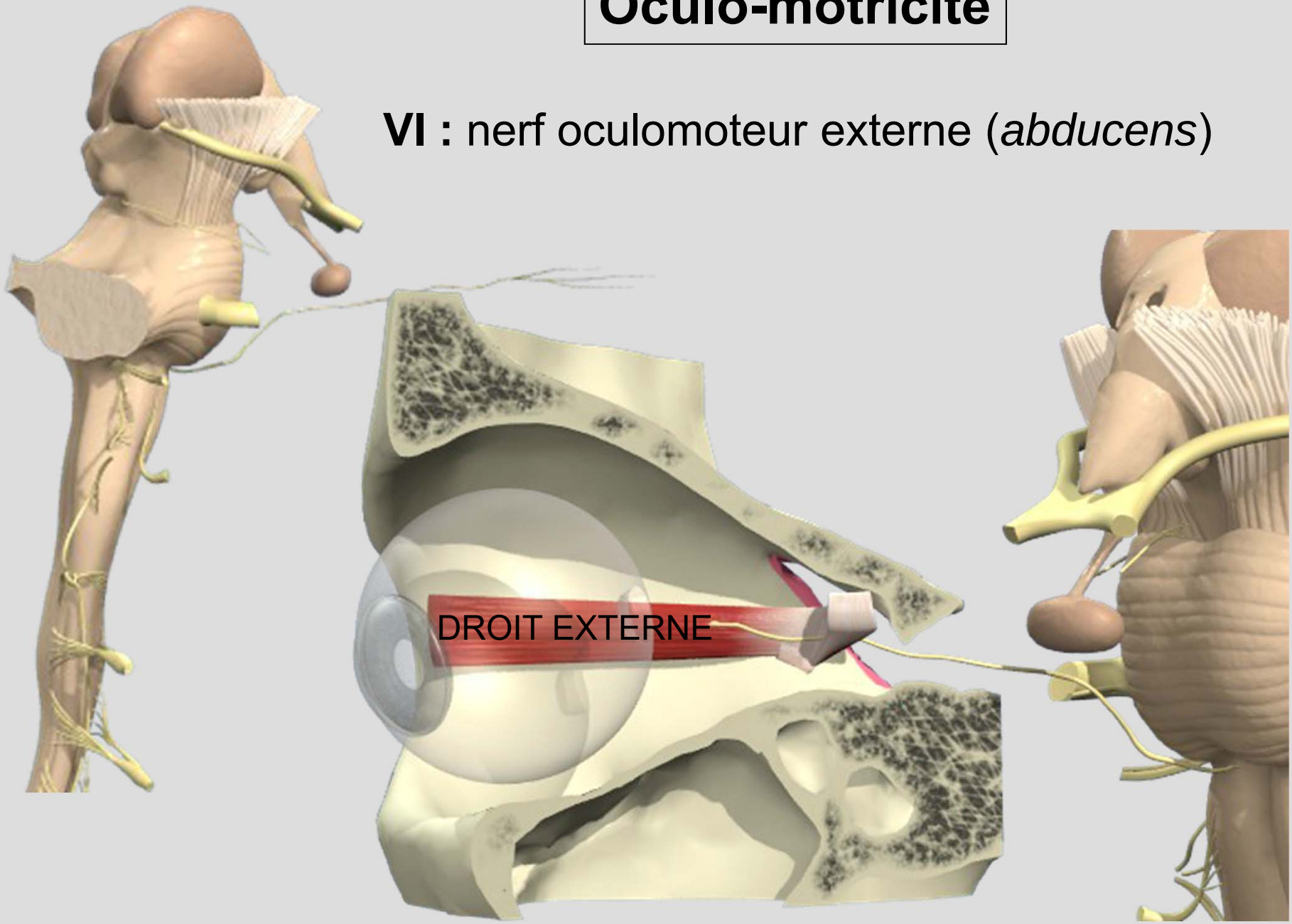


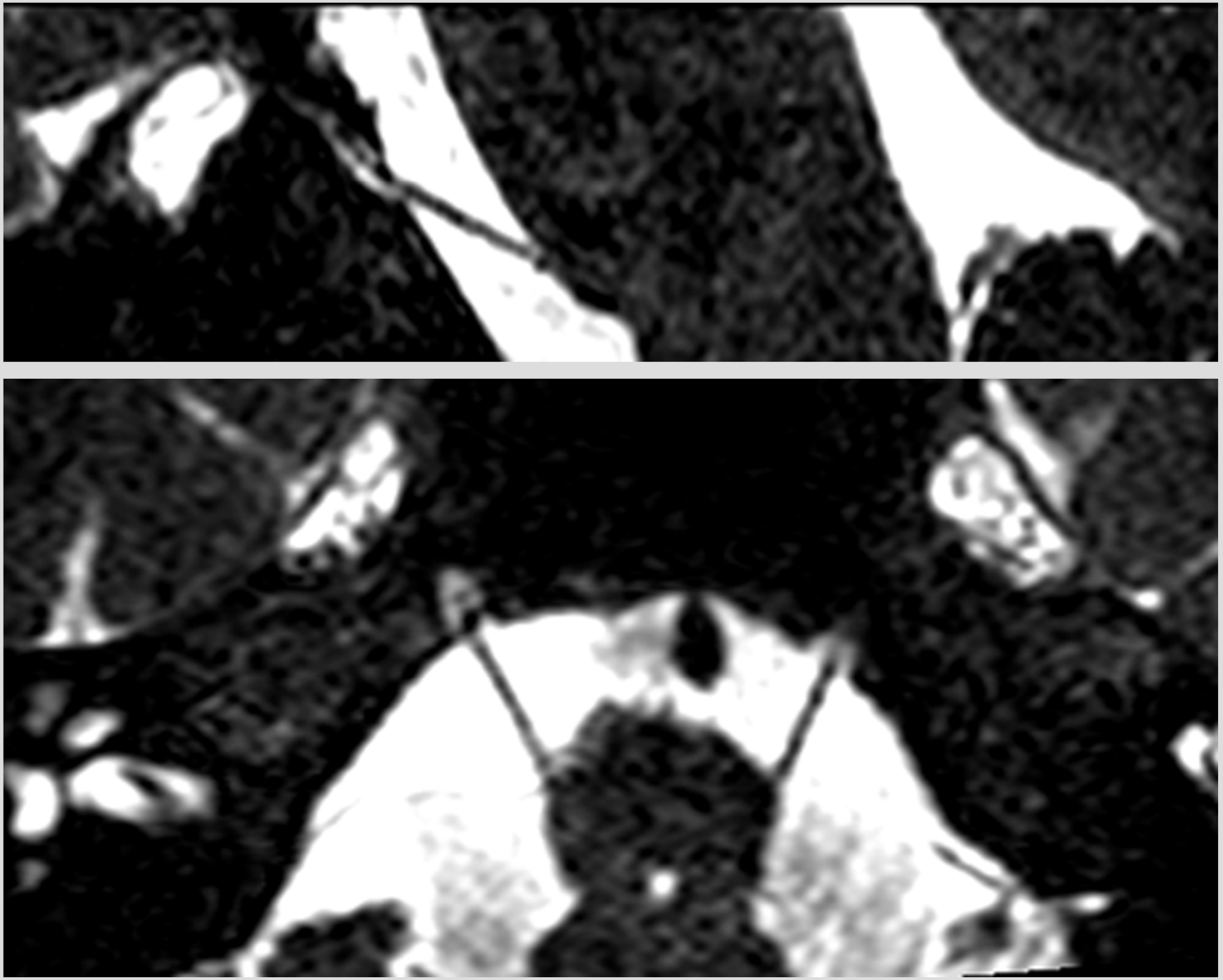


Oblique supérieur

Oculo-motricité

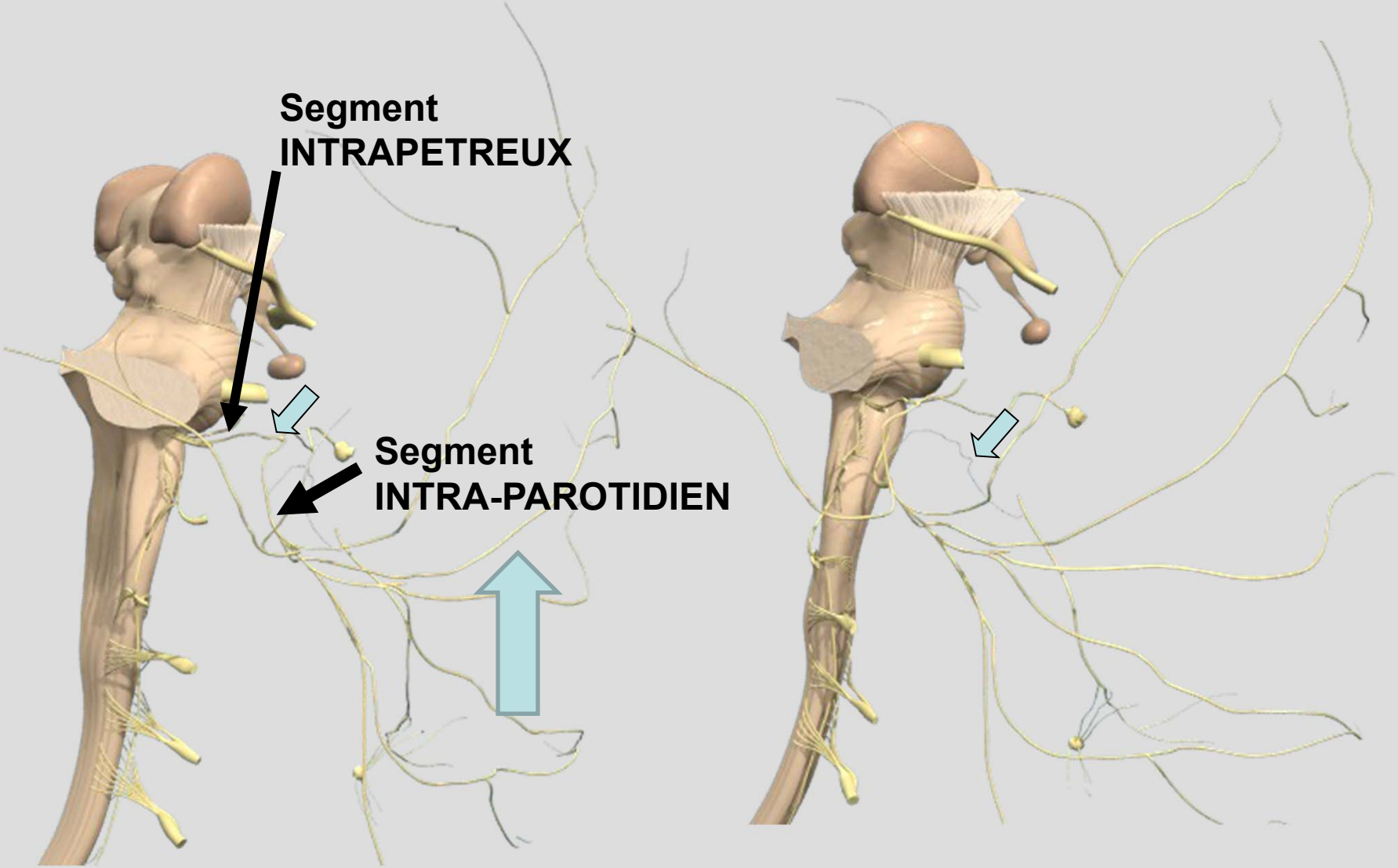
VI : nerf oculomoteur externe (*abducens*)



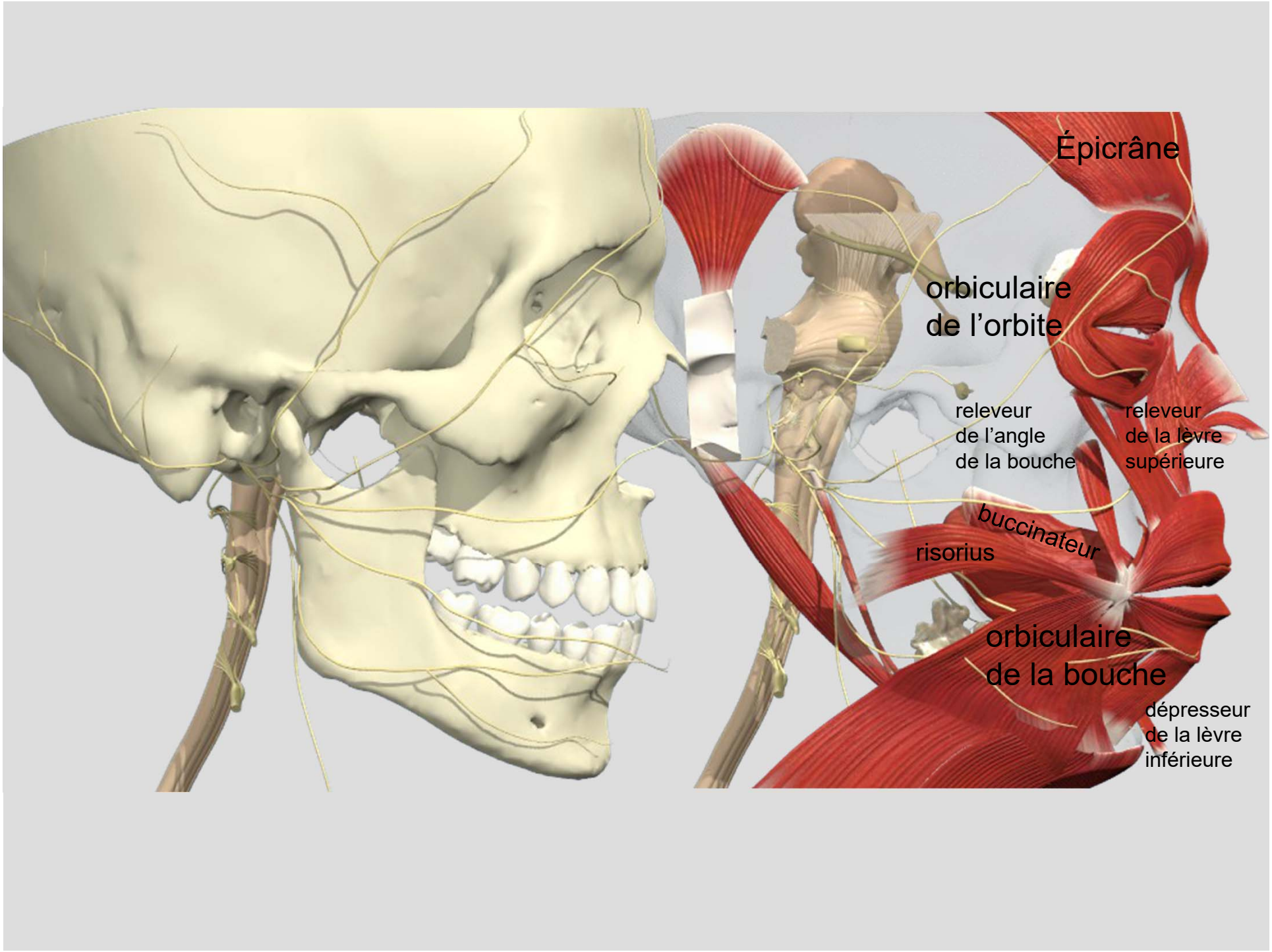


Motricité de la face

Nerf VII: nerf facial

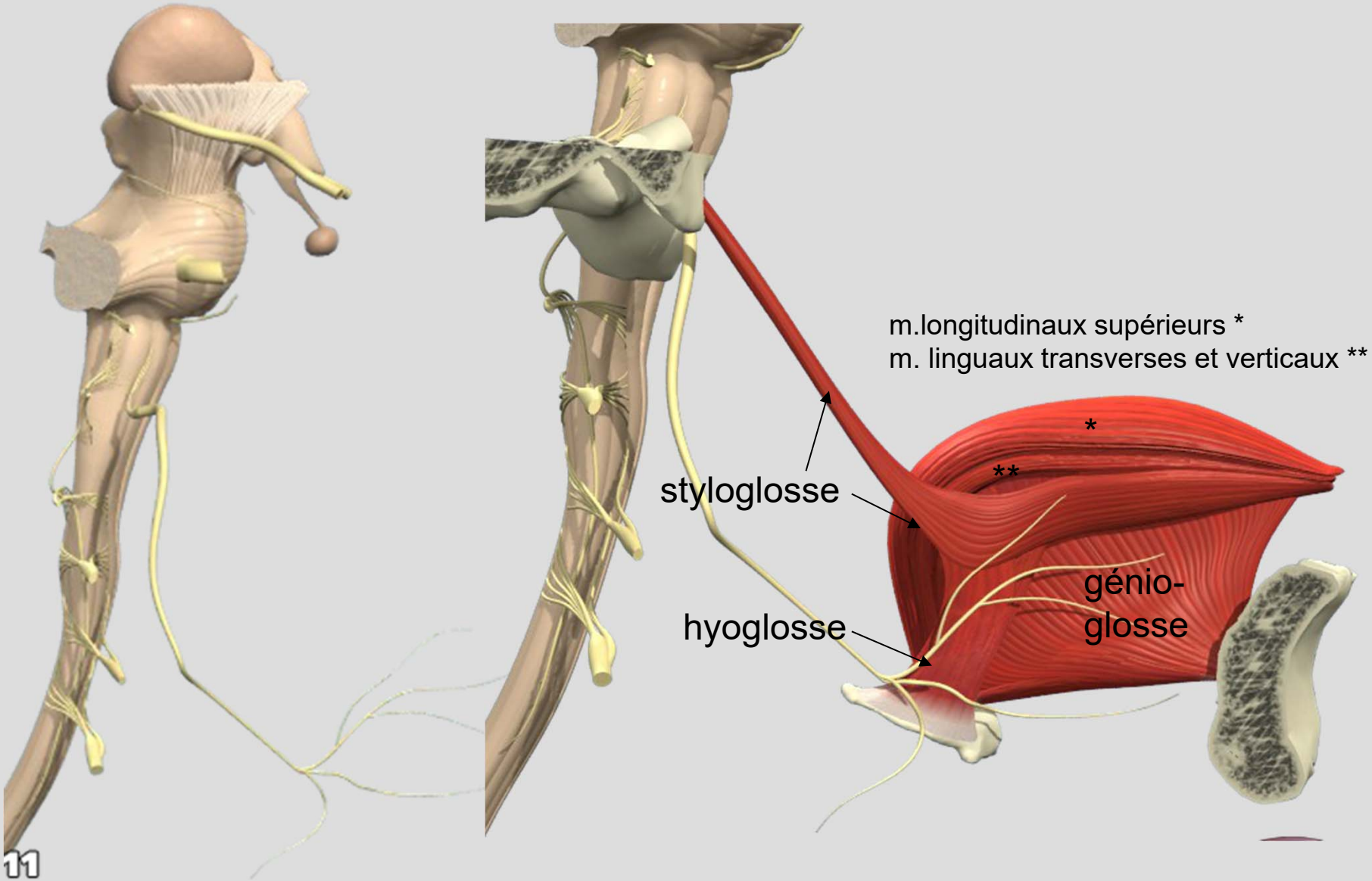


Tronc du facial → chorde du tympan → nerf lingual (V3)


Épicrâne
orbiculaire
de l'orbite
releveur
de l'angle
de la bouche
releveur
de la lèvre
supérieure
buccinateur
risorius
orbiculaire
de la bouche
dépresseur
de la lèvre
inférieure

Motricité de la langue

Nerf XII: nerf (grand) hypoglosse



Paires crâniennes

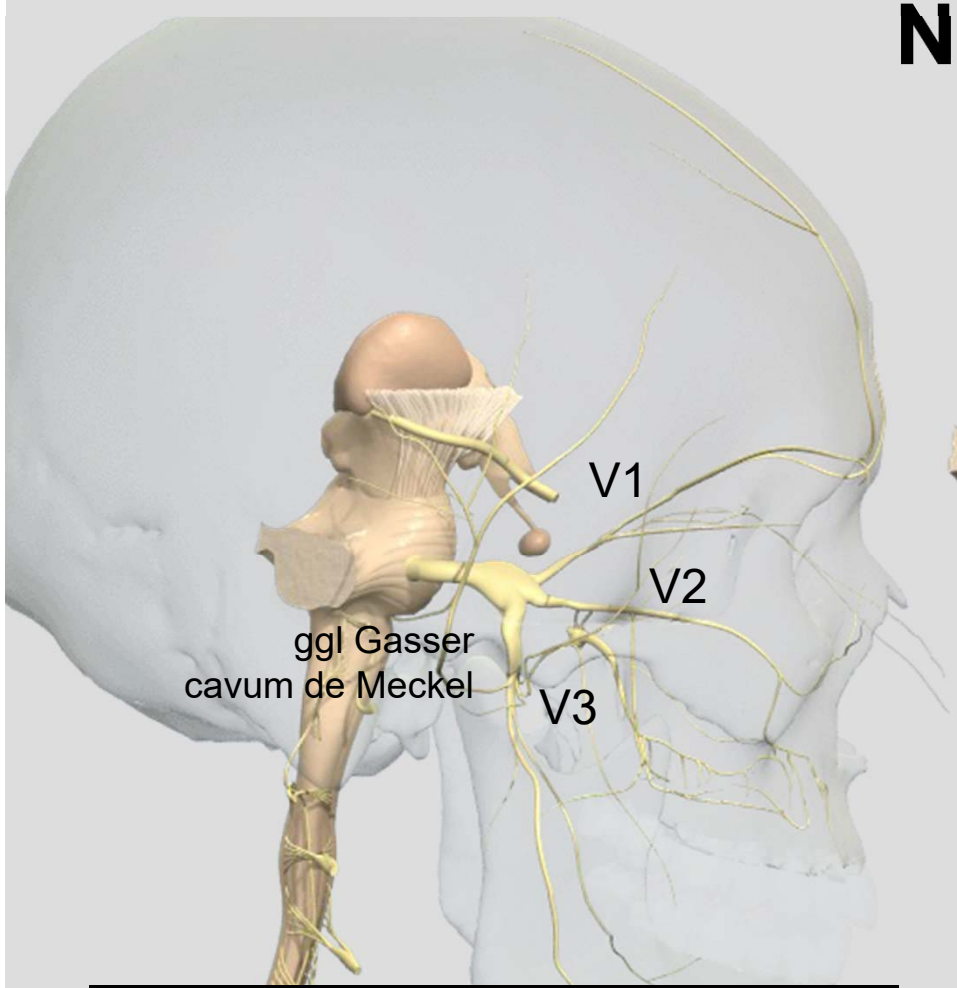
3. Fonction mixte mais séparée

nerf V (trijumeau)

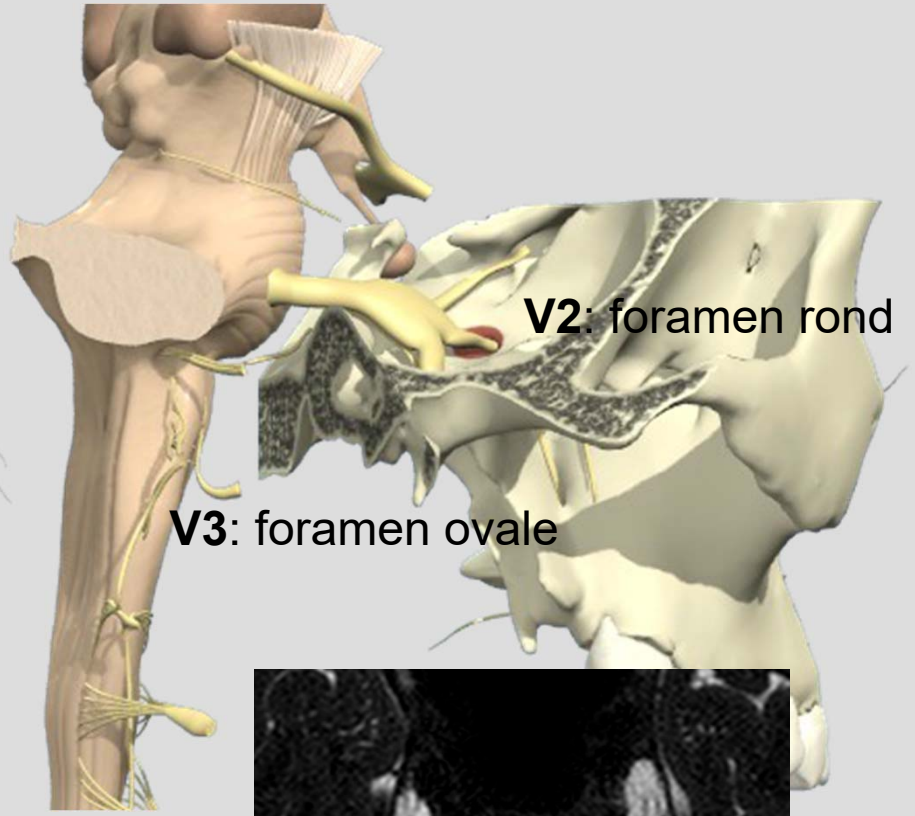
-Racine sensitive

-Racine motrice

Nerf V – *racine sensitive*

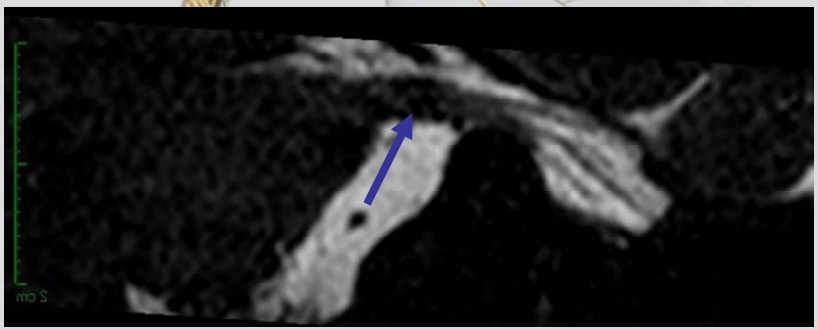


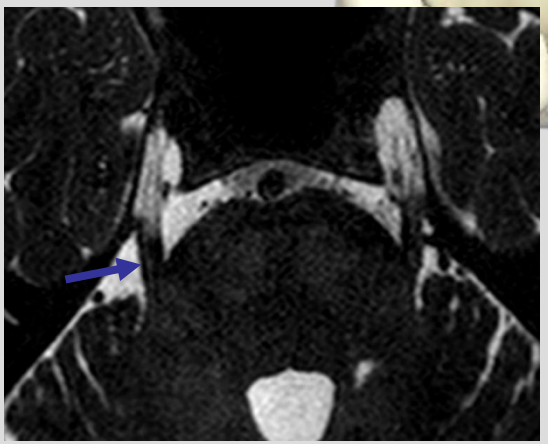
V1: fissure sphénoïdale supérieure

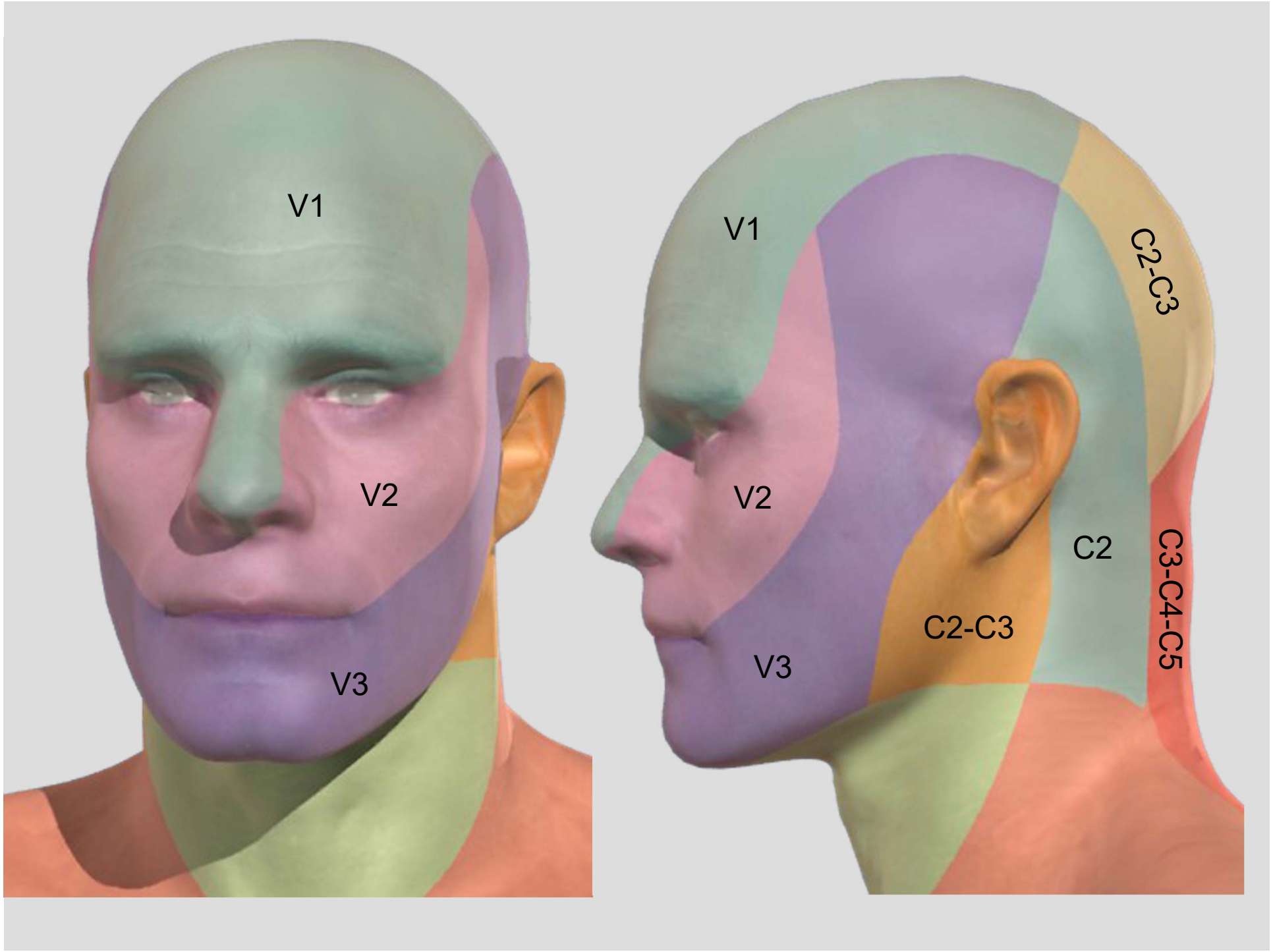


V2: foramen rond

V3: foramen ovale



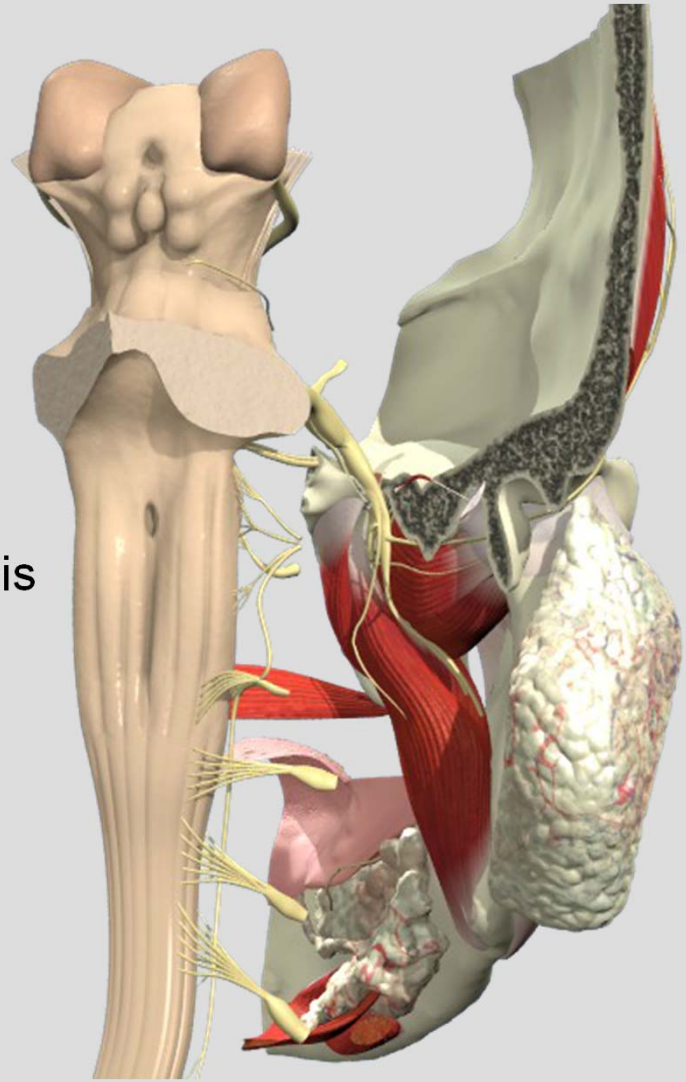
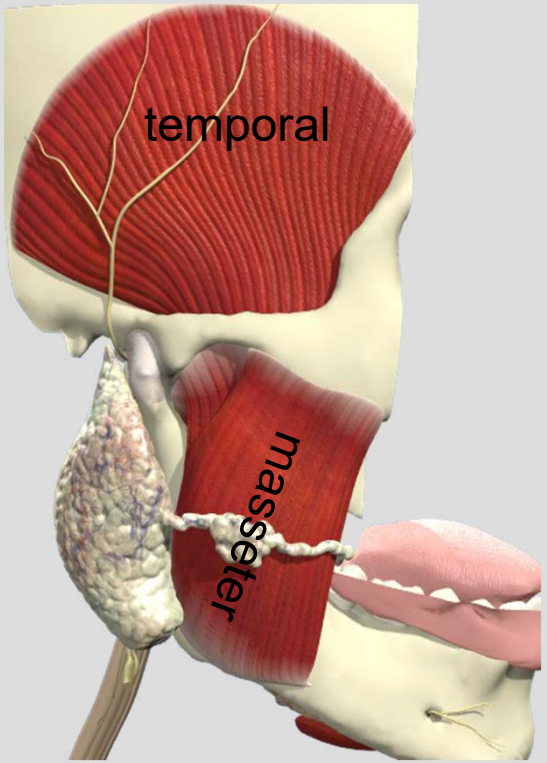



V1
V2
V3
V1
V2
V3
C2-C3
C2
C2-C3
C3-C4-C5

Nerf V – *racine motrice*

Nerf manducateur

- Temporal
- Ptérigoïdien médial
- Ptérigoïdien latéral
- Masseter

Tenseur du voile du palais

Mylo-hyoïdien
Digastrique