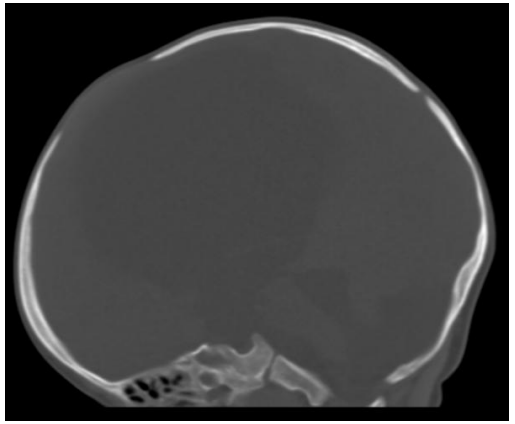
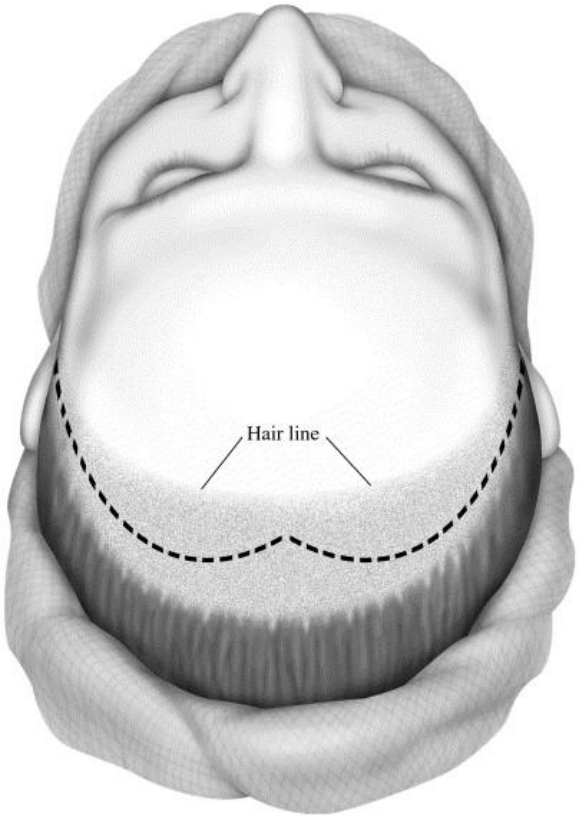
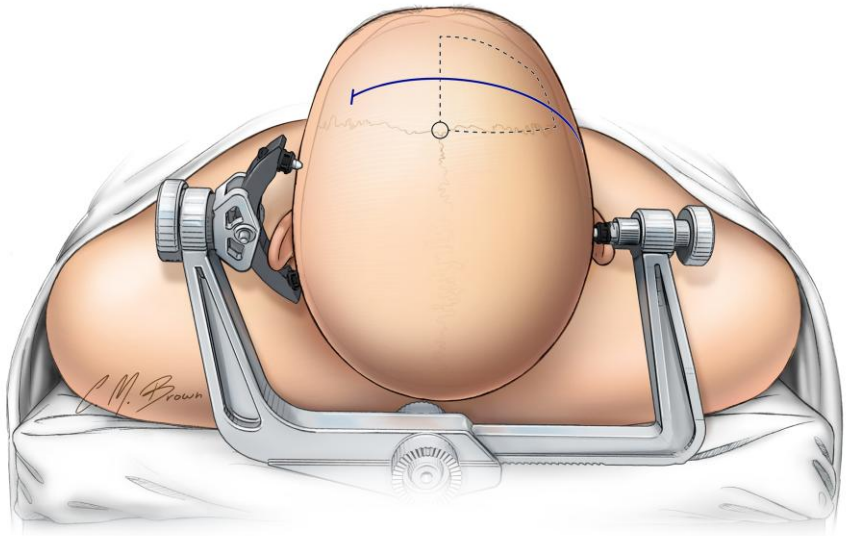
Intraoperative hjelpemidler for maksimal trygg reseksjon

Hodet fikseres som regel med trepunkt-støtte

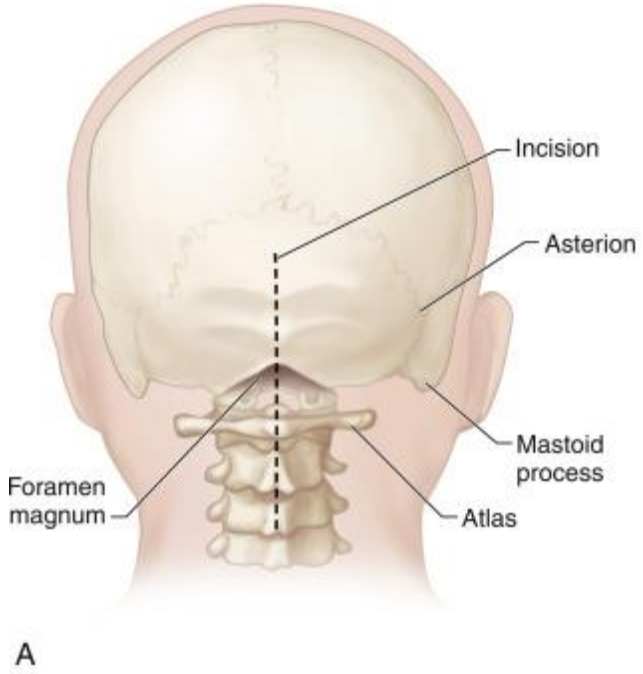


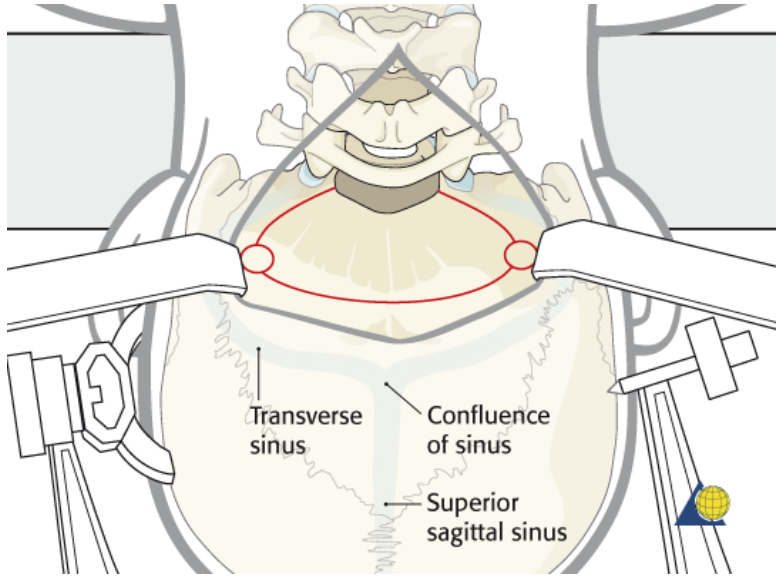
Frontal tilgang

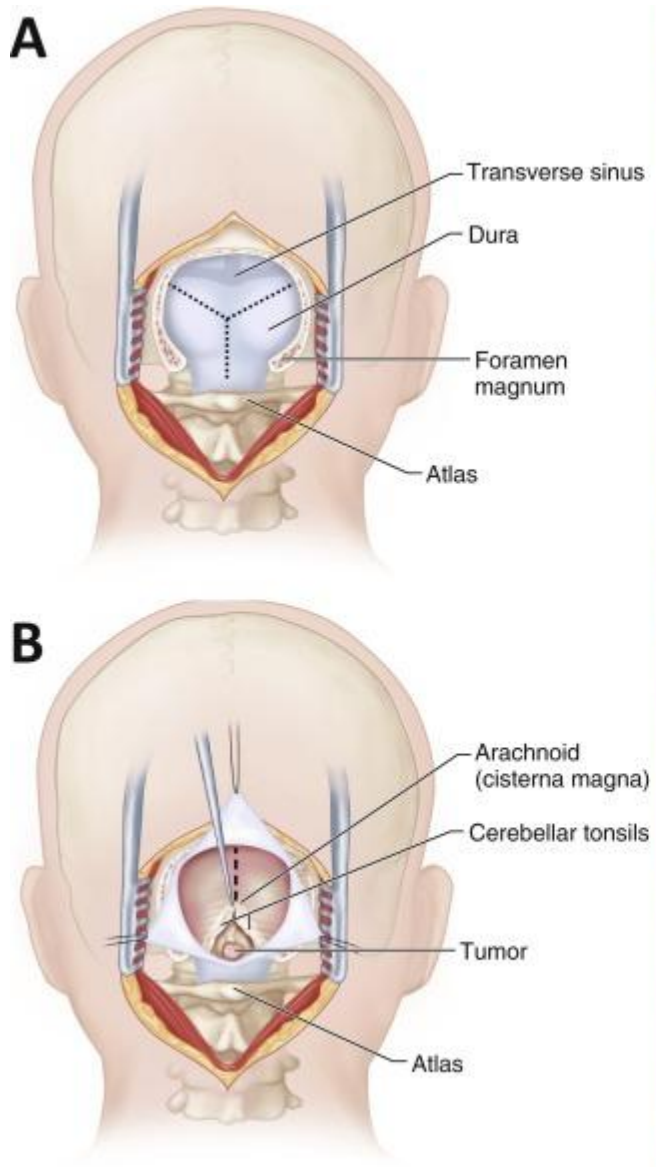


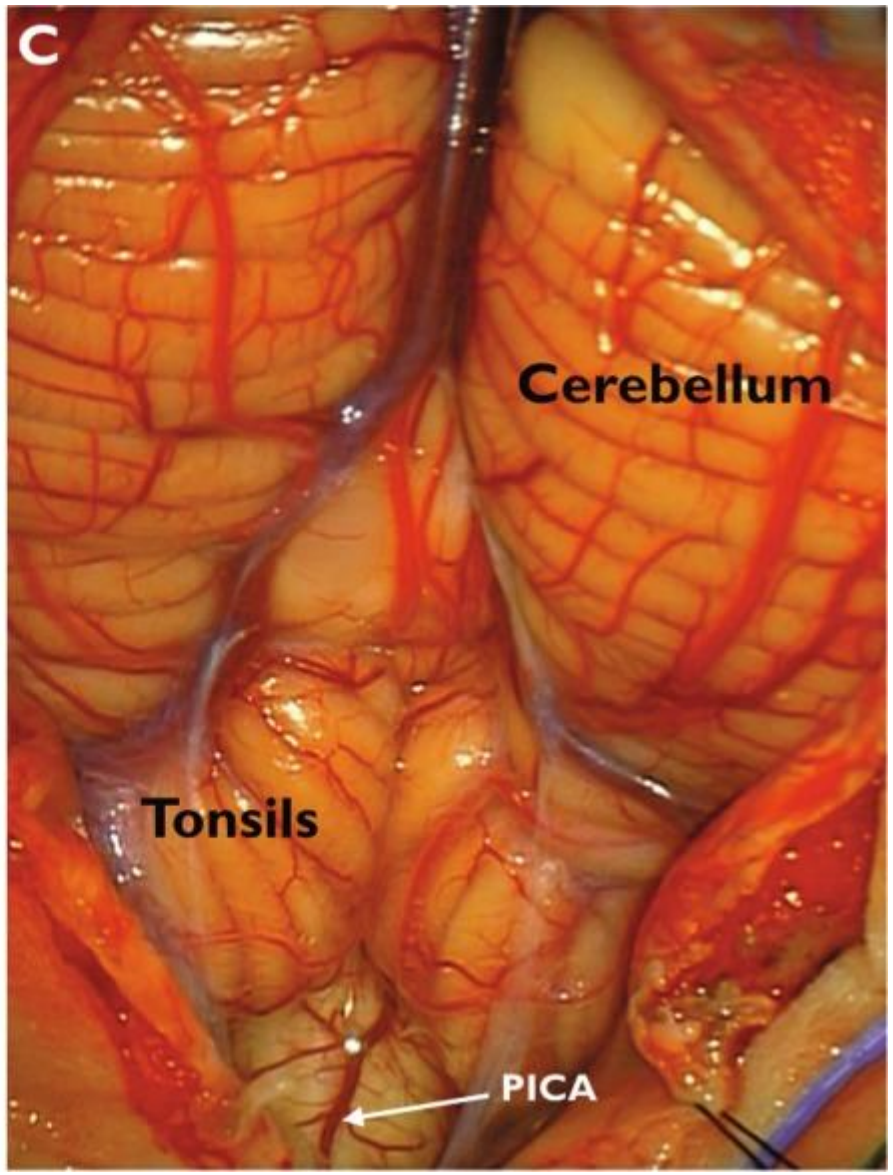


Bakre tilgang

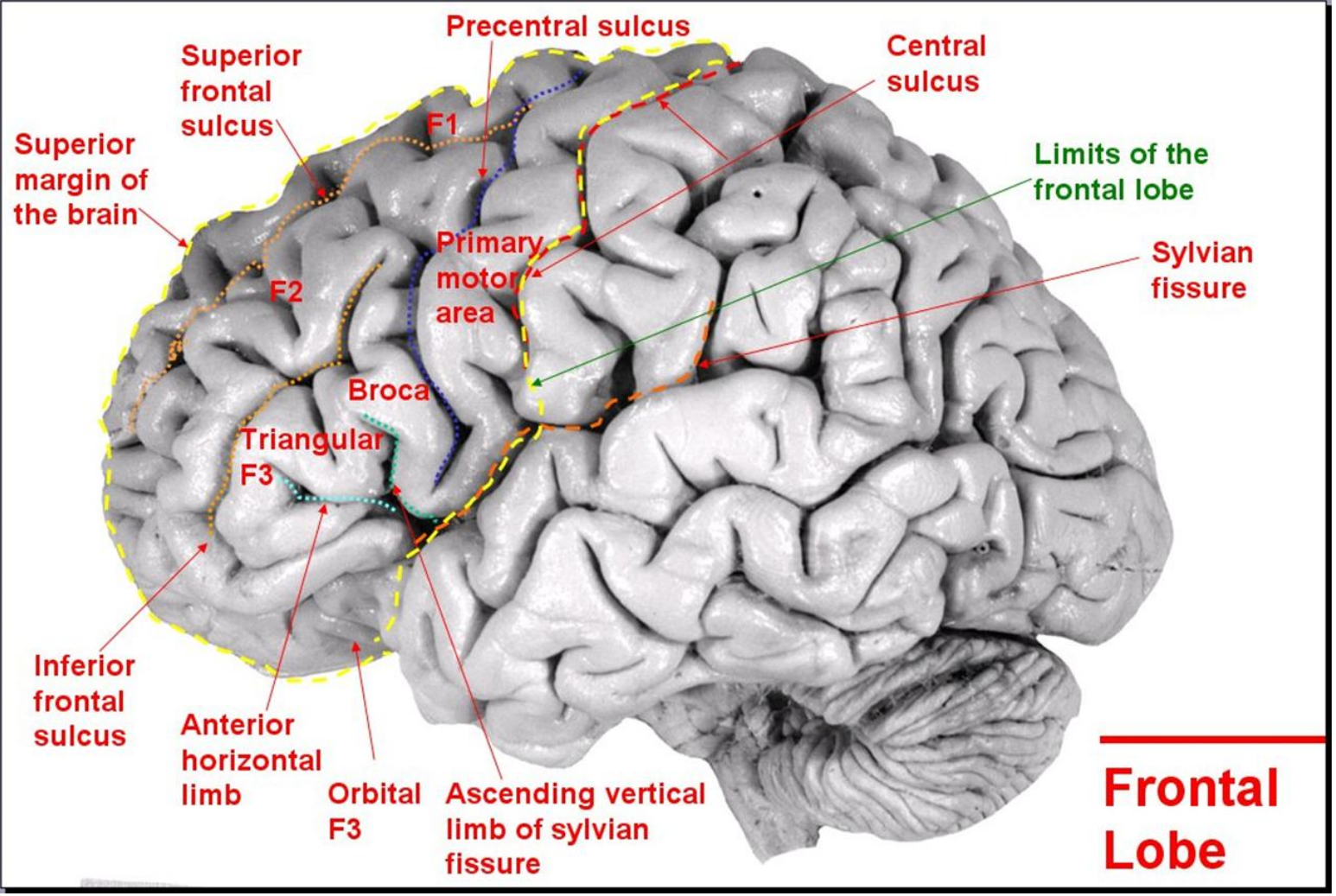


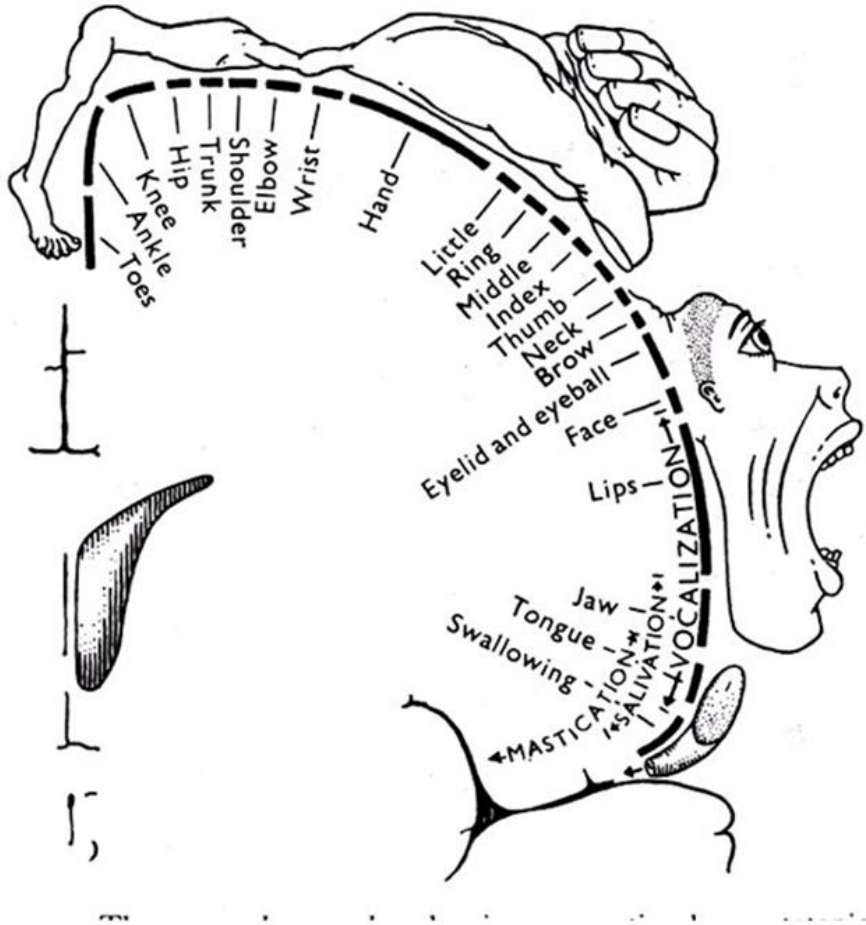



A
Transverse sinus
Dura
Foramen magnum
Atlas
B
Arachnoid (cisterna magna)
Cerebellar tonsils
Tumor
Atlas

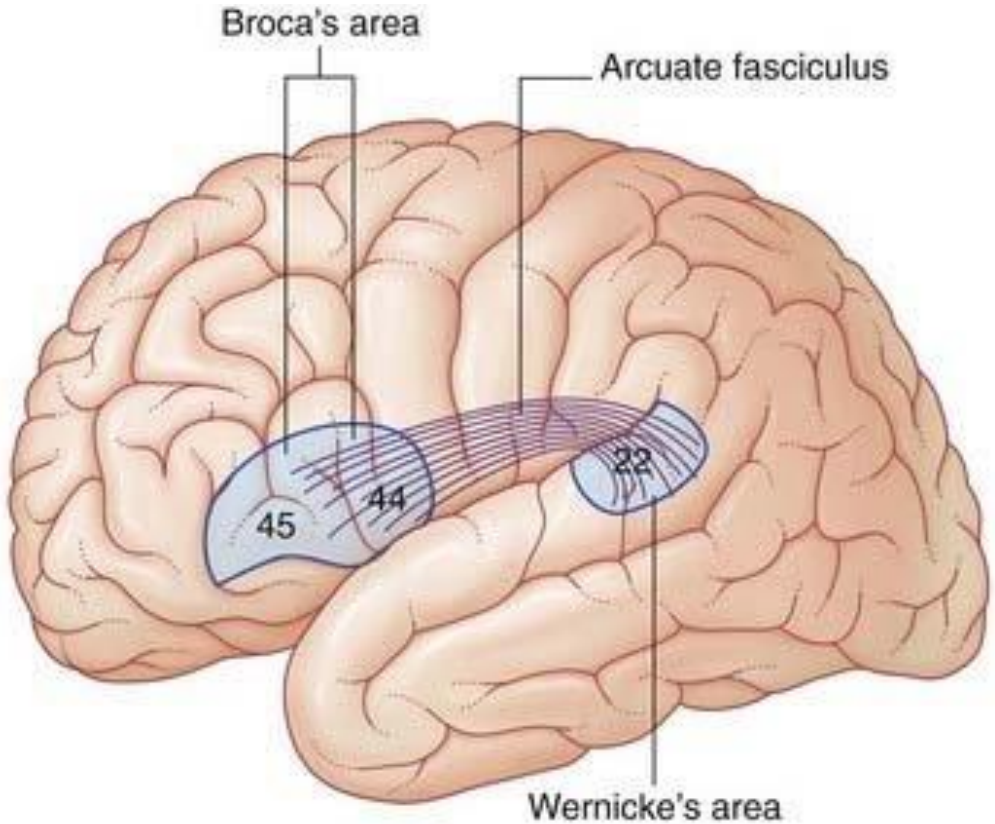

C
Cerebellum
Tonsils
PICA

Nevronavigasjon

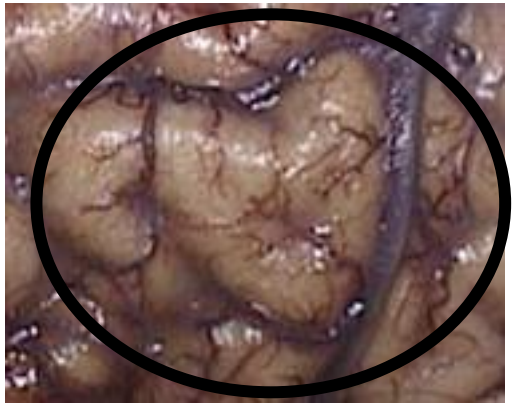


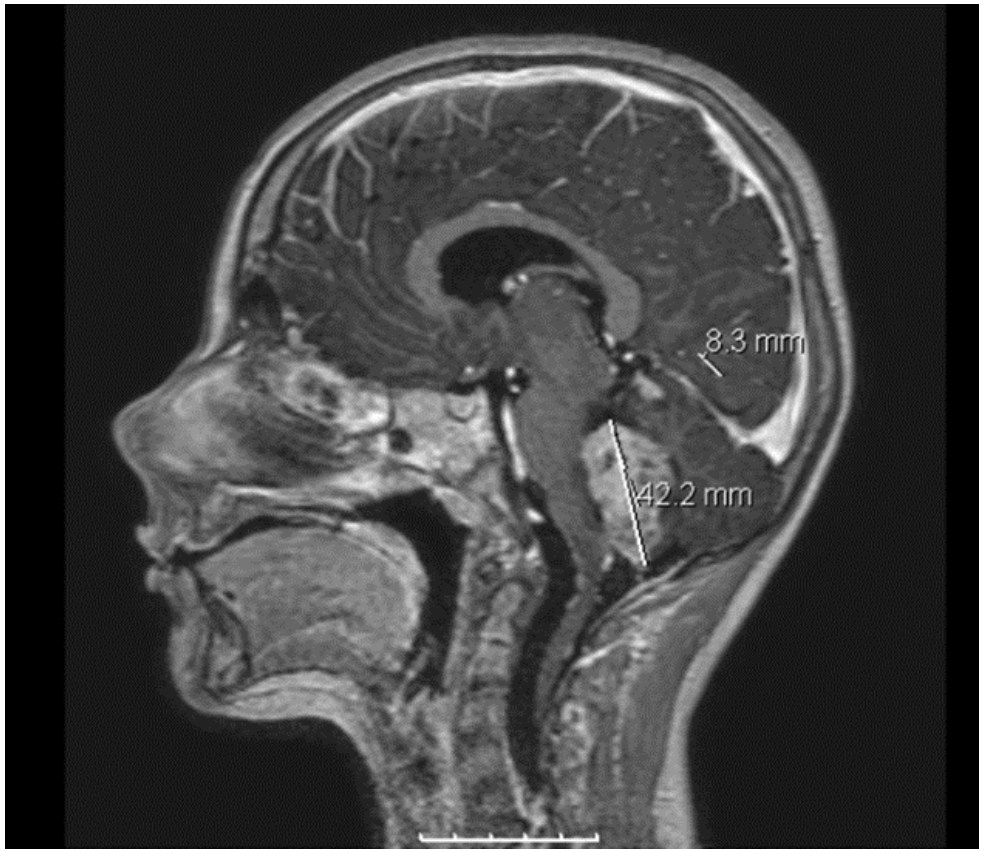


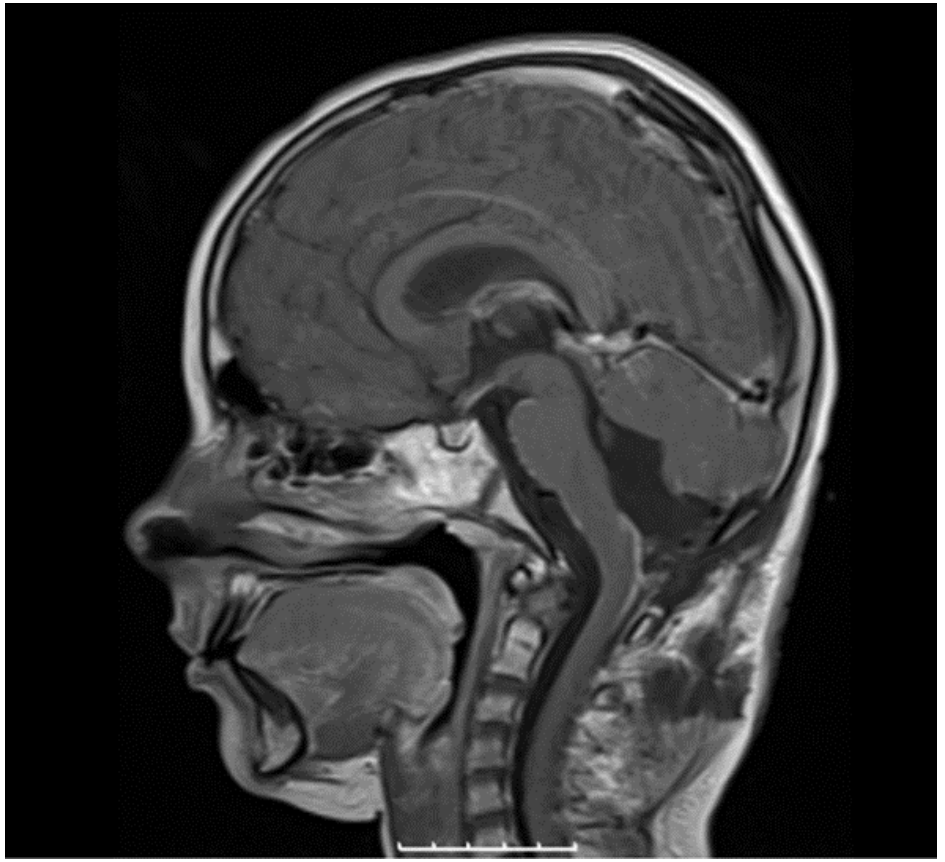
From W.Penfield and T.Rasmussen. The Cerebral cortex in man.1950



Non-contractual photo





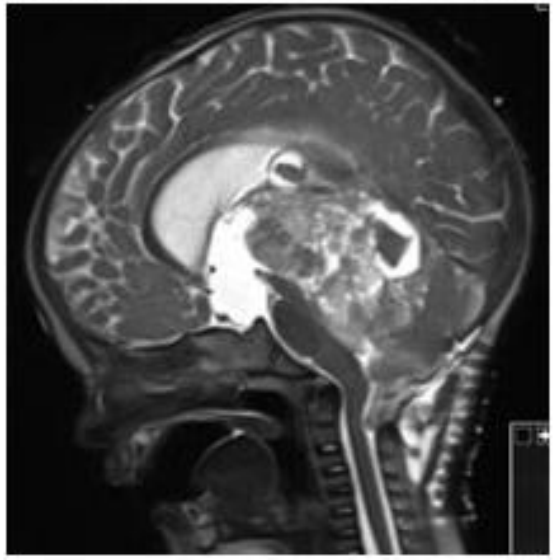


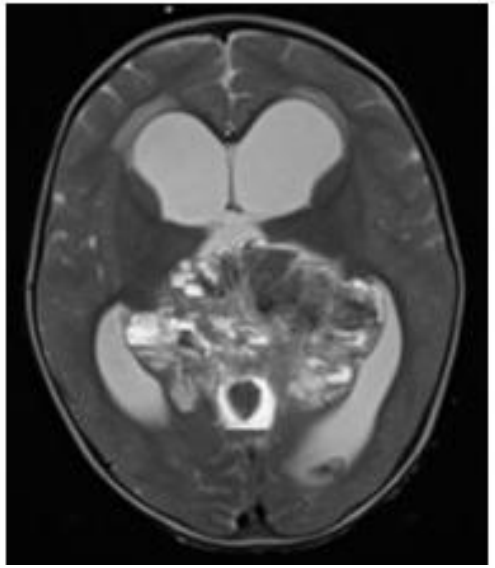

TRMR4
t2_tse_tra_384_p2 3m
HFS
40


C: 431,0, W: 91
t1_mpr_ns_sag
no: 52
FS

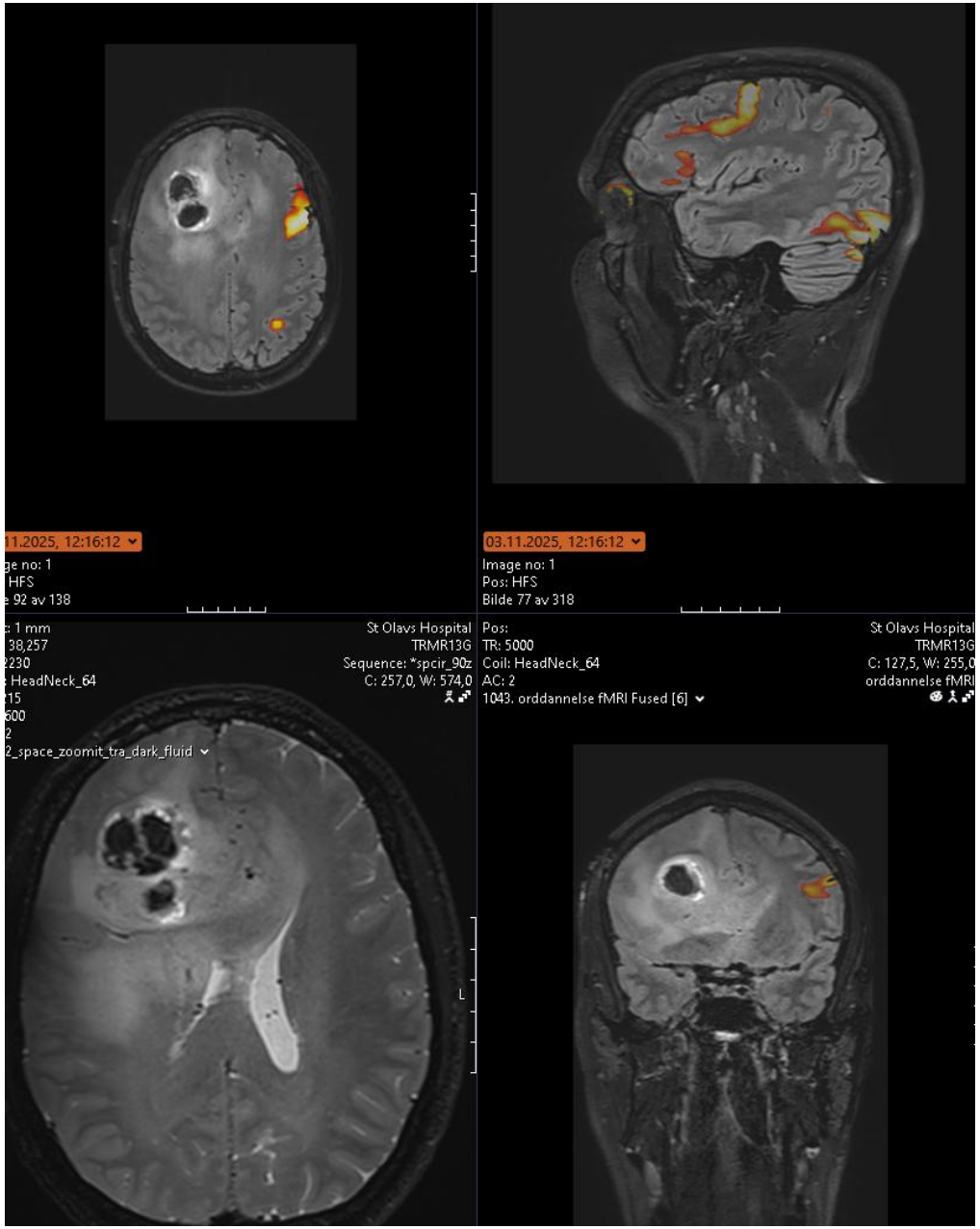

MPR Thi

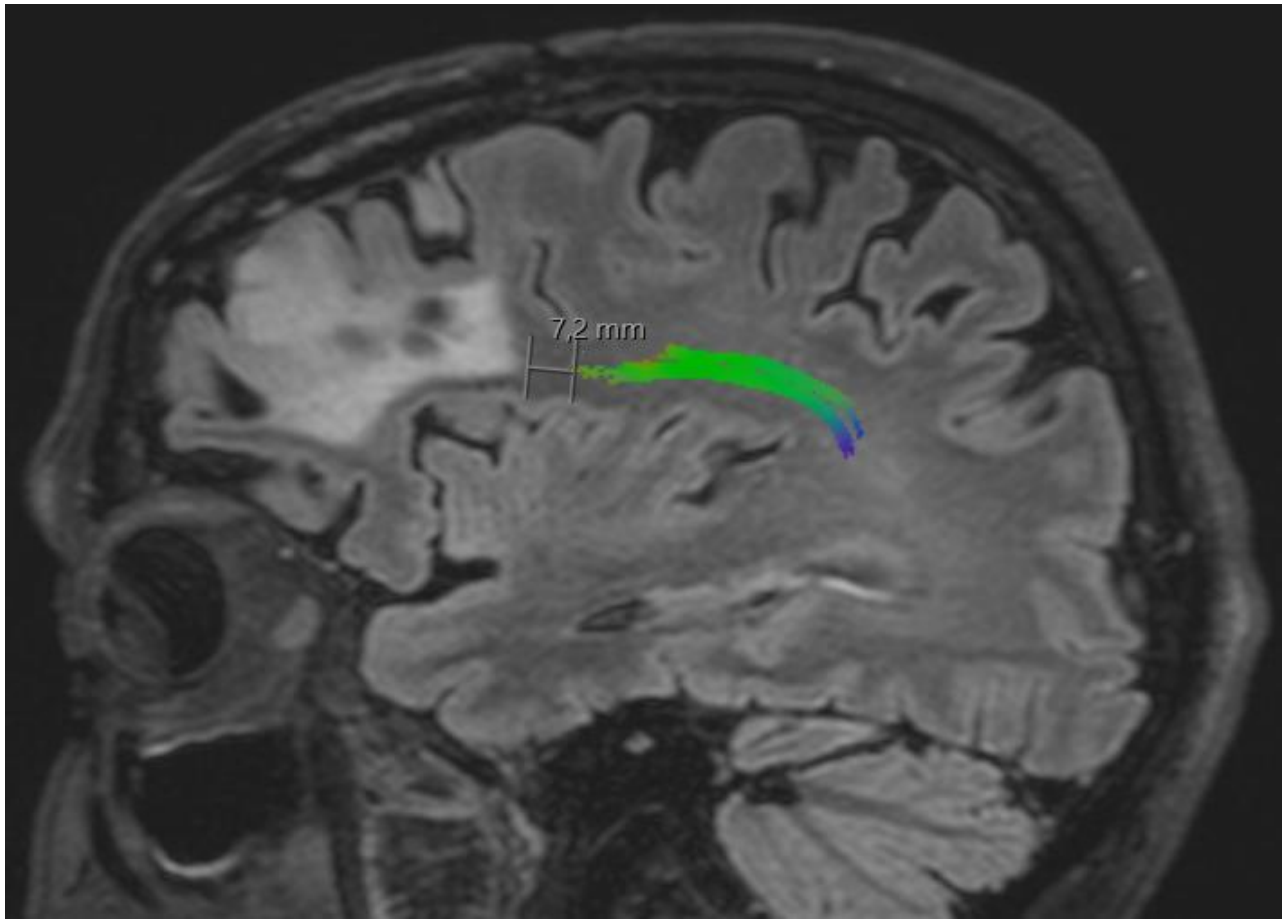

t1_tse_tra
HFS
40

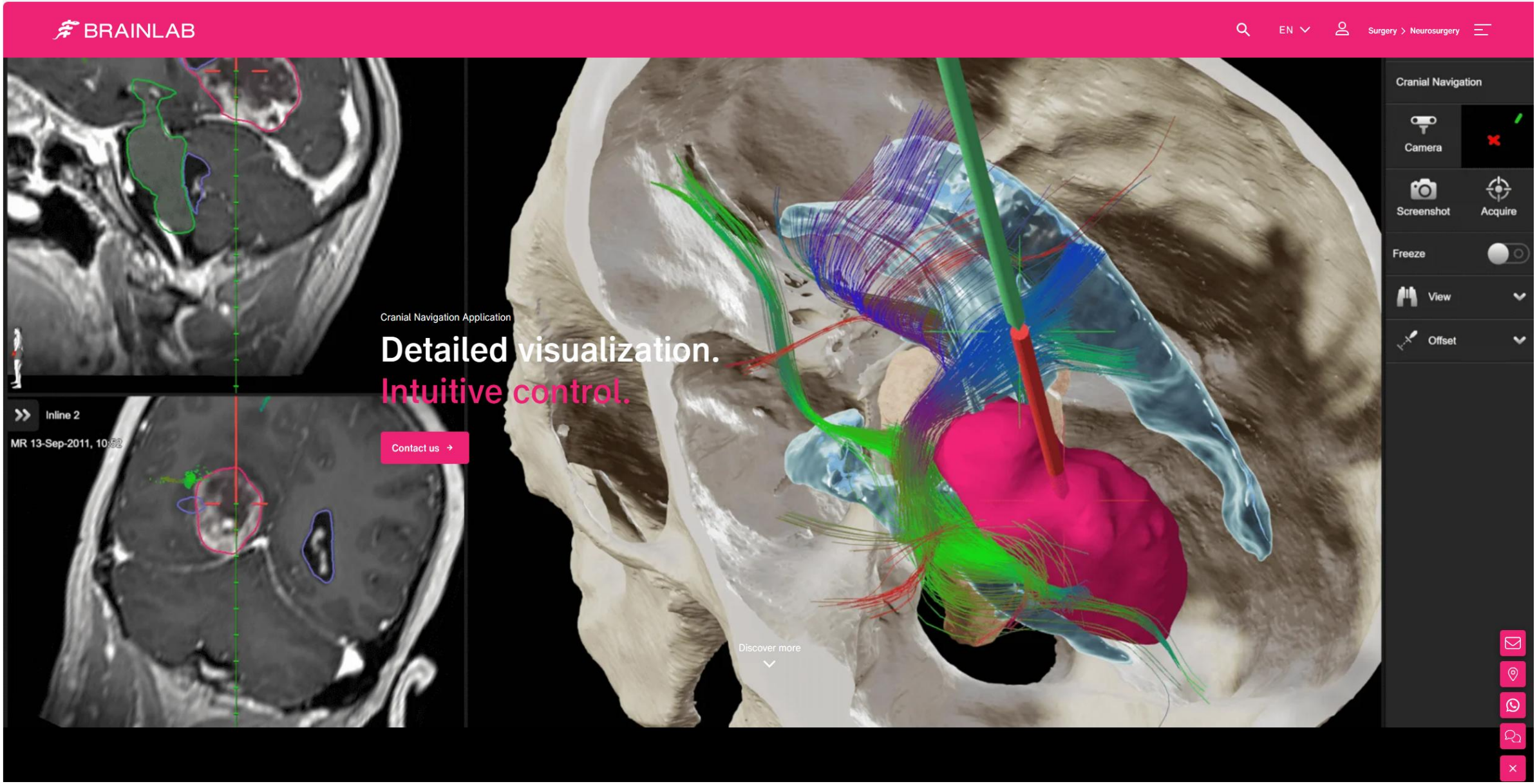




Funksjonell MR




7,2 mm

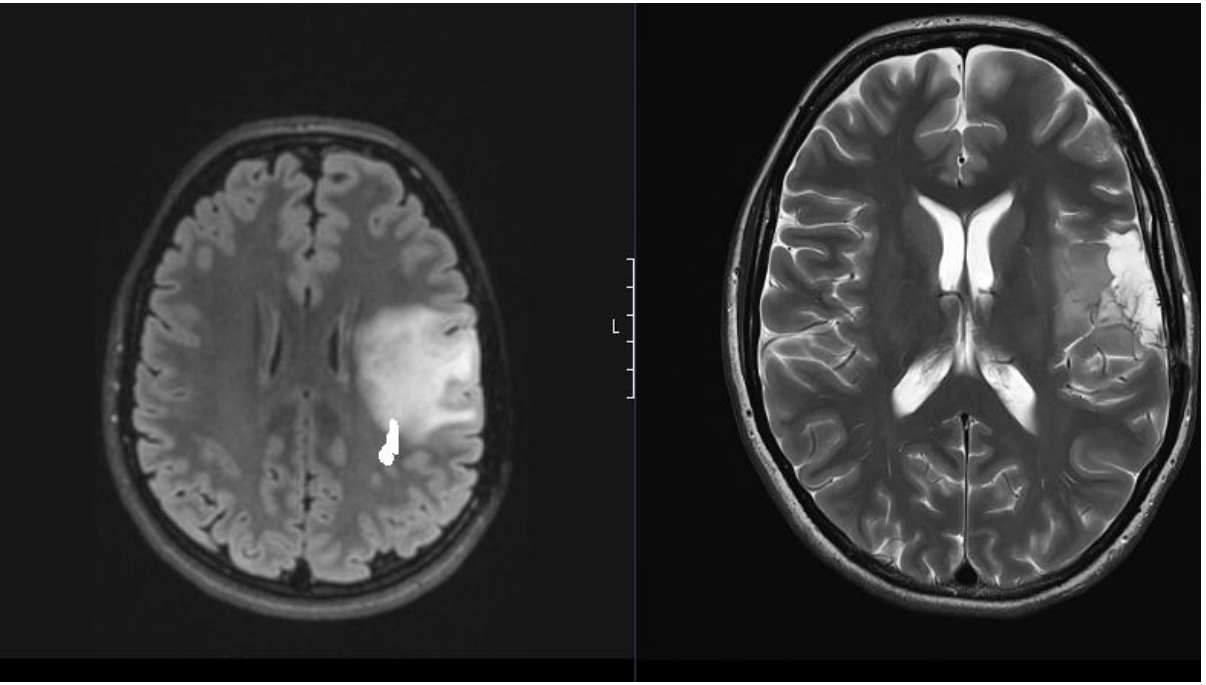

BRAINLAB
EN
Surgery > Neurosurgery
Cranial Navigation
Camera
Screenshot
Acquire
Freeze
View
Offset
Inline 2
MR 13-Sep-2011, 10:52
Cranial Navigation Application
Detailed visualization.
Intuitive control.
Contact us
Discover more

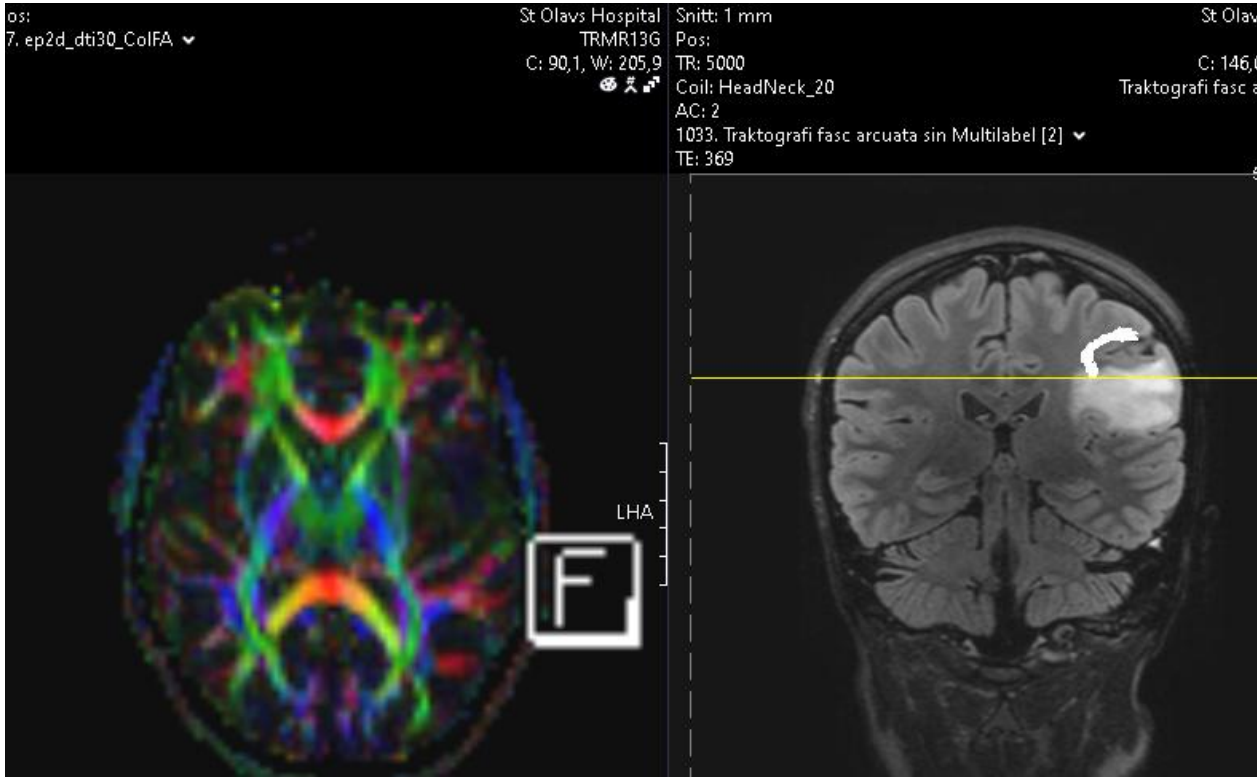
Åpen

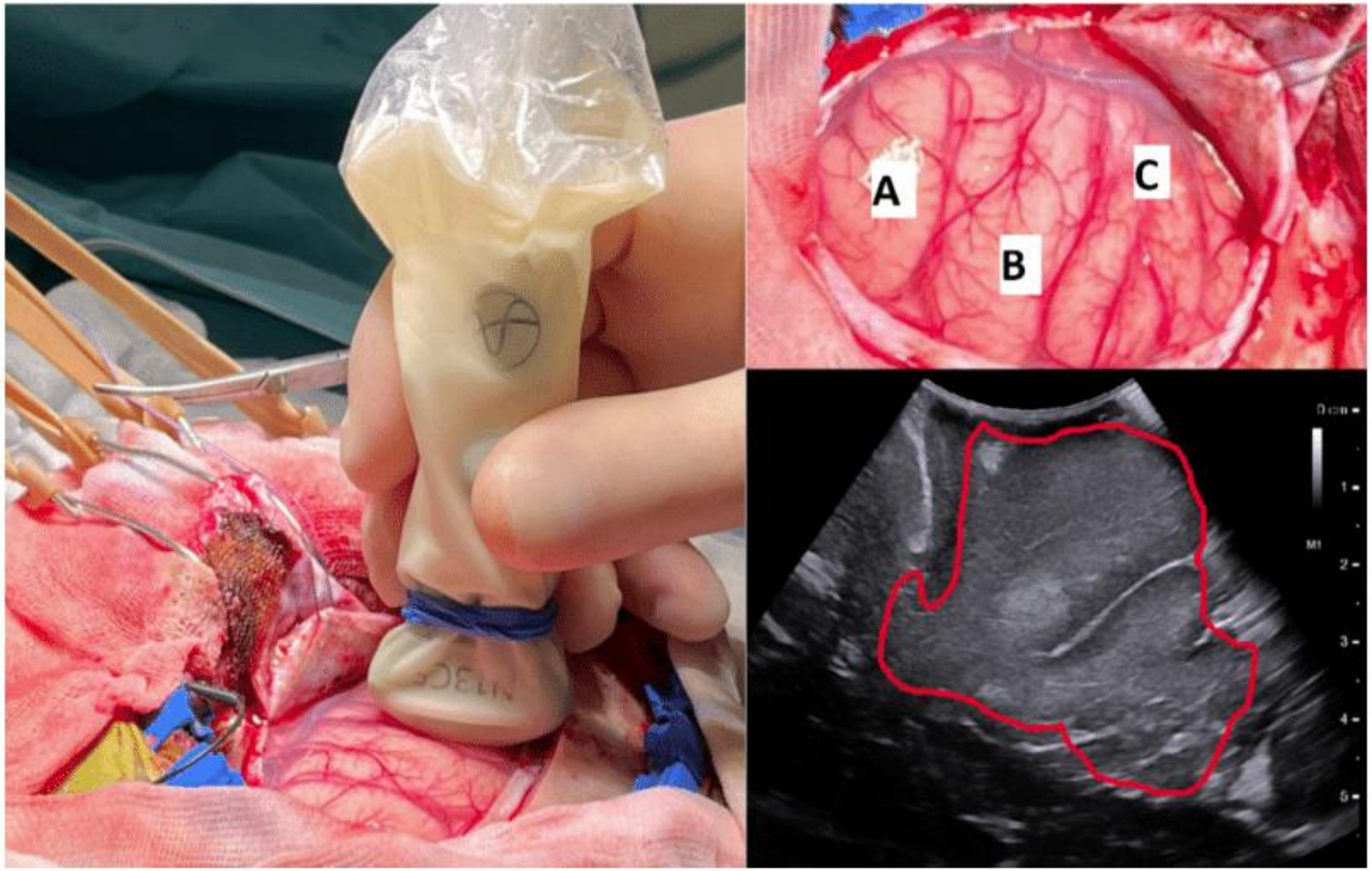
Nevrofysiologi

Nevrofysiologi

Nevrofysiologi og våkenkirurgi

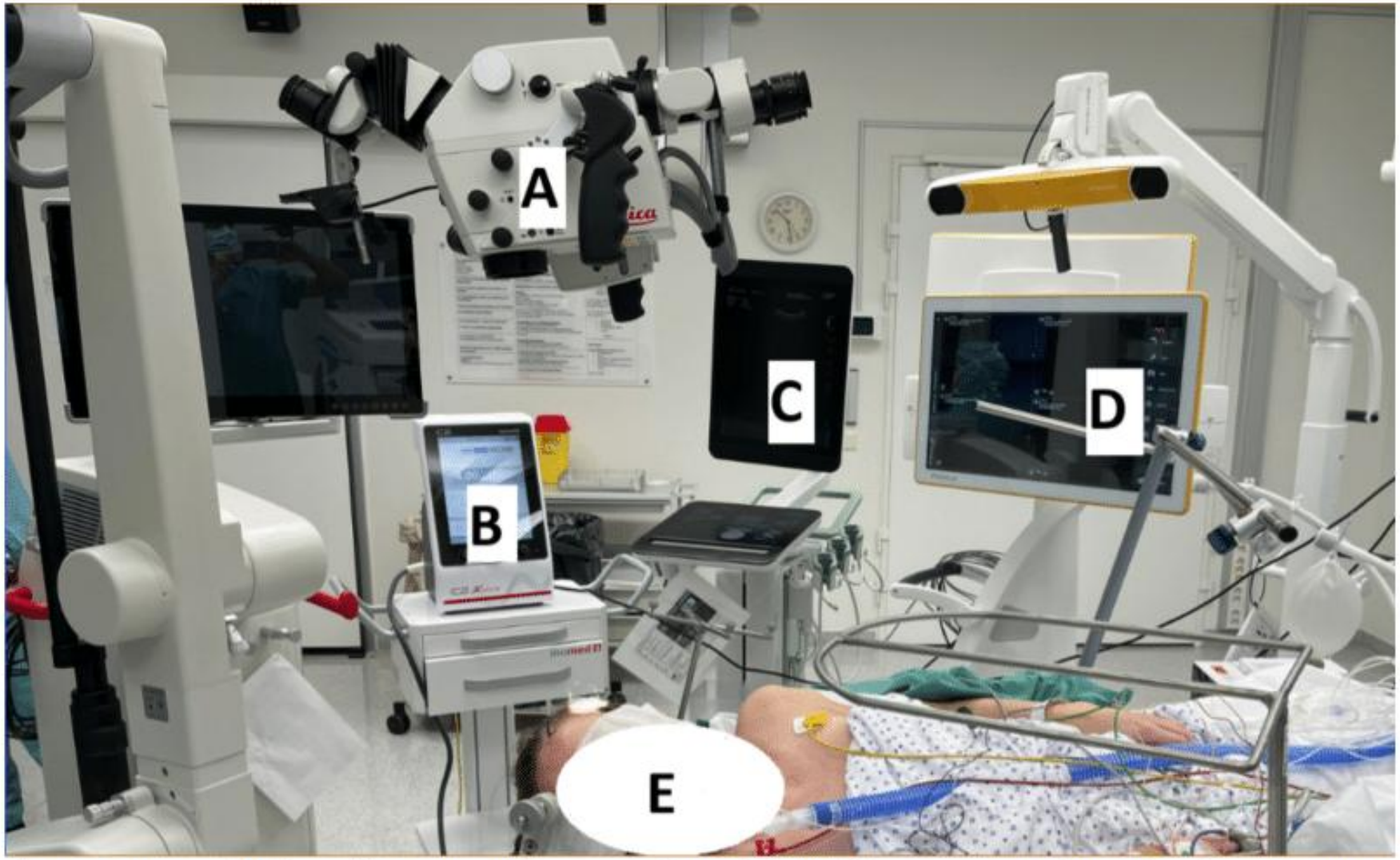






Figur 2: Kraniotomi med funksjonell og strukturell kartlegging. Senorisk korteks (A), motorkorteks (B) og anatomisk Broca (C). Ultralydbildet viser omriss av svulsten, vist i rødt. Hvit substans som vanligvis er fettholdig og lav-ekkogen og derfor mørkere enn hjernebarken på ultralydbilder. Ved lavgradige gliomer er svulsten som sitter i hvitsubstansen høyekkogen.

UL



Figur 3: Oppsett i forberedelse av en våkenoperasjon. Hjelpemidler som operasjonsmikroskop (A), nevro-stimulator for kortikal og subkortikal stimulering og monitorering (B), ultralydscanner for intraoperativ 2D og 3D ultralyd (C), nevronavgasjon (D) er klare. Pasienten sover med larynxmaske (E).

Reseksjon

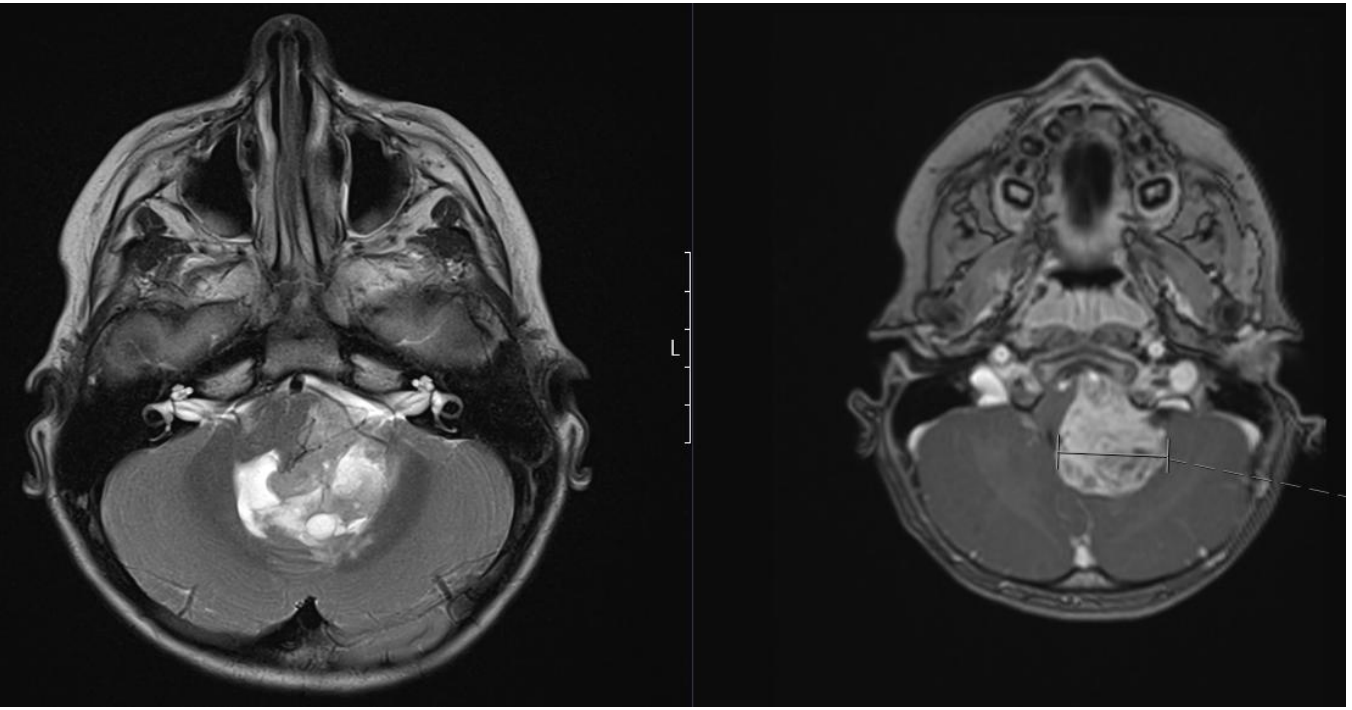
Mikroinstrumenter og sug

Ultralyd-aspirator

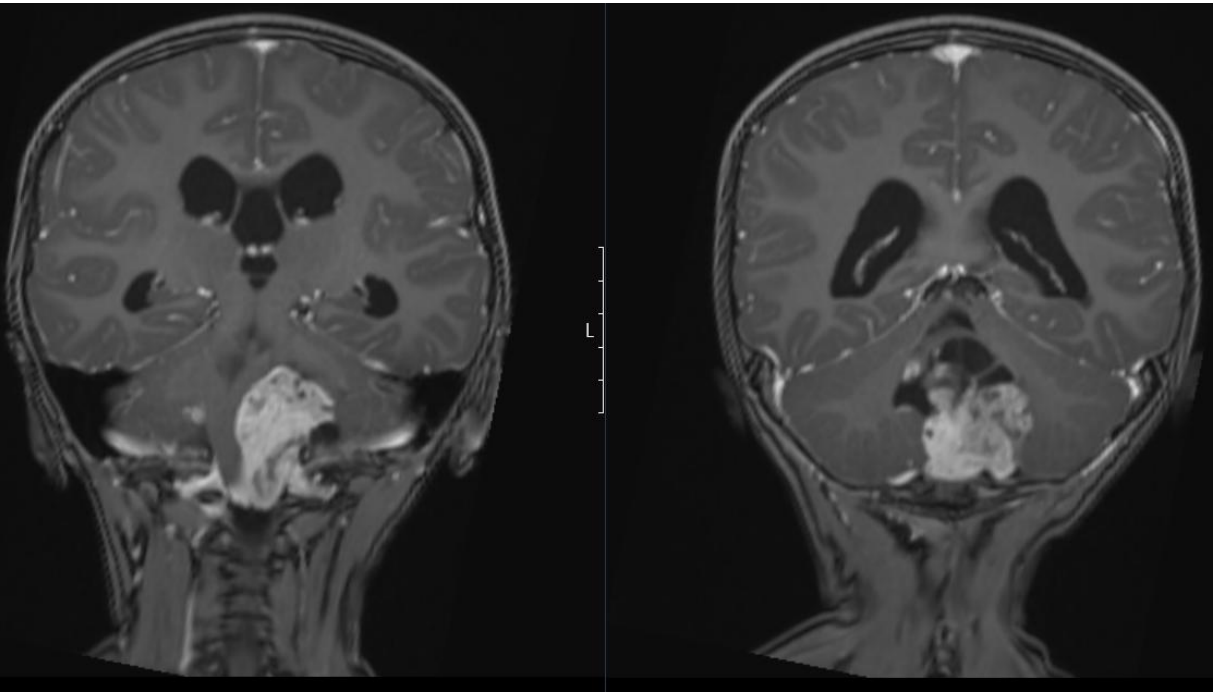
Hvilken tumor er det?

Biopsi, frysesnitt, nanopore

Ependymom

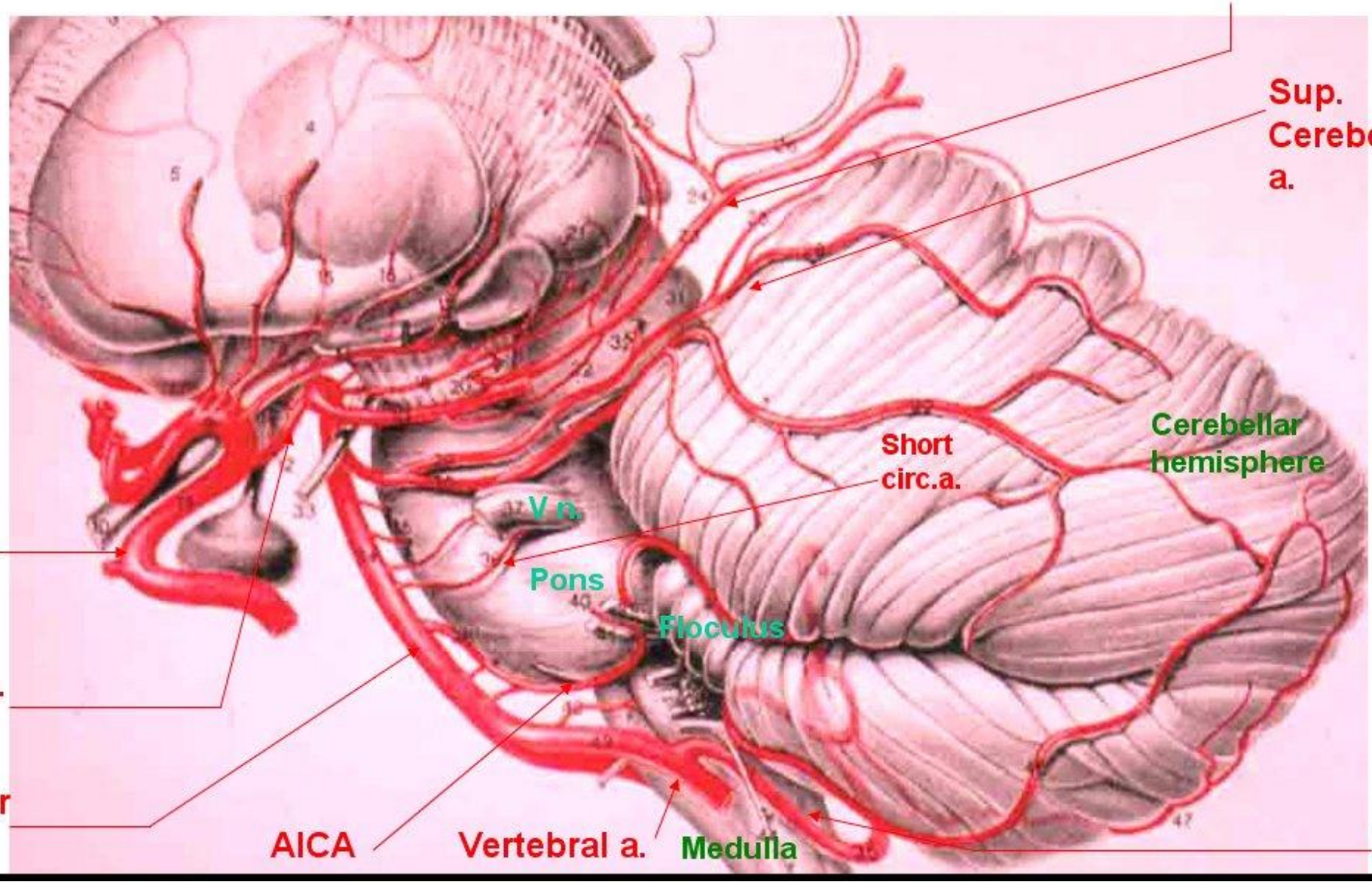

L

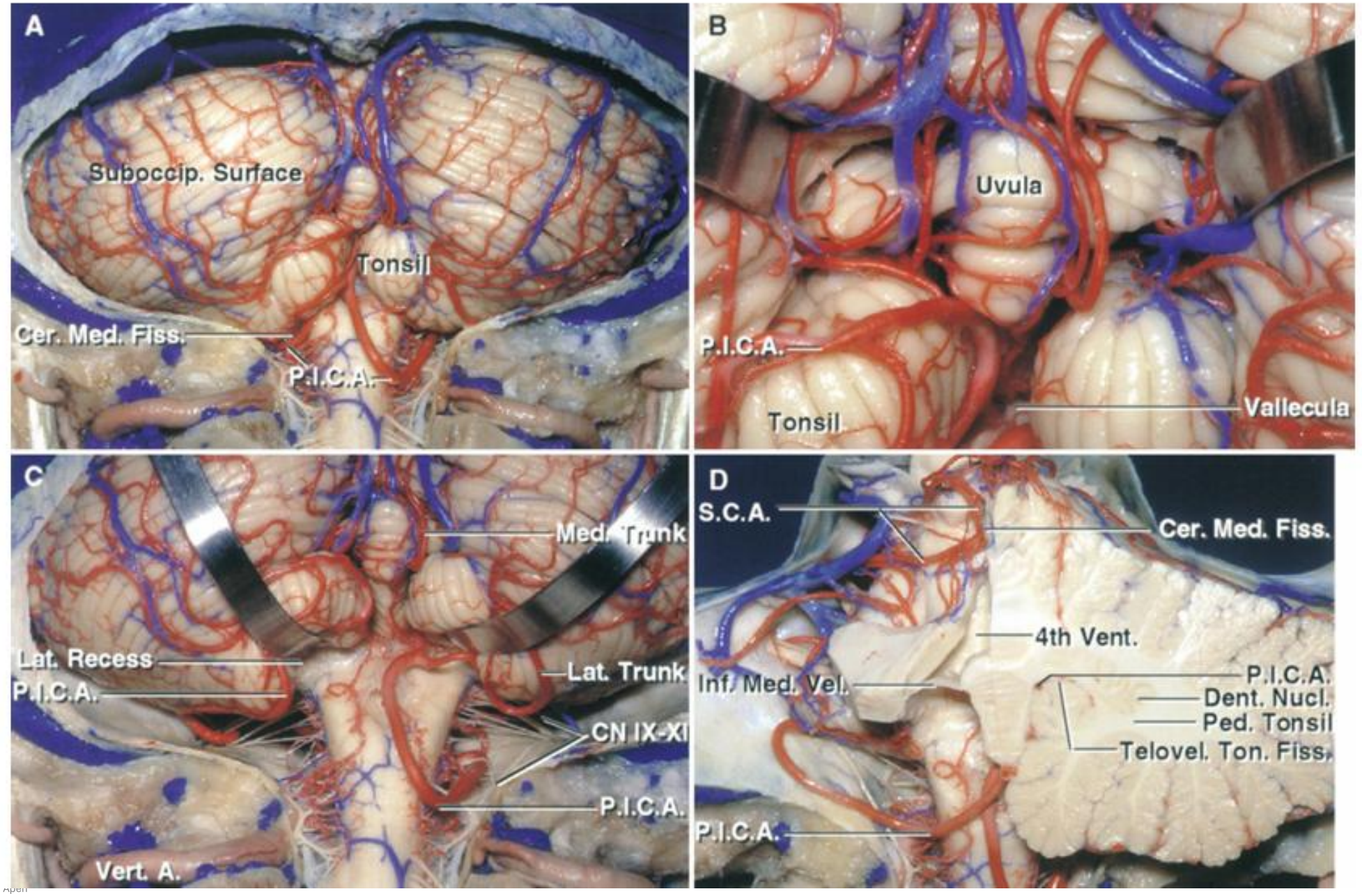

P
56,0

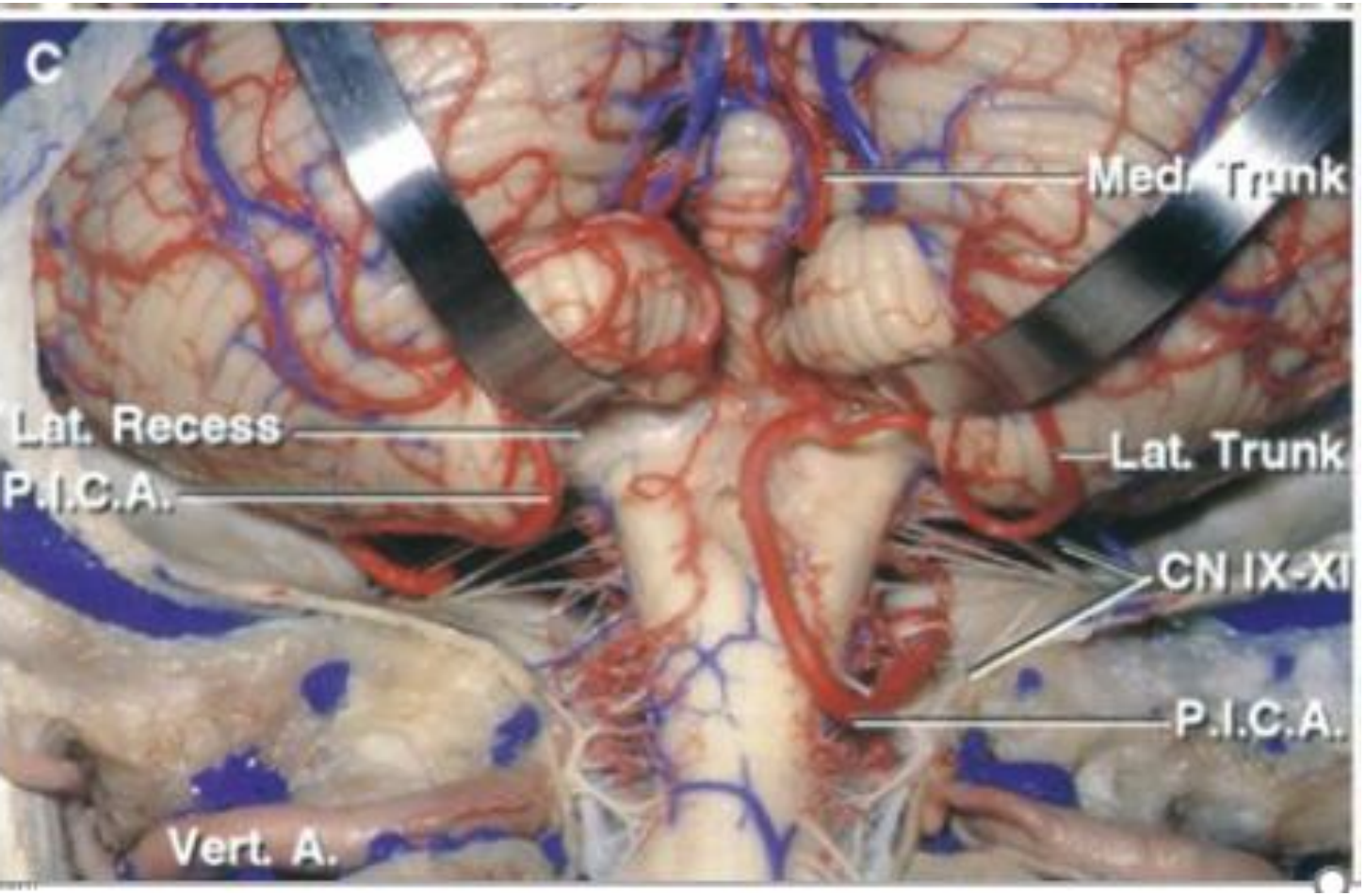

L

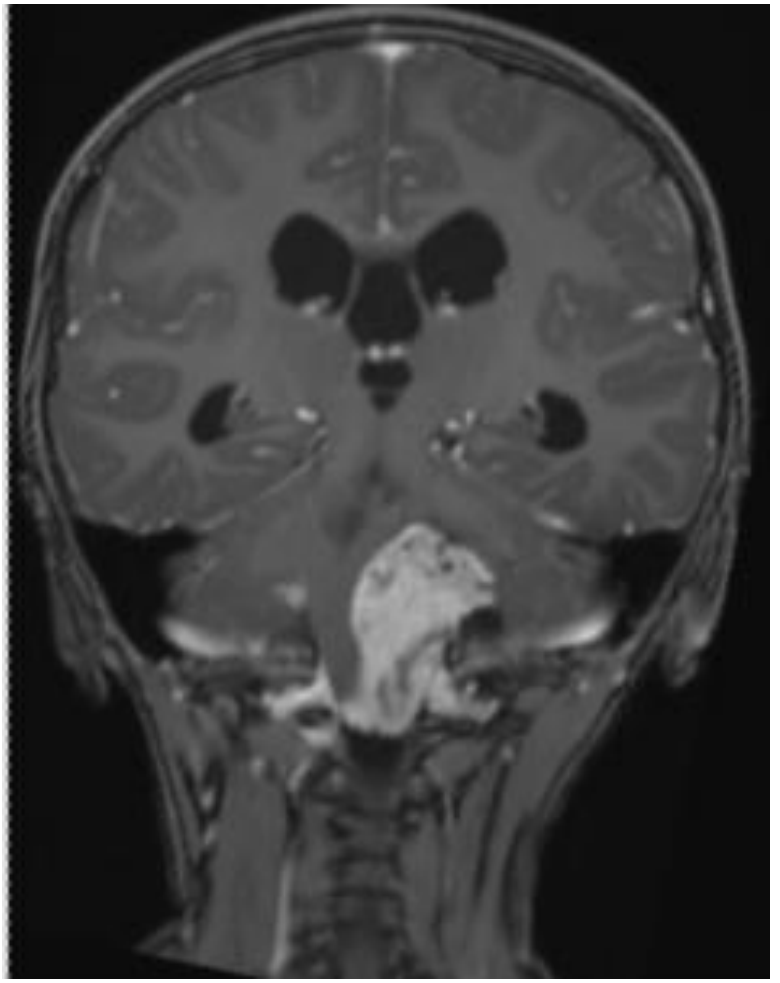
Arteries of brain stem and cerebellum

From by R.Nieuwenhuys, J.Voogd, C.van Huijzen . The central nervous system . Springer 3rd ed. 1998

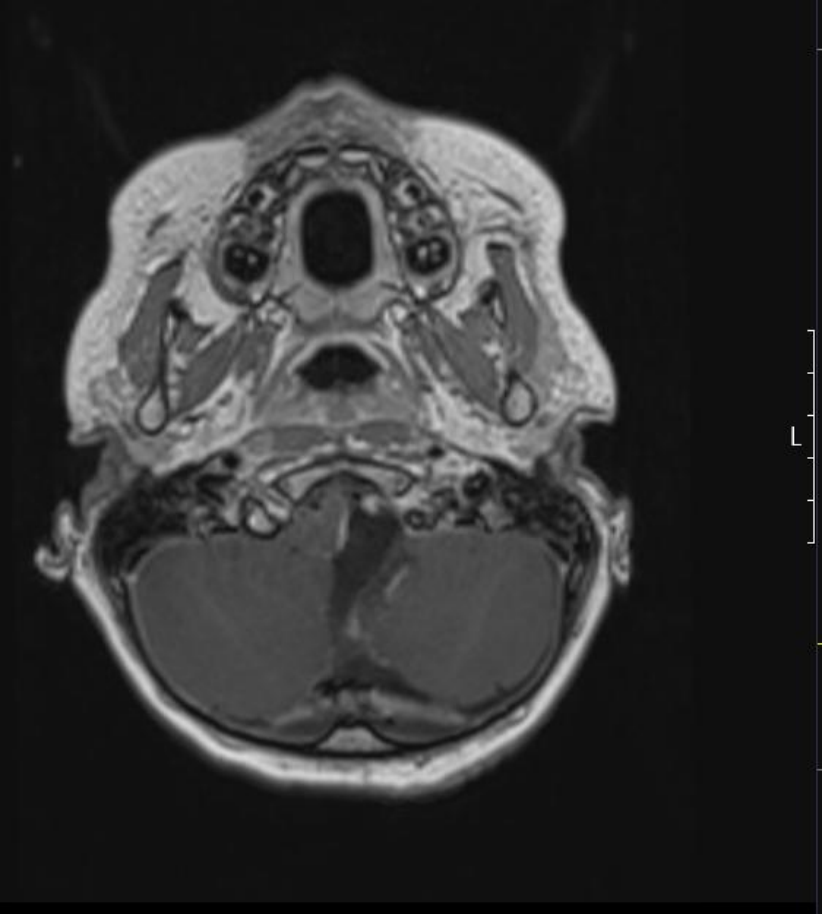


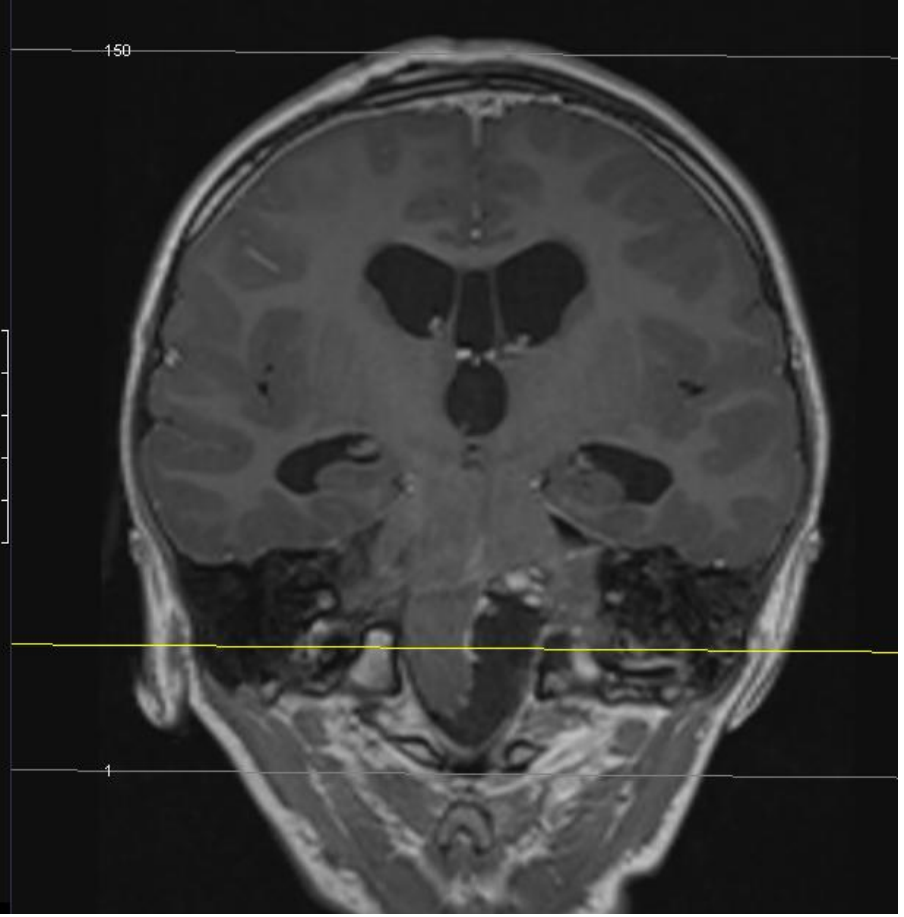

A
Suboccip. Surface
Tonsil
Cer. Med. Fiss.
P.I.C.A.
B
Uvula
P.I.C.A.
Tonsil
Vallecula
C
Med. Trunk
Lat. Recess
P.I.C.A.
Lat. Trunk
CN IX-XI
P.I.C.A.
Vert. A.
D
S.C.A.
Cer. Med. Fiss.
4th Vent.
Inf. Med. Vel.
P.I.C.A.
Dent. Nucl.
Ped. Tonsil
Telovel. Ton. Fiss.
P.I.C.A.

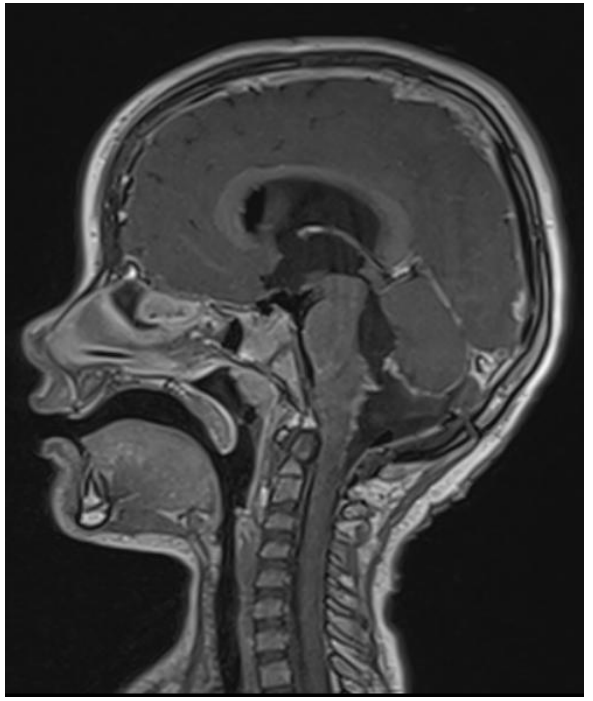

C
Med. Trunk
Lat. Recess
P.I.C.A.
Lat. Trunk
CN IX-XI
P.I.C.A.
Vert. A.

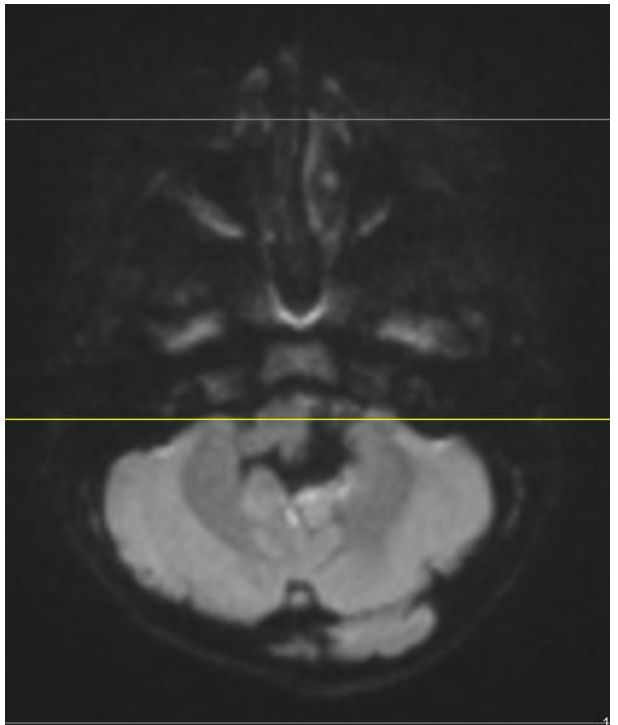


Intraoperative MRI (iMRI)





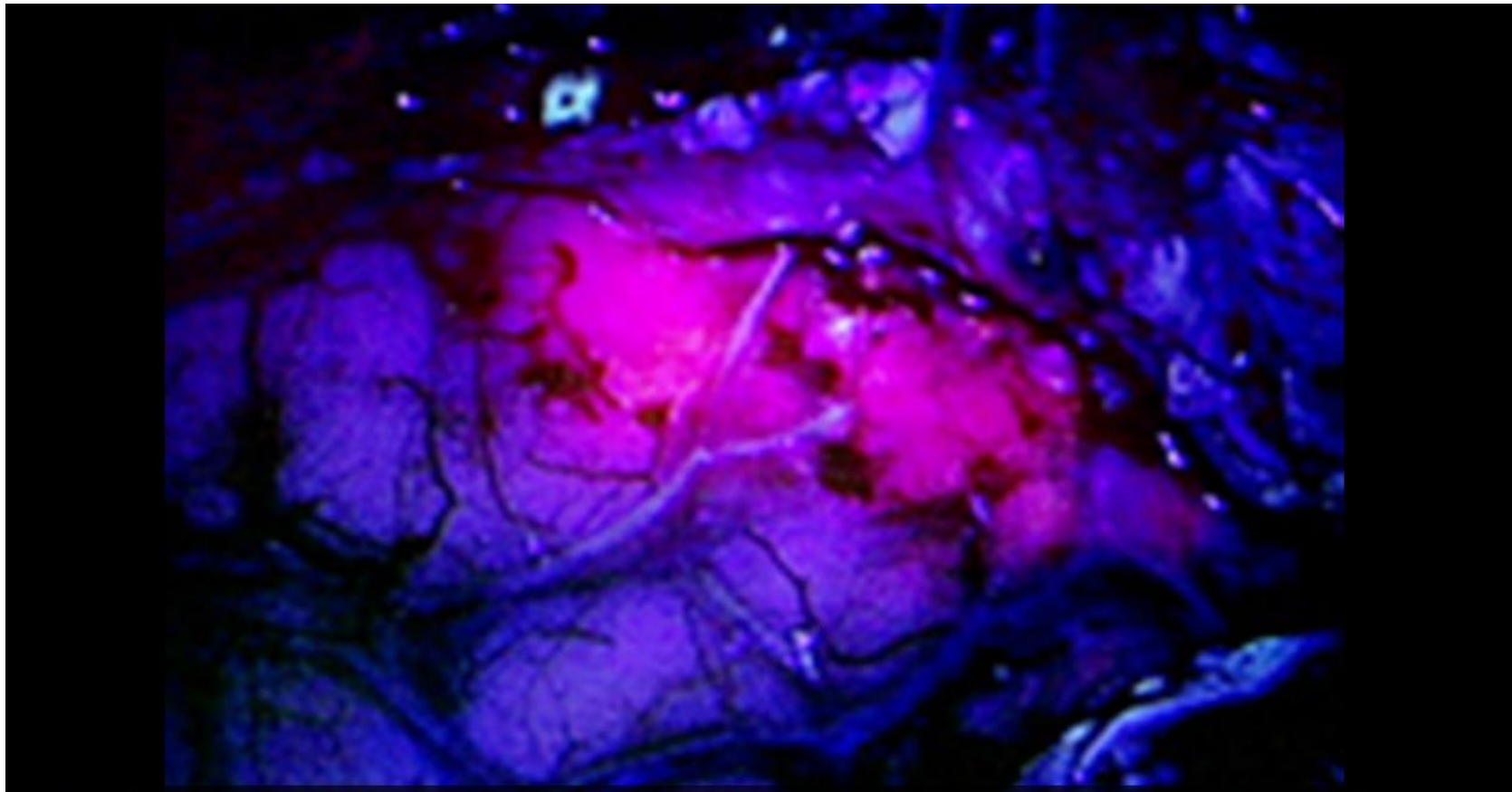




Pink drink is helping surgeons spot aggressive brain cancers... by making tumours 'glow in the dark'

- **The drink, called Gliolan or '5-ALA', uses a dye that reacts with a compound in the cancer which glows a pinkish colour when an ultraviolet light is shone on it**
- **Brand new innovation is now being used by neurosurgeons across the UK**
- **Technique doubles the chances doctors will find and remove all the cancer**

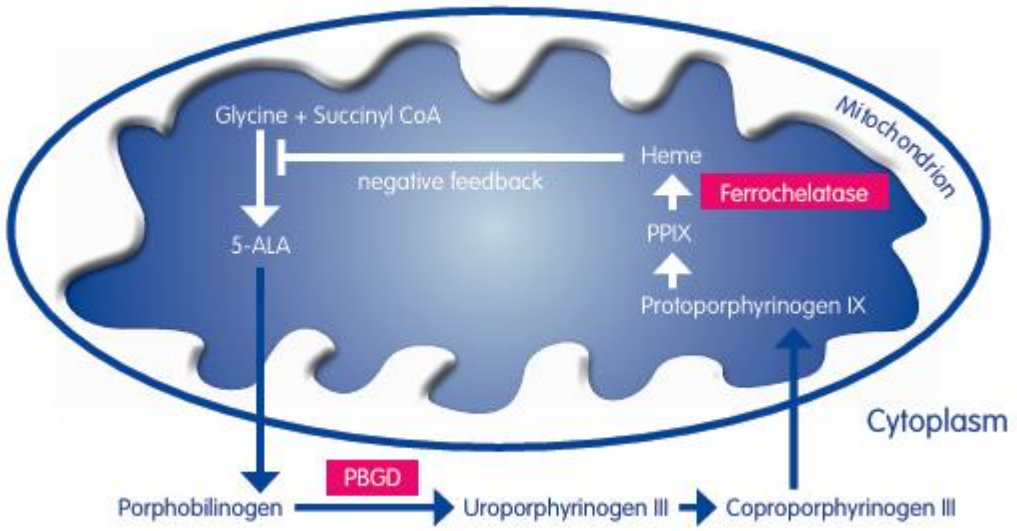
By ETHAN ENNALS, HEALTH EDITOR
PUBLISHED: 22:05 GMT, 15 August 2020 | **UPDATED:** 11:54 GMT, 16 August 2020



The drink, called Gliolan or '5-ALA', uses a dye that reacts with a compound in the cancer which glows a pinkish colour when an ultraviolet light is shone on it, helping surgeons tell diseased tissue from healthy areas

Gliolan

Fig. 2: Heme biosynthesis pathway. Accumulation of PpIX following external 5-ALA administration



5-ALA = 5-aminolevulinic acid PBGD = porphobilinogen deaminase PPIX = protoporphyrin IX

Fluorescein