

Acut

Subacut

Chronic



Acut



Acut



Emergency



Her ne var ise Âlemde
Hepsi vardır Adem'de
Mevlânâ

Anthropocentric Concept

Metres

Size of the Universe

← → 10^{25}

Distance of nearest galaxy

Distance of galactic centre

← → 10^{20}

Distance to nearest star

← → 10^{15}

Distance to the Sun

← → 10^{10}

Radius of the Earth

← → 10^5

Man

← → 1

Living cell

← → 10^{-5}

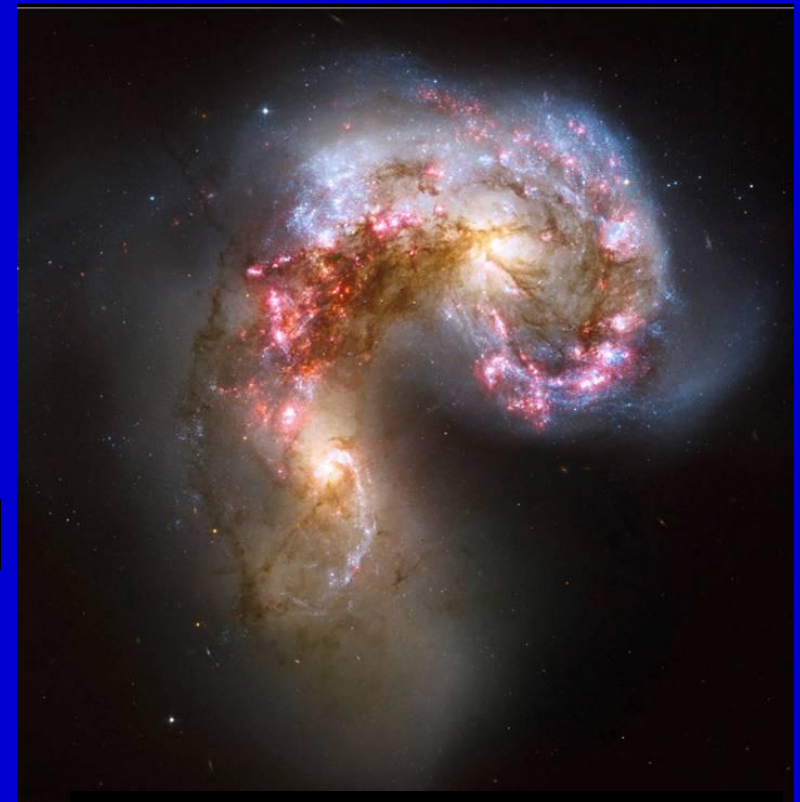
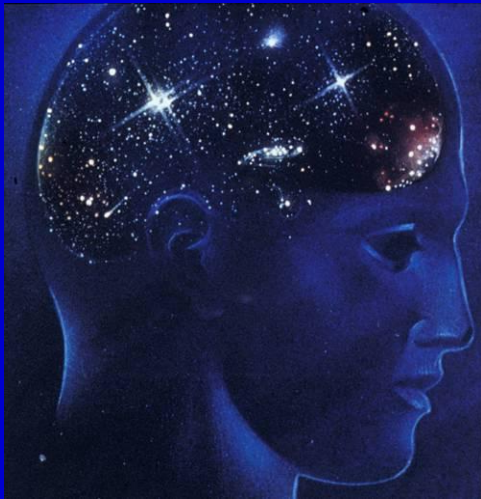
Molecule of DNA

Size of atoms

← → 10^{-10}

Size of protons

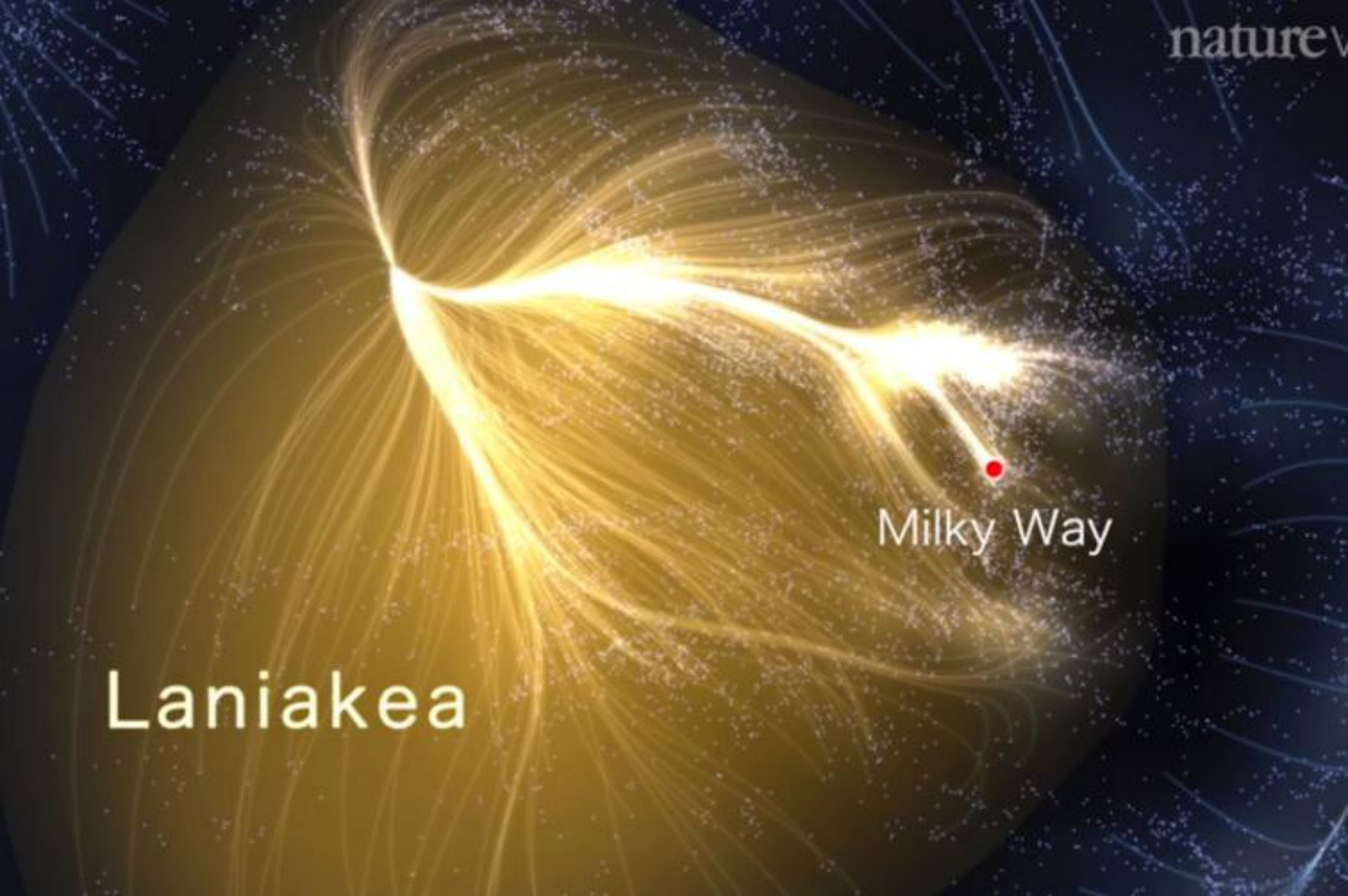
← → 10^{-15}



NGC 4038-4039 Antennae Galaxies



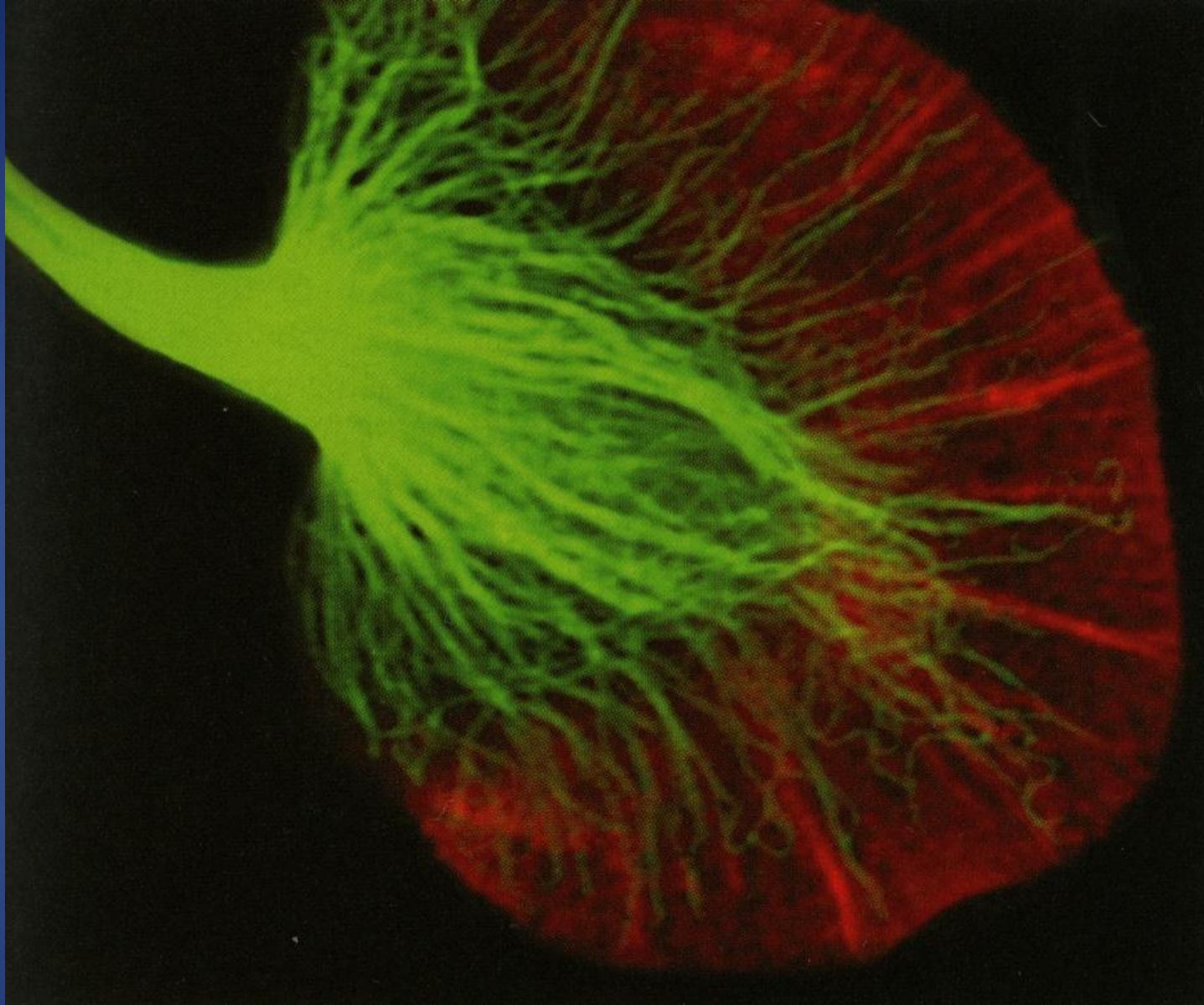
Proton – antiproton collusion



Laniakea

Milky Way

Our Place in the Universe



Aplysia Bag Cell Growth : Microtubules (green), Actin (red)

Sutter – Forscher 2004

- Alem büyük bir insan
- İnsan küçük bir alem
- Her insanda binlerce alem var.
- Bir günde sabahtan akşama kadar kızan, seven, haykıran, dehşet alan, gülen, ağlayan.....insan



İNSAN BEYNİNİN ÇOK BOYUTLU YAPI VE İŞLEVLERİ ;

EVRENSEL
BİYOLOJİK
PSİKOLOJİK
SOSYAL

FİZYOLOJİK
veya
PATOLOJİK

Interactive Organ - Systems of the CNS

Parenchymal Organ

P

Vascular Organ

V

CSF Organ

C

Circumventricular Organ

Ci

Endocrine Organ

E

Immune Organ

I

Genetic Organ

G

Sense Organs

S

Autonomous Nerv.Org.

A

Cranial Spinal Nerves

P

Protective Organ

✓ SCALP

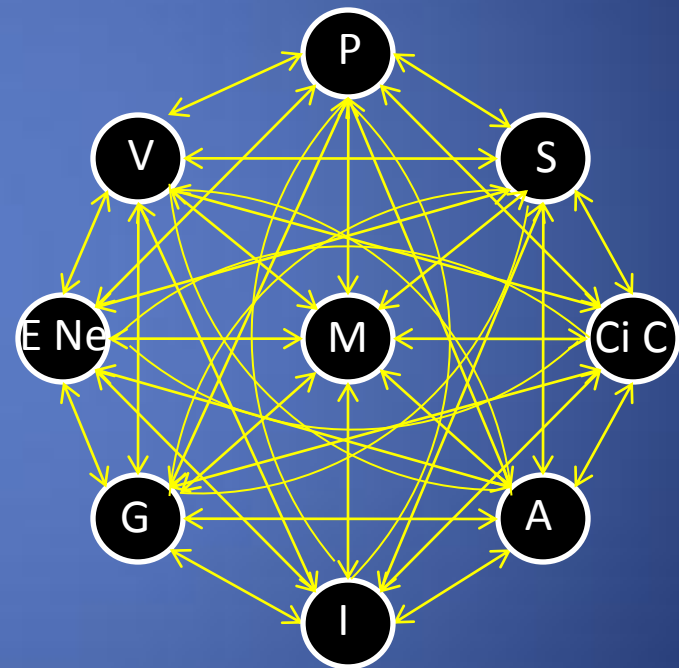
✓ Cranium / Spine

✓ Meninges

✓ Peripheral nerves

Mental activities

M



VISUALIZATION OF THE CNS

Morphological (structural) studies

- 1900 Roentgen ray
 - 1920 Pneumoencephalography
Myelography
 - 1930 Cerebral angiography
 - 1950 Catheter angiography
 - 1960 Spinal angiography
 - 1970 Computer tomography
 - 1980 DSA
 - 1985 MRI
 - 1988 MRA
 - 1990 3D MRI, 3D MRA
 - 1992 Echo-planar MRI
 - 1998 3D CTA, rotational
 - 2000 dMRI and DSI
 - 2000 Neuro-Endoscopy
-
- 1886 Apocromatic microscope
 - 1897 Stereomicroscope
 - 1933 Electron microscope
 - 1953 Binocular operation microscope
 - 1981 Scanning tunneling microscope
 - 1987 Positron microscope

Physiological (functional) studies

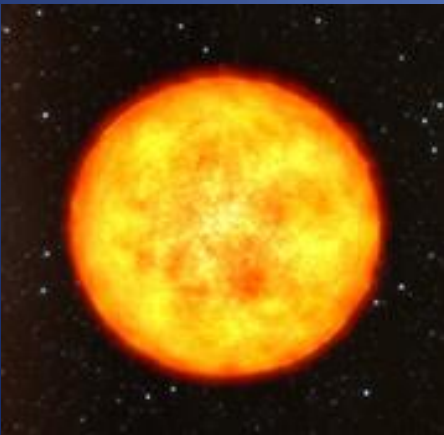
- 1870 History
- 1900 Clinical examination
- 1901 Spinal fluid analysis,
Laboratory tests
- 1935 EEG, evoked potentials, EMG,
EPG
- 1945 Kety-Schmidt clearance
- 1950 RISA-Ventriculography
- 1960 CSF cellular and immunological
testing
- 1965 ICP monitoring
- 1968 MEG
- 1970 SPECT, PET
- 1975 Regional blood flow clearance,
Xenon CT
- 1985 Transcranial doppler
- 1991 Transcranial oxymetry
- 1992 Spectroscopy, Functional MRI

2014 Nanoscope

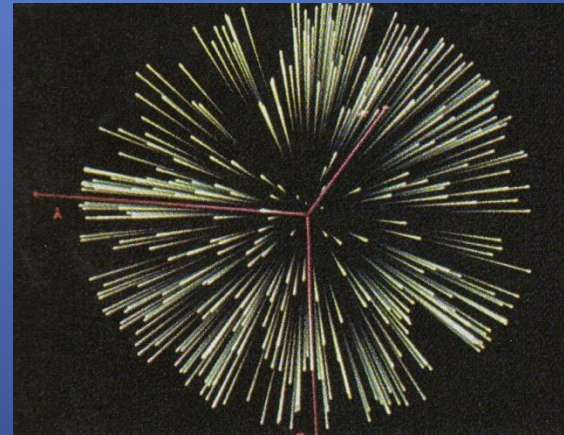
Daha iyi görmek, daha temelli bilgi yaratır.

Daha iyi bilgi de daha temelli görmeyi sağlar.

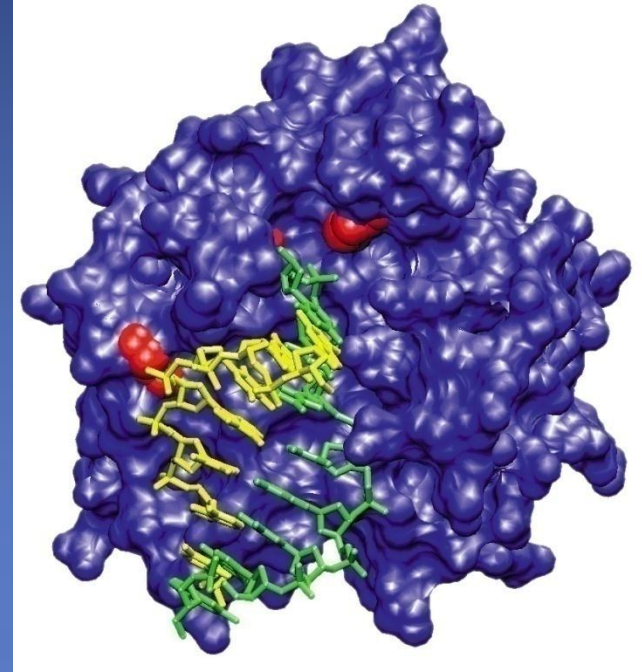
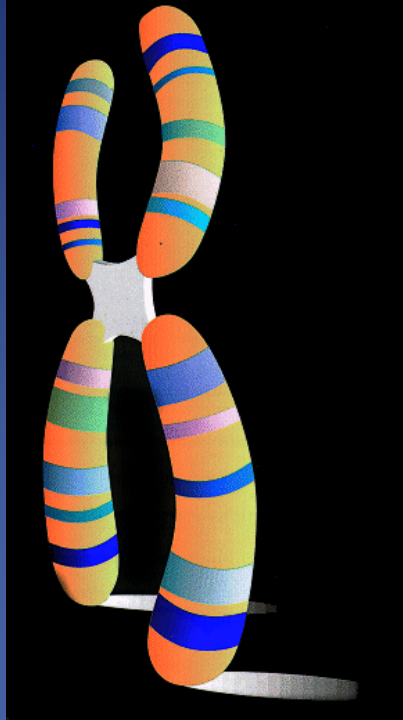
Göremediğimizi görmek
Görülmeeyeni görüntülemek
Bilinmeeyeni açıklamak



Oldest Star of
Cosmos HE
1523-0901
13.2 Billion Years



Electrical
activities of
Moto-neuron



Pauling (1930)
 Stemann (1938)
 Chagraf (1940)

•Molecular Biology

➤Nanometric



Crick-Watson
 Vilkins-Franklin
 (1953)

Genetic Biology

➤Picometric

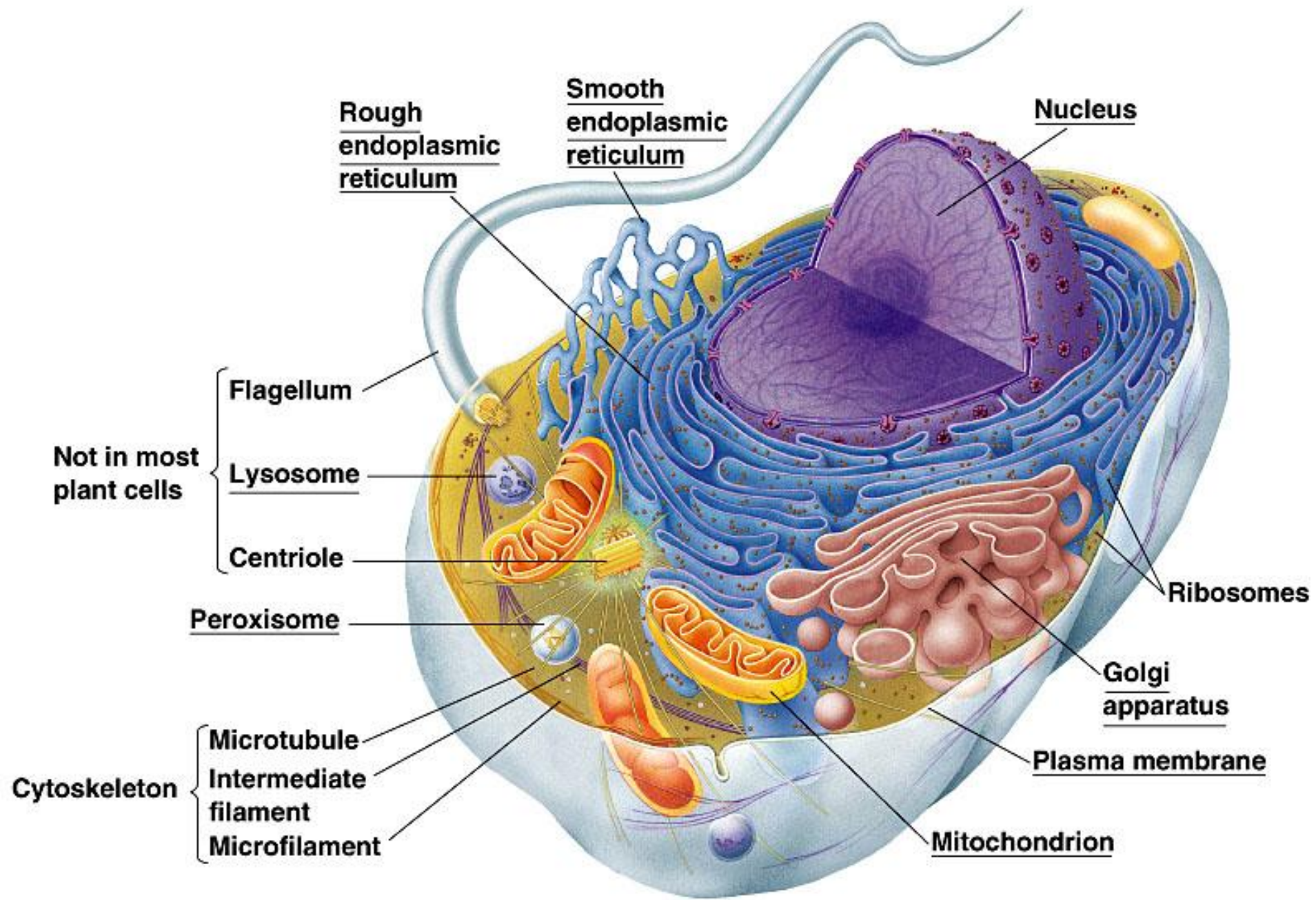
Nireinbeg-Khorana
 (1966)

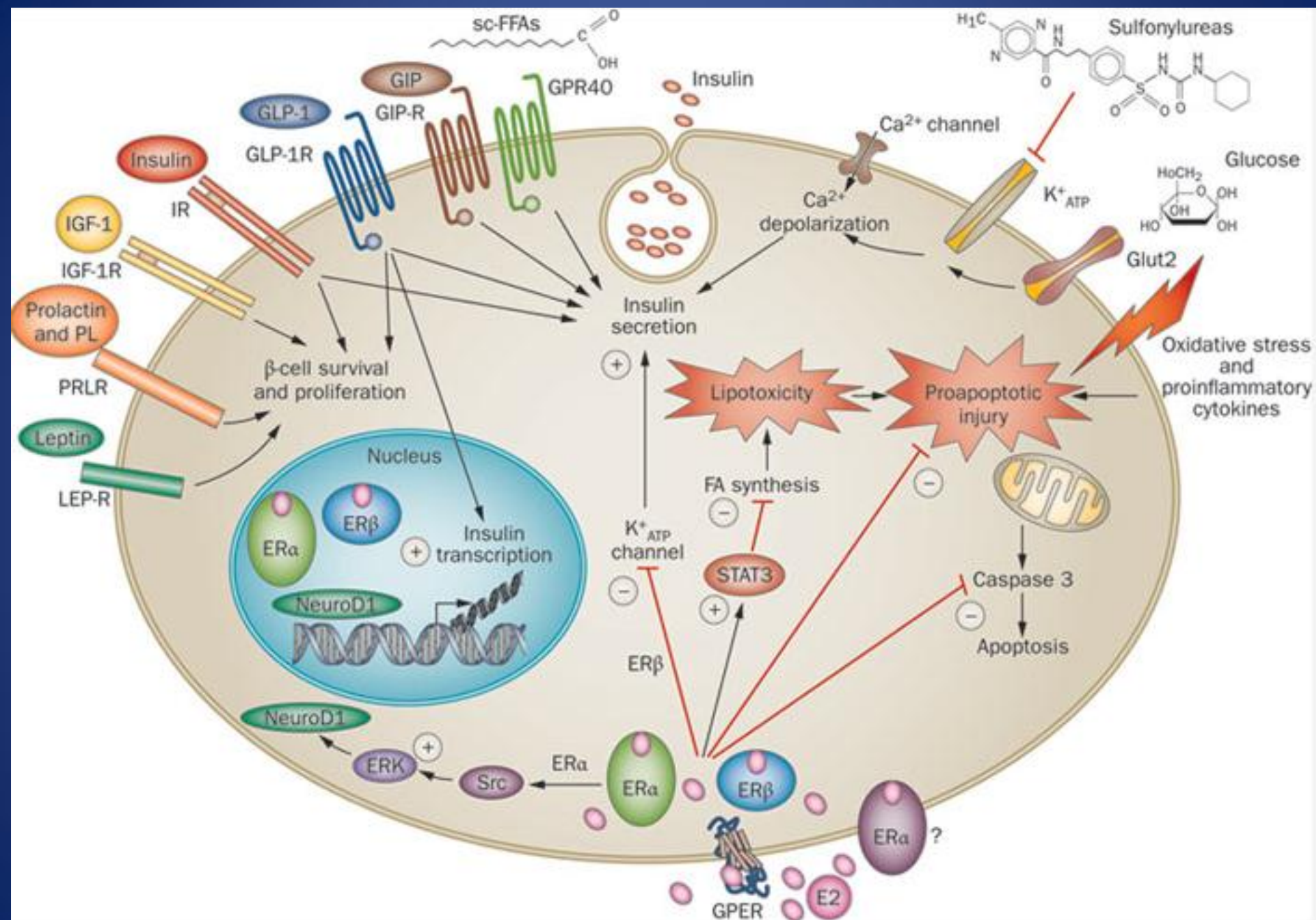


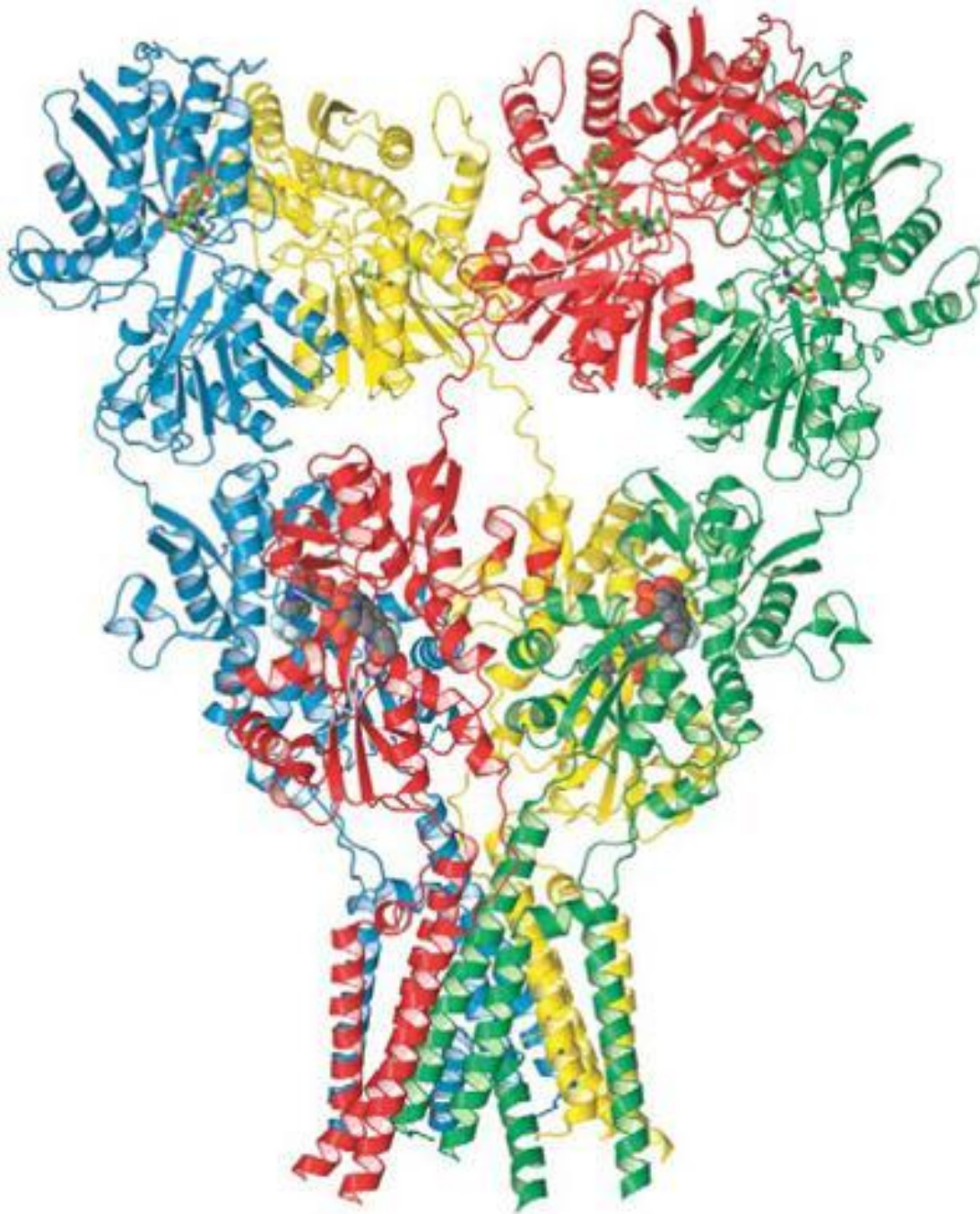
Boyer-Cohen (1973)
 Grewall et al. (2002)

•Genomic (DNA)
 •Transcription (RNA)
 •Proteinomic
 •Epigenomic

➤Femtometric

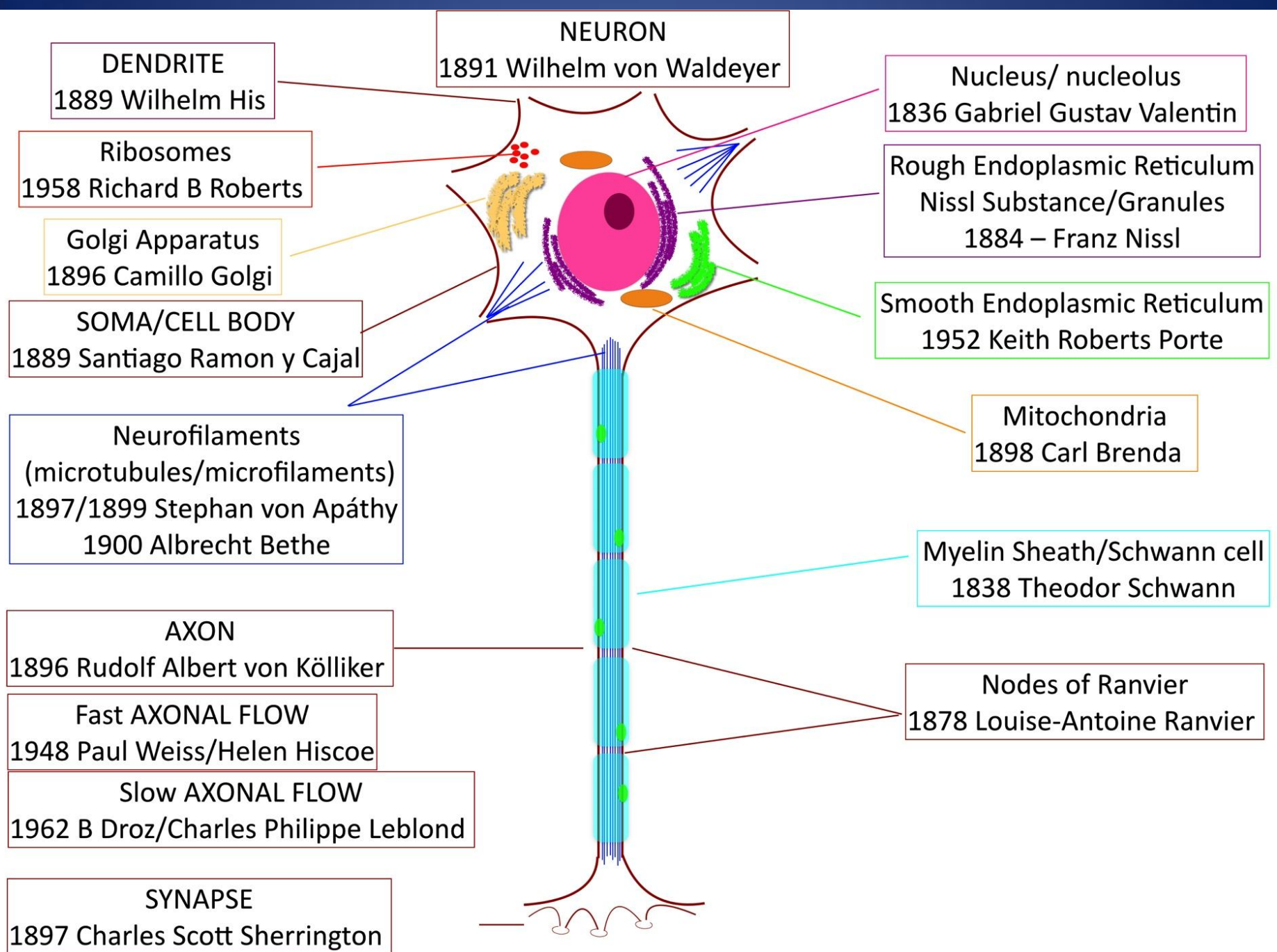




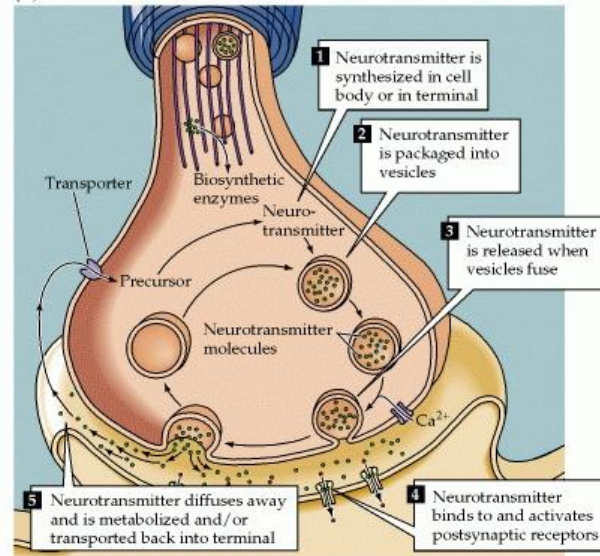


Glutamate Receptor
Glu - A2

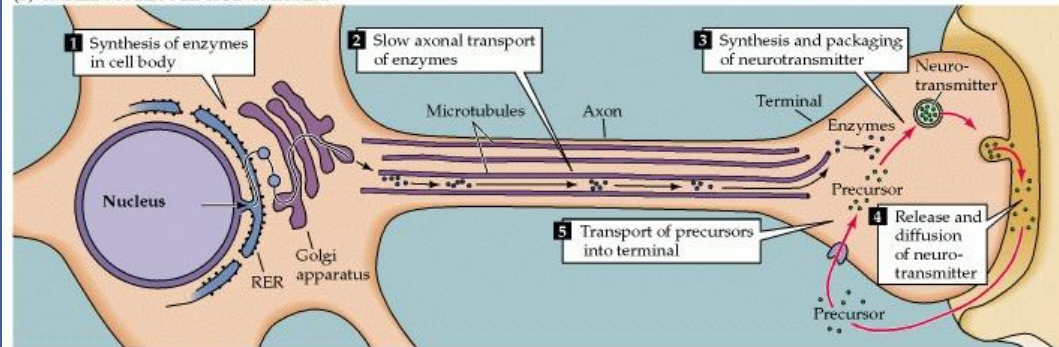
Nature, 8624, 2009



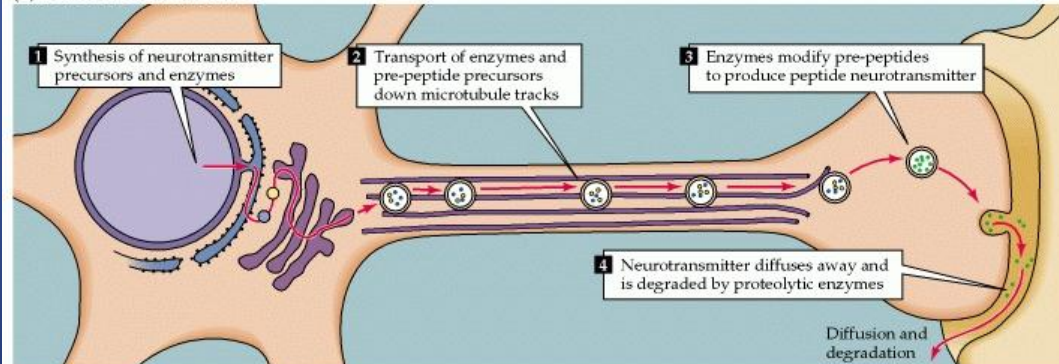
(A) LIFE CYCLE OF NEUROTRANSMITTER



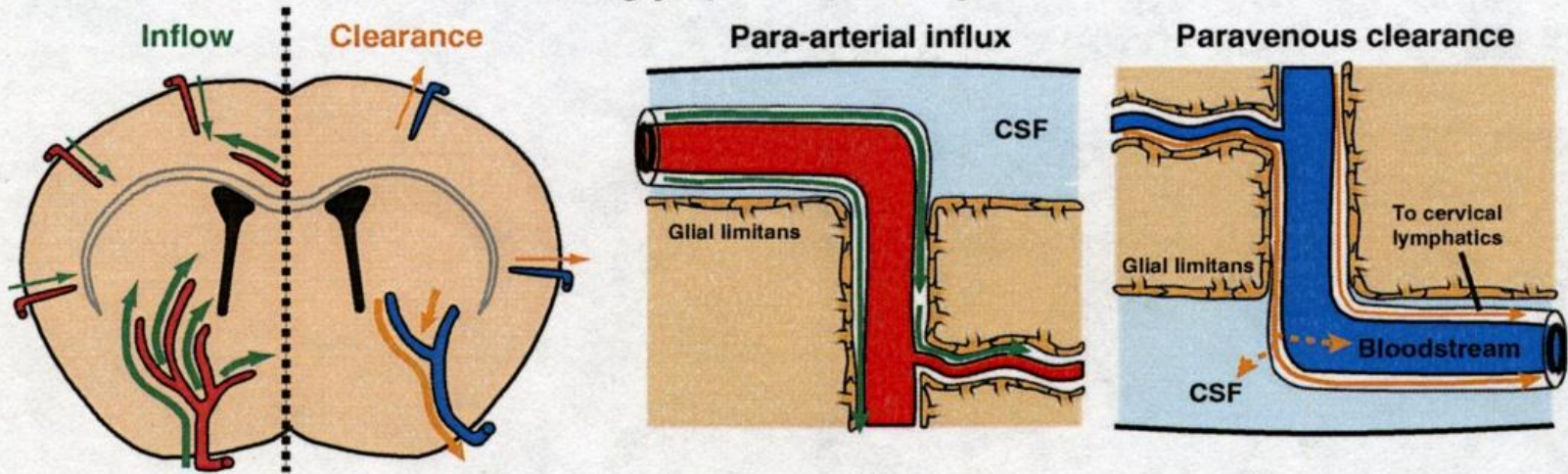
(B) SMALL-MOLECULE TRANSMITTERS



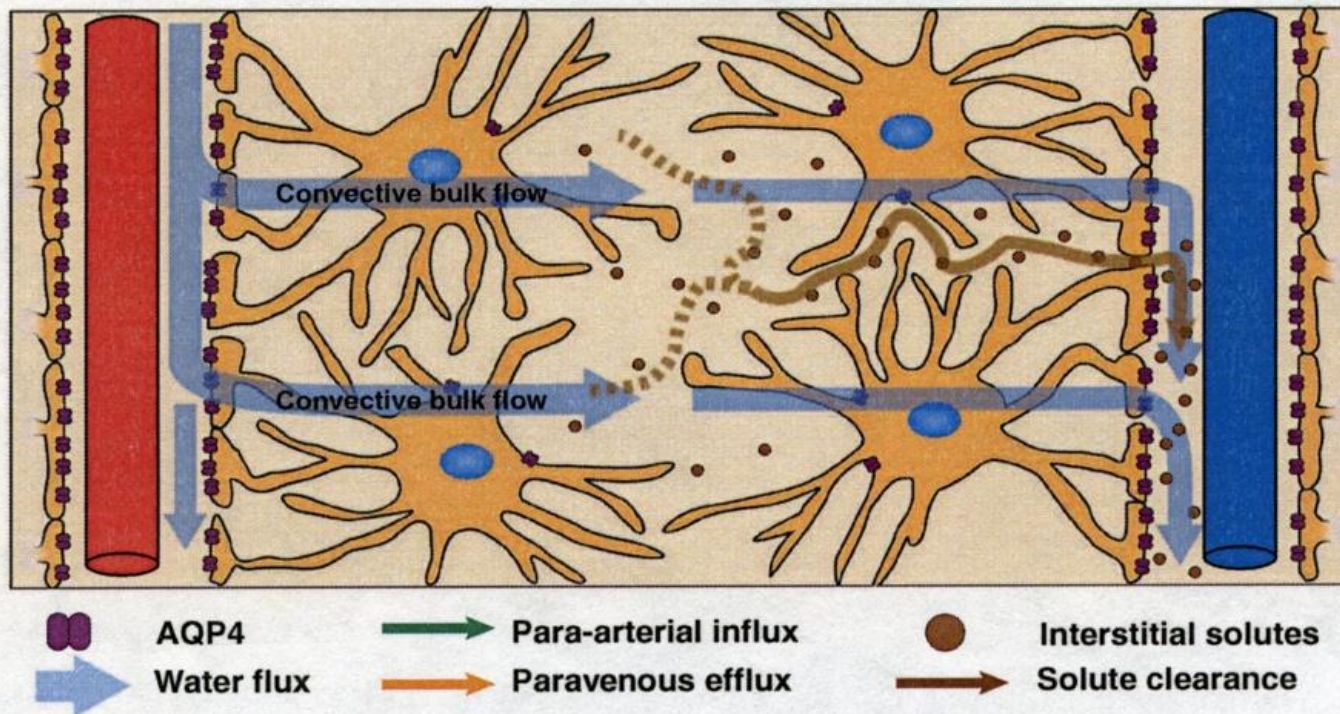
(C) PEPTIDE TRANSMITTERS



The glymphatic pathway



Interstitial fluid and solute clearance



Neurosurgical Emergencies

1 - Diseases of CNS

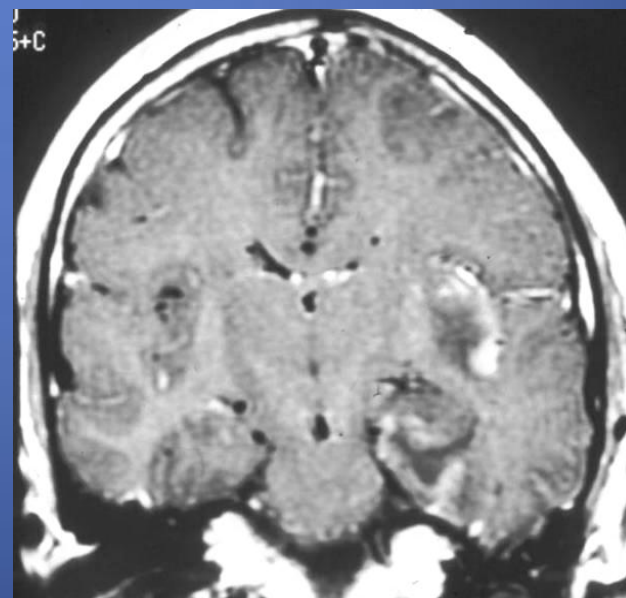
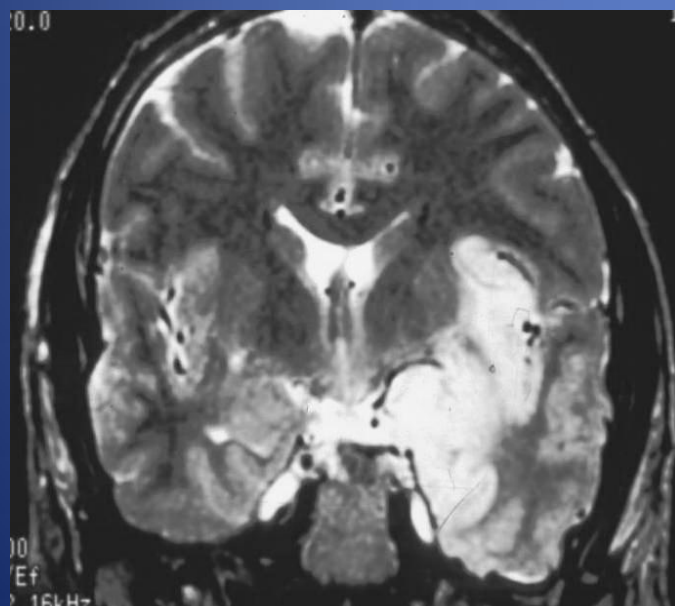
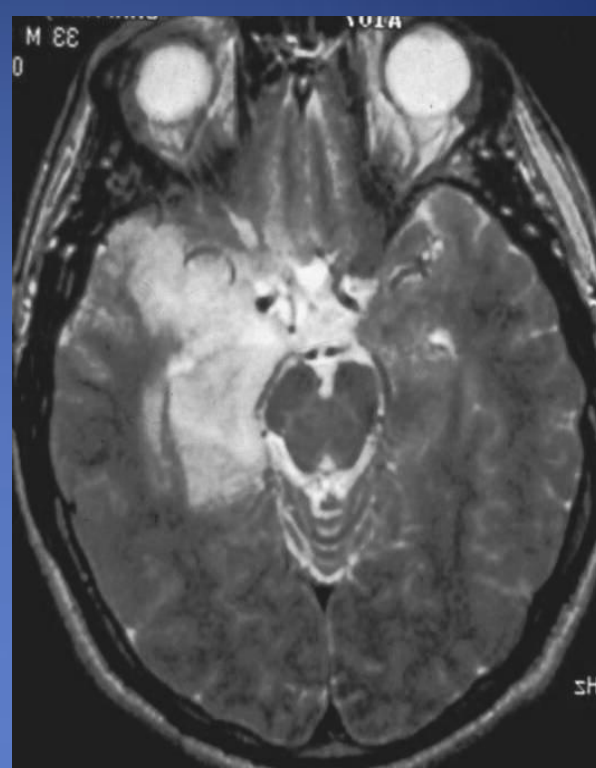
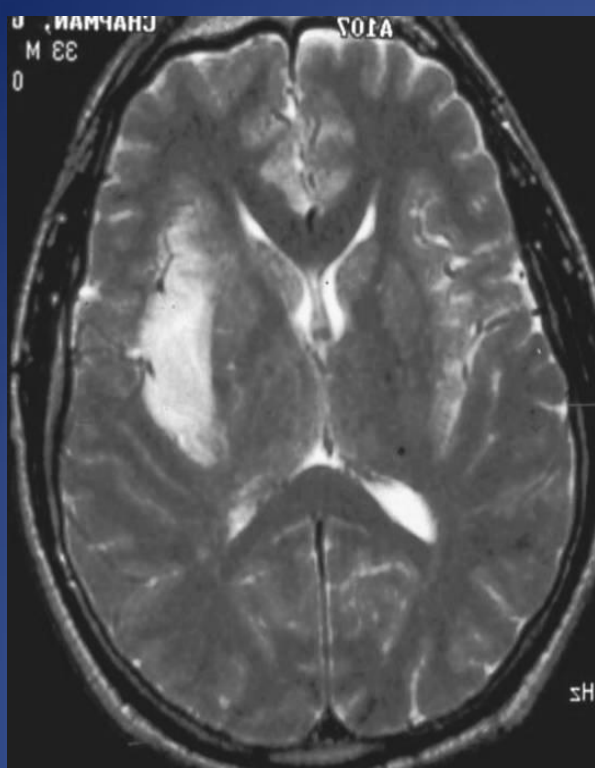
Vascular, Neoplastic, Infectious,
Degeneration, Hydrocephalous, Epilepsy

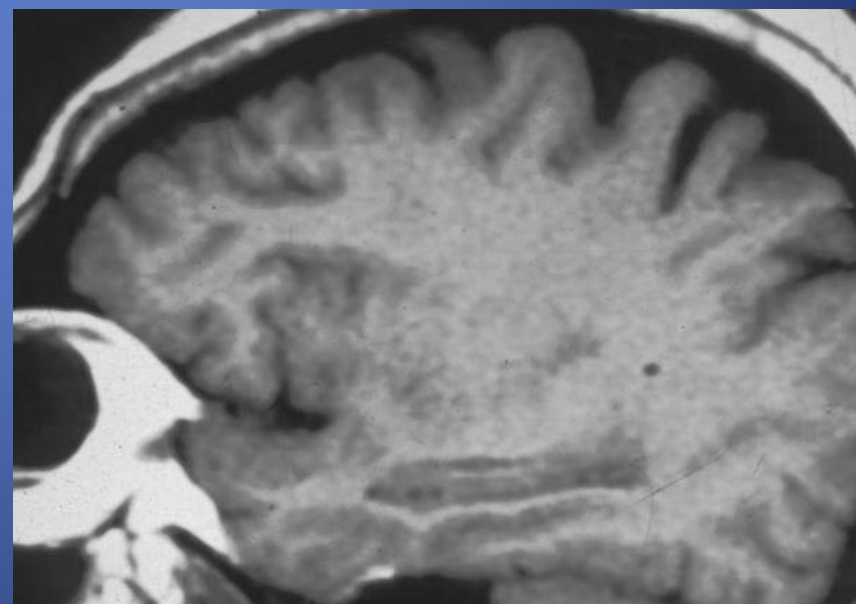
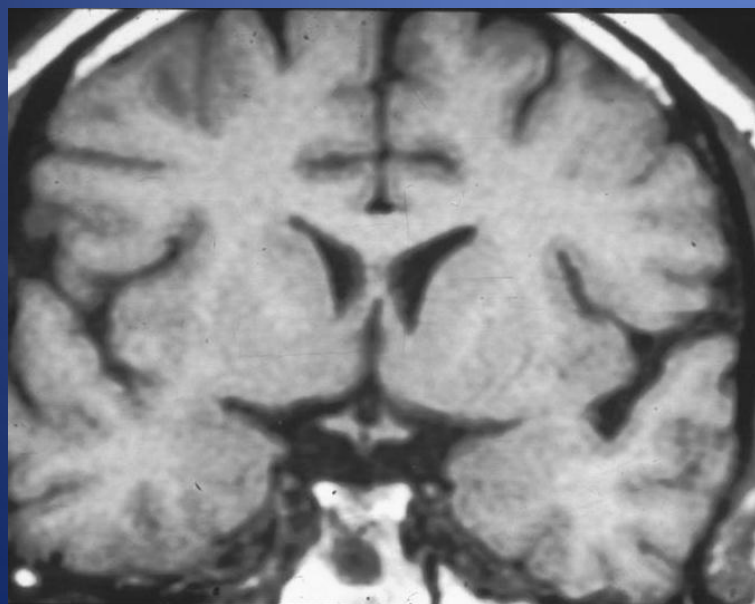
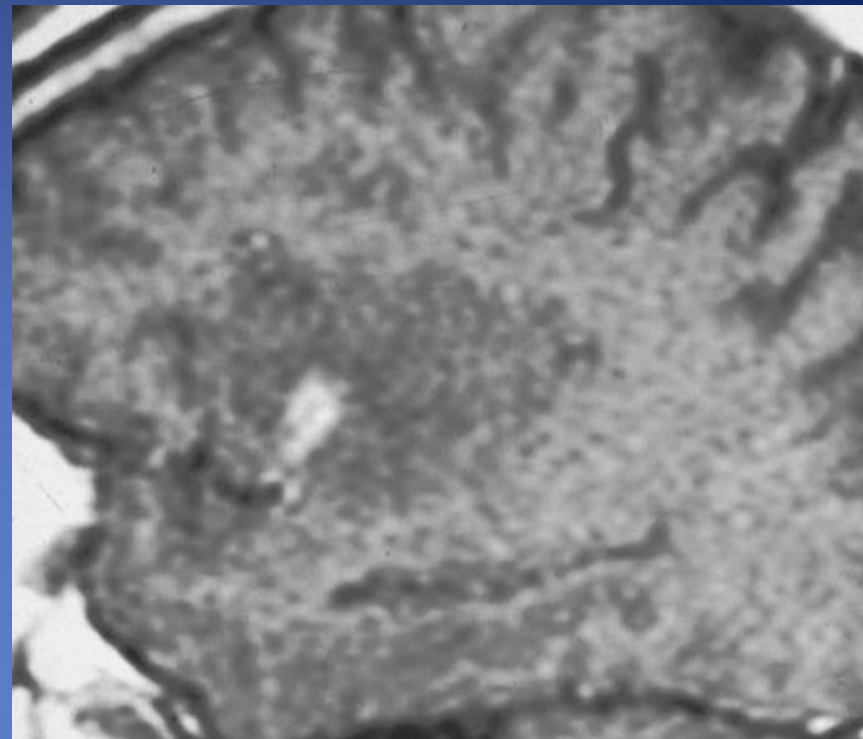
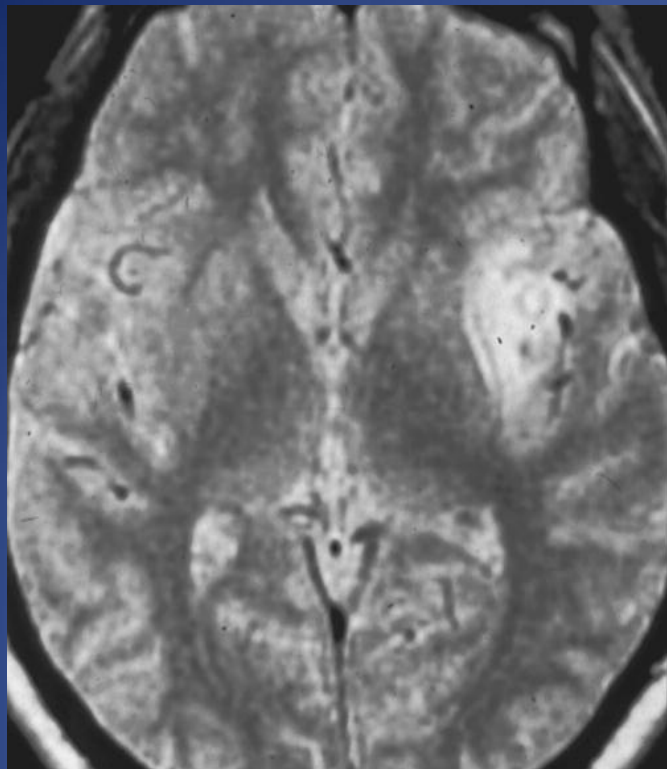
2 - Diseases of Bodily Organs

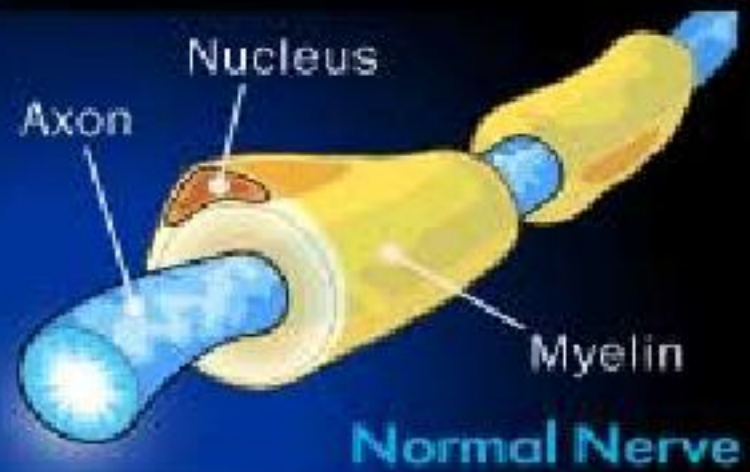
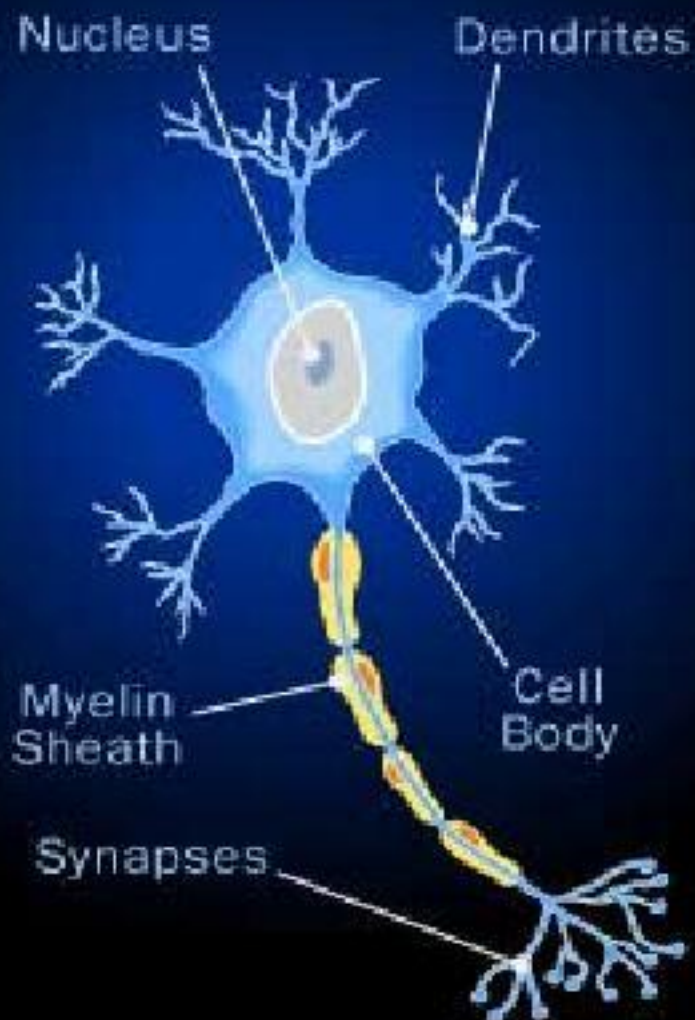
Cardiovascular, Blood, Respiratory,
Digestion, Urinary, Endocrine,

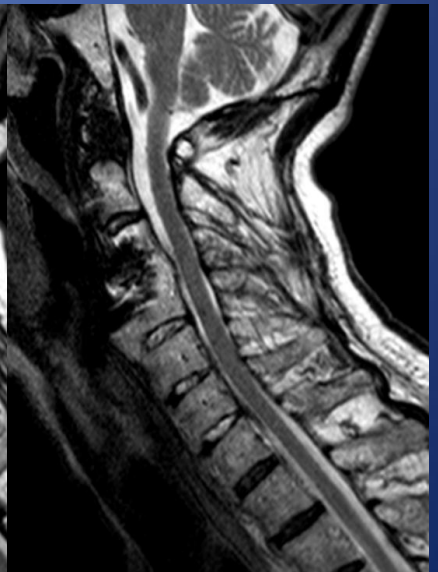
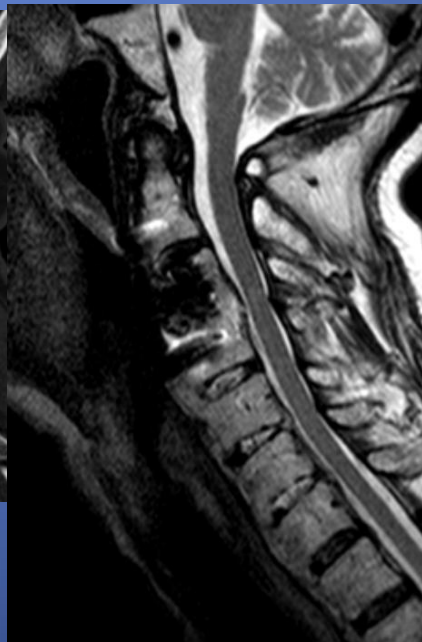
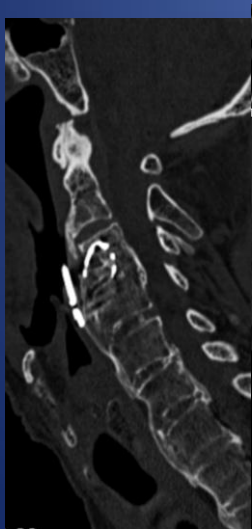
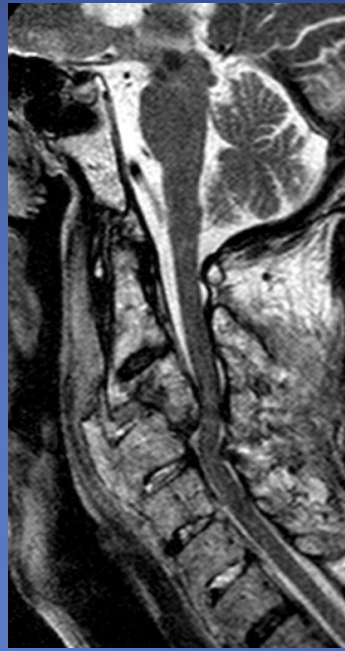
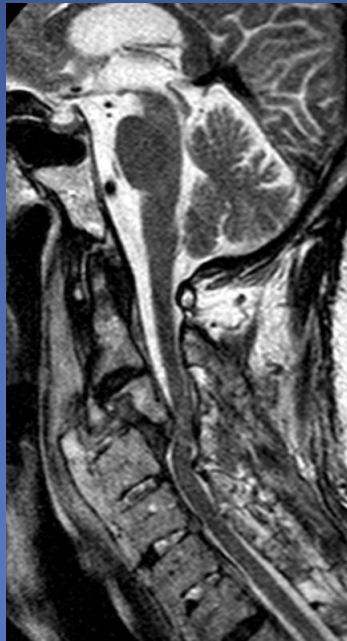
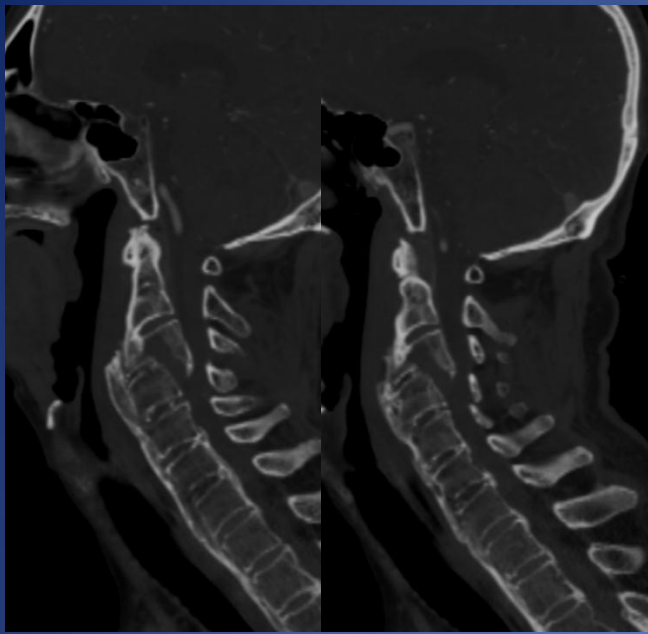
3 - Traumas

- a. Nature
- b. Social
- c. Individual

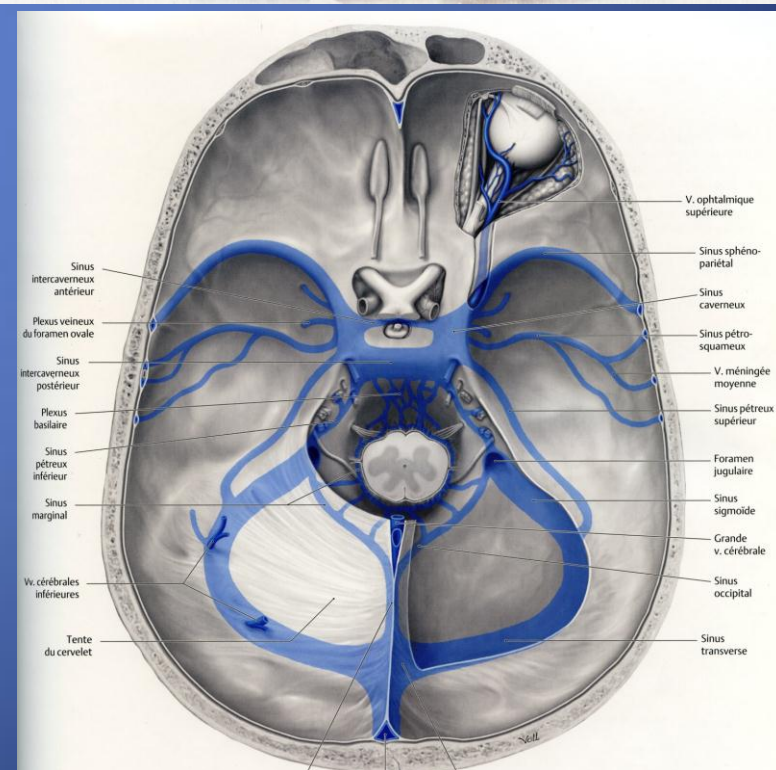
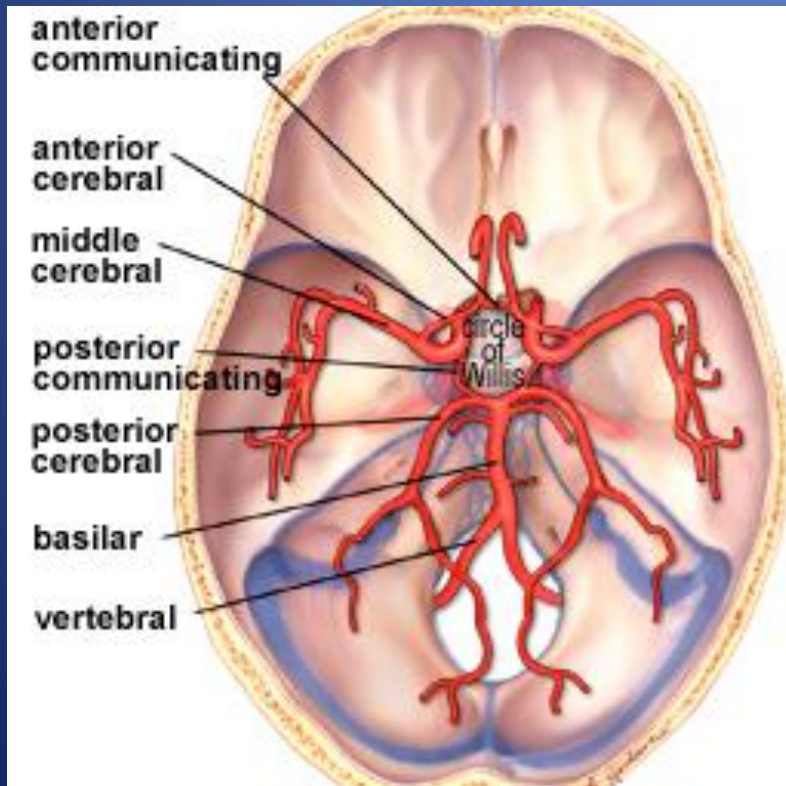
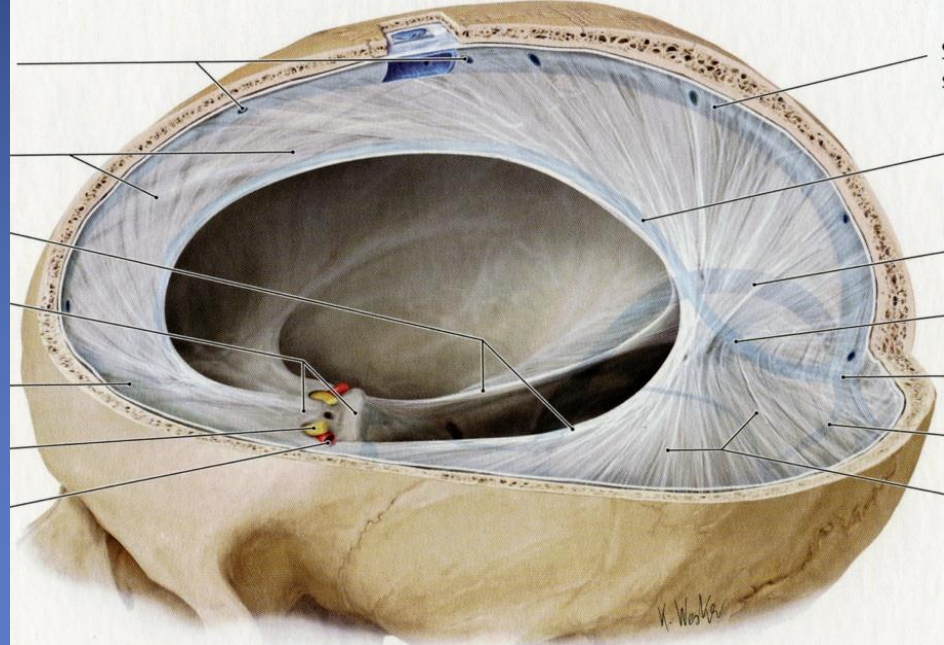
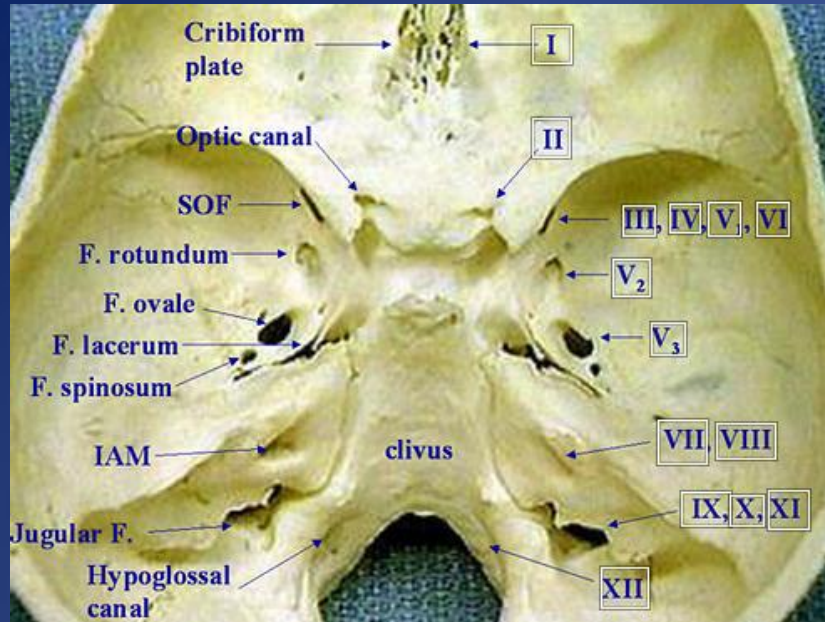








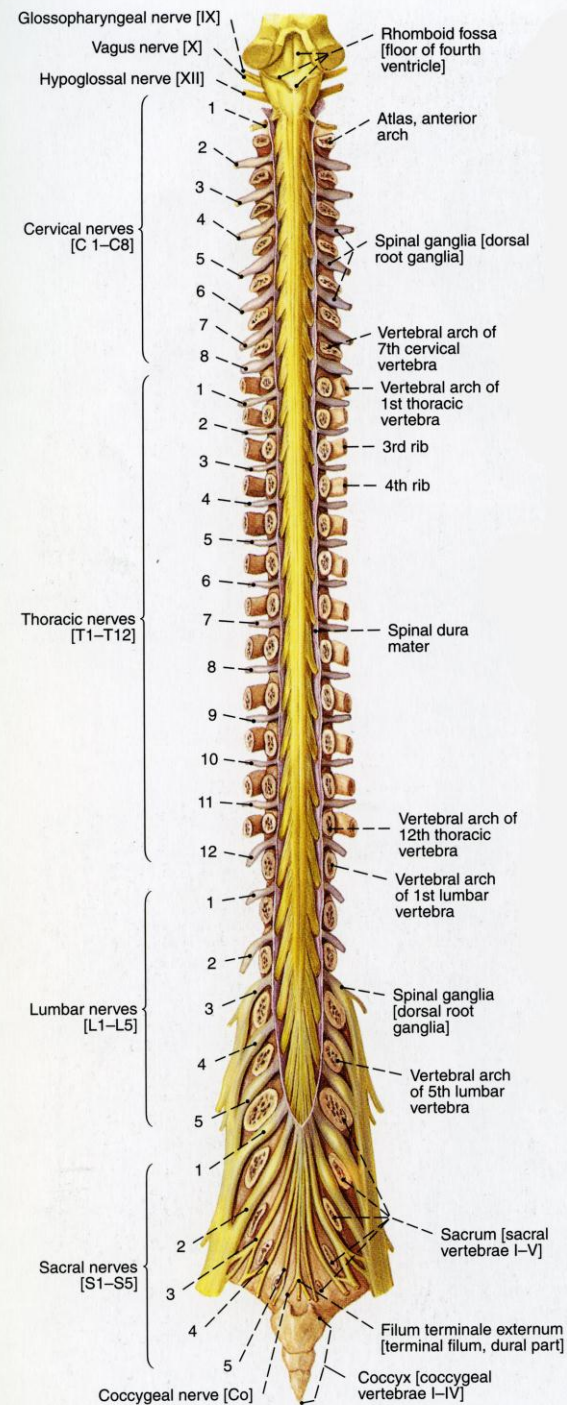
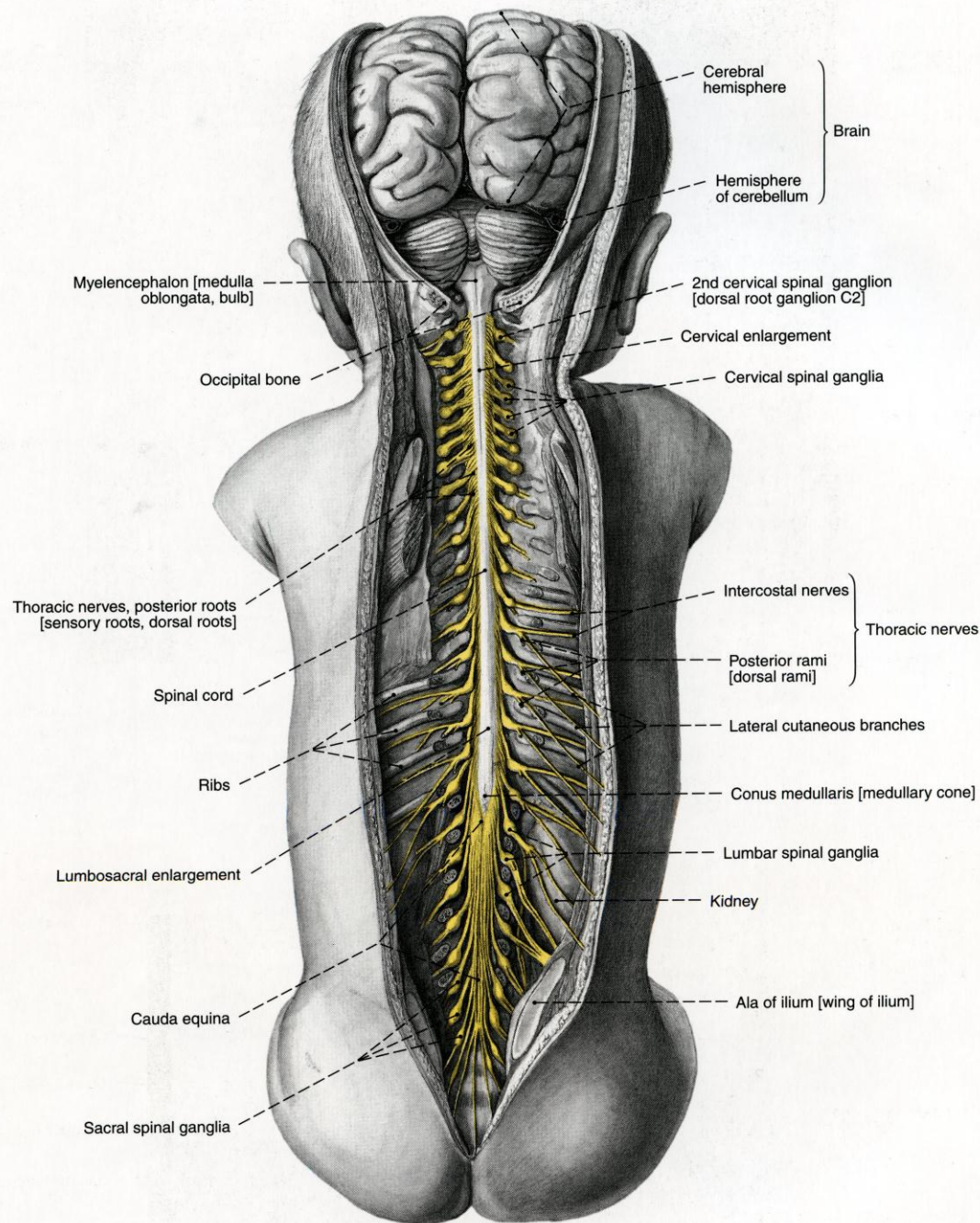


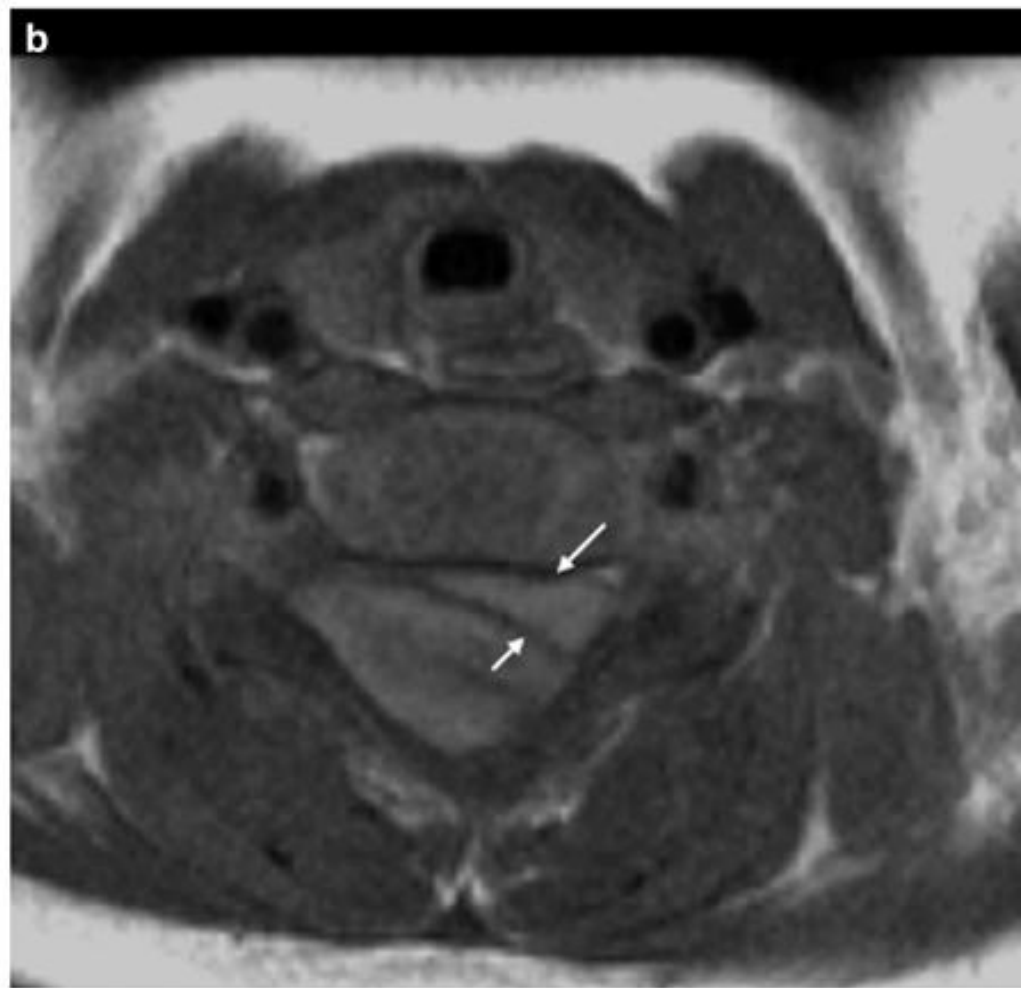


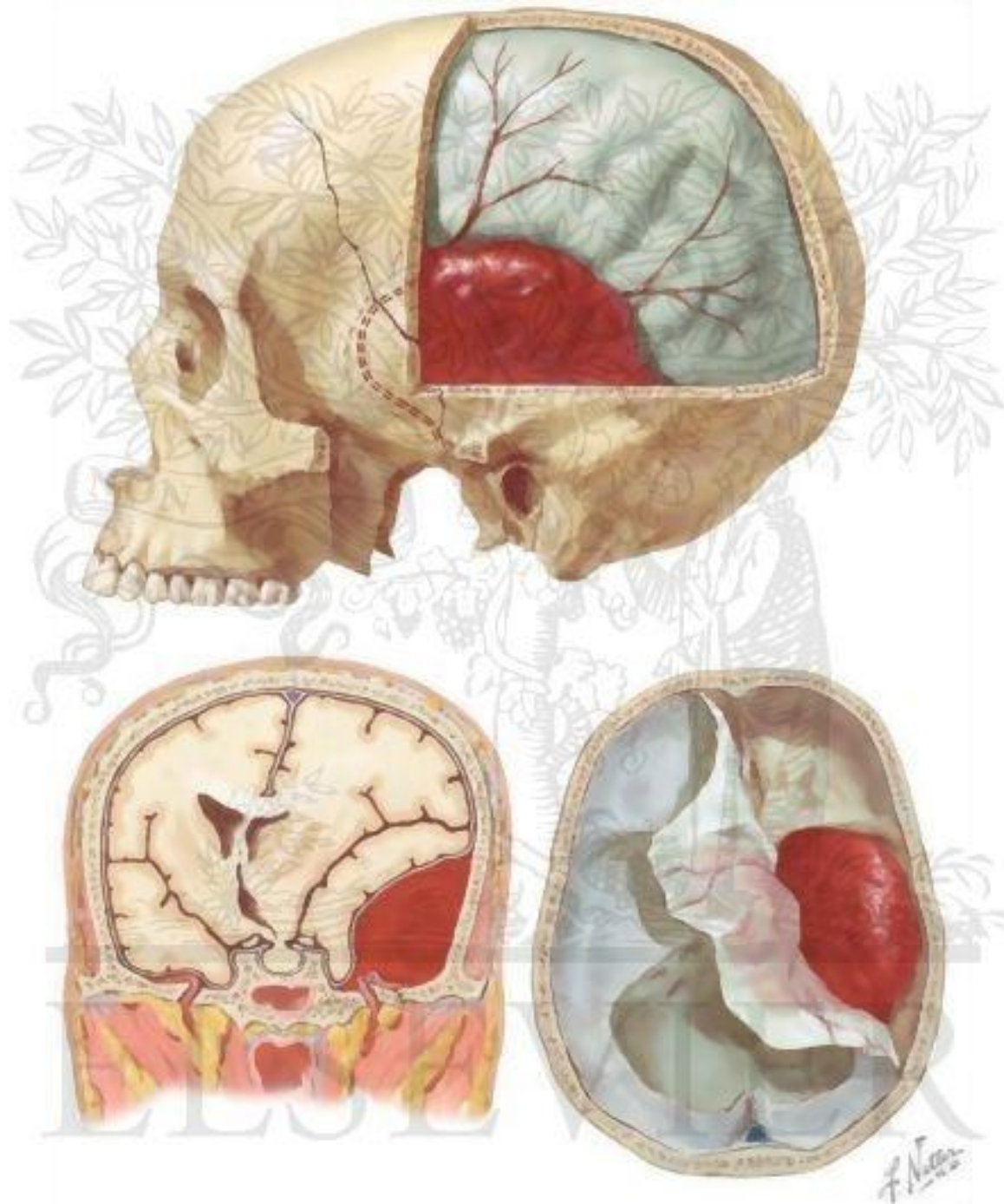


cialis u.
usticus

vagus

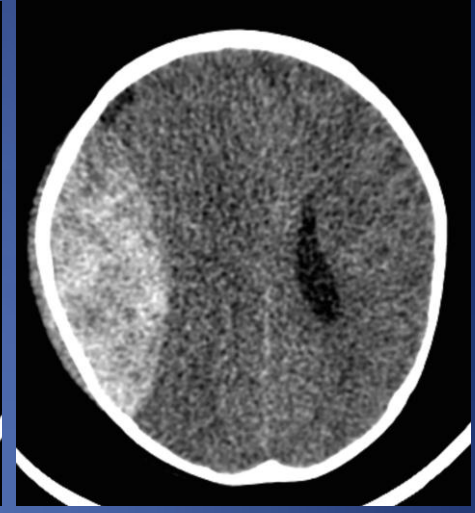
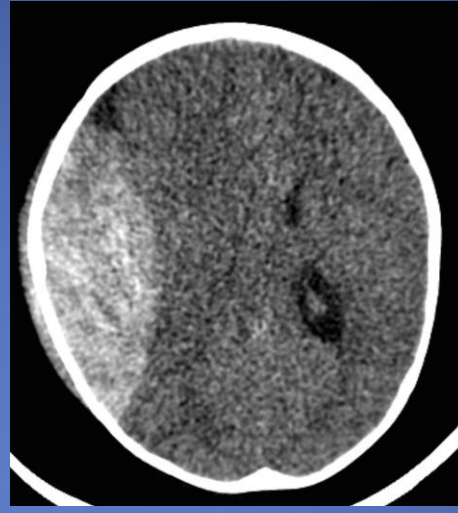
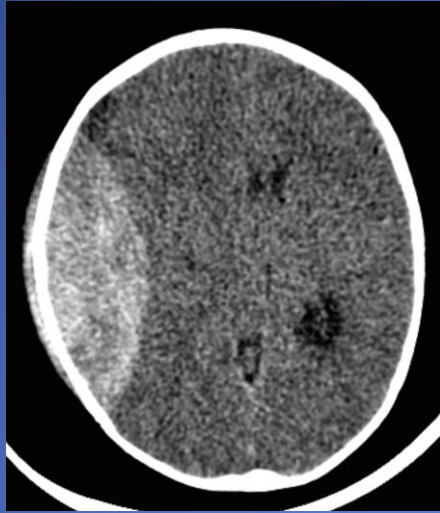




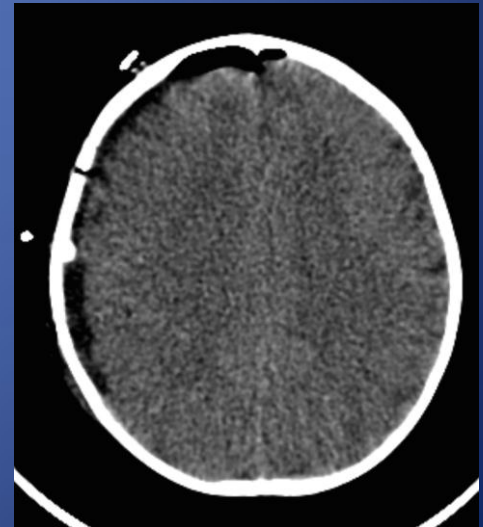
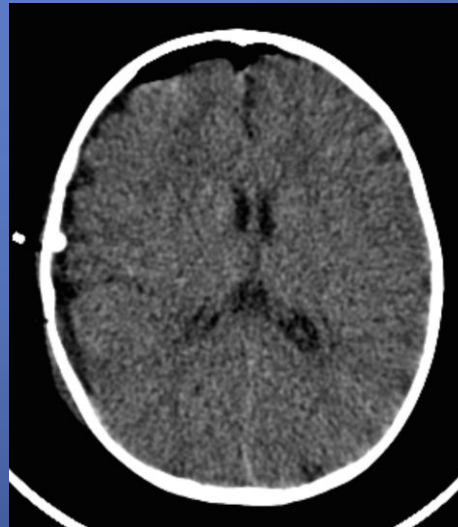


12 aylık kız bebek, travmatik epidural hematom

Preop

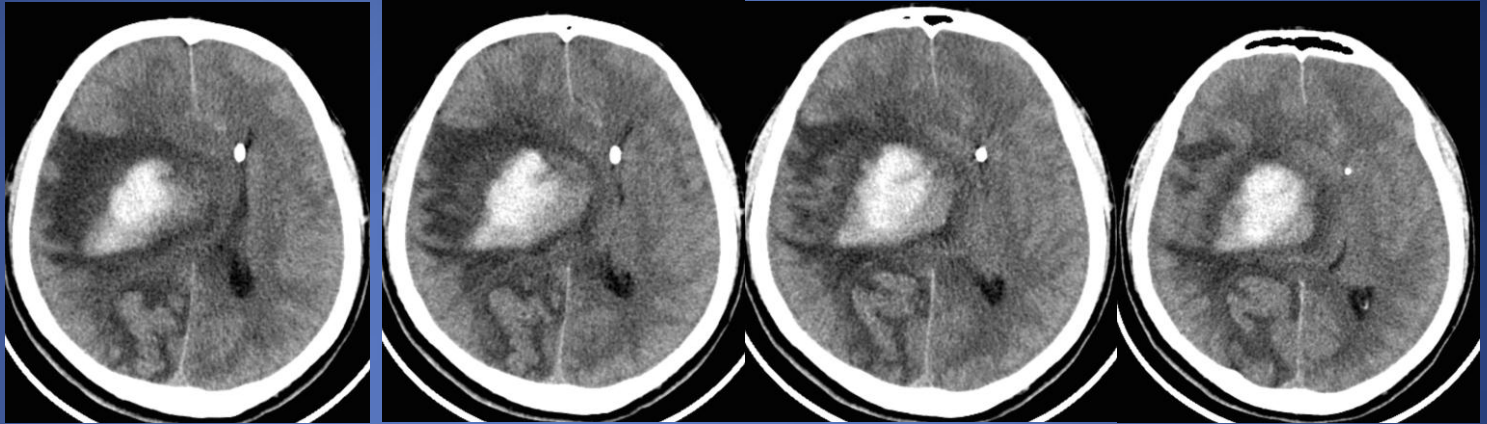


Postop

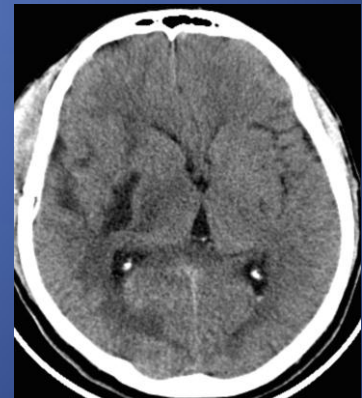


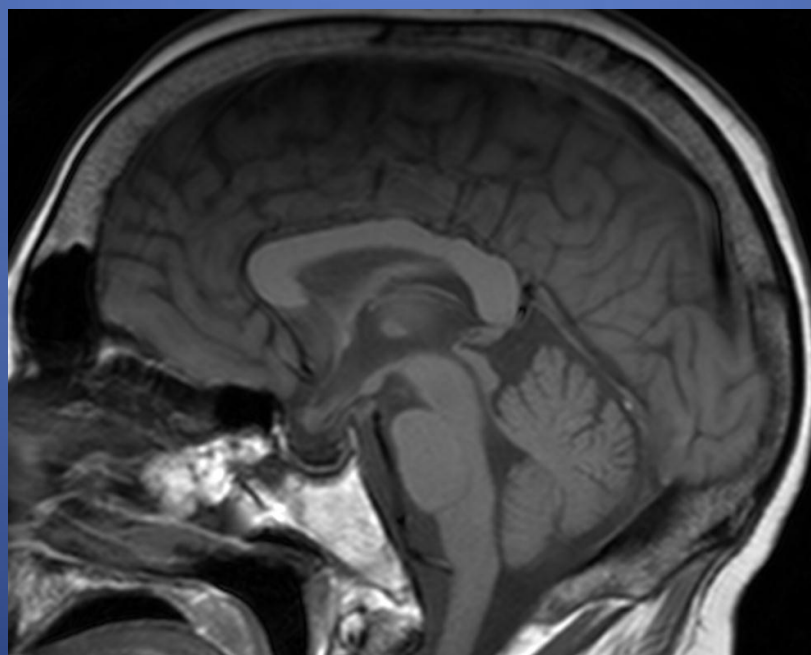
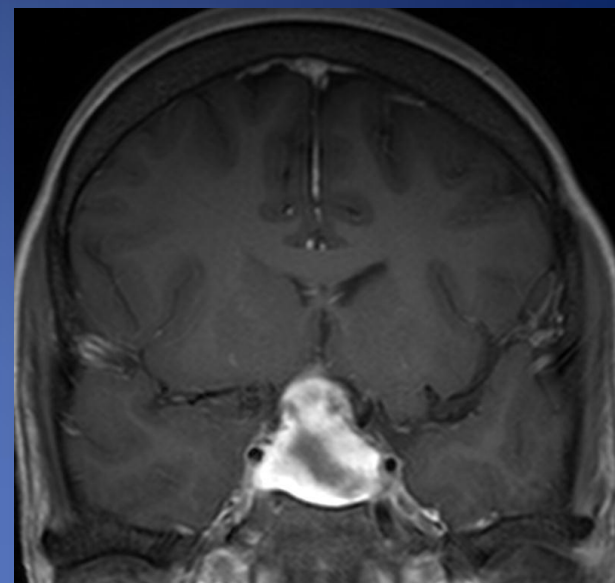
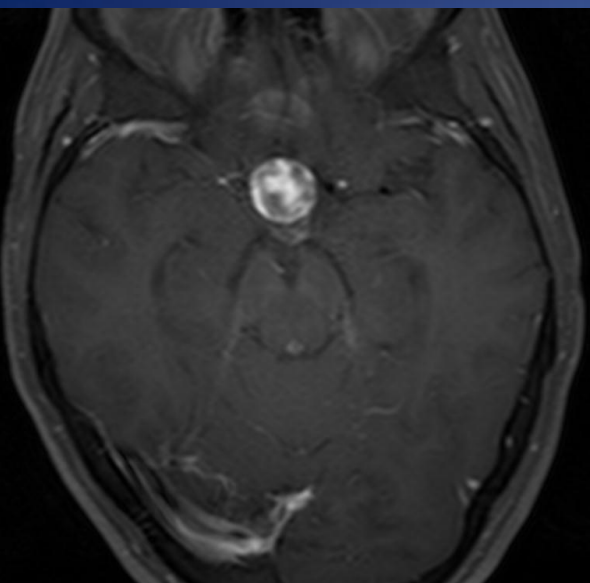
40 yasinda erkek, spontan intraserebral kanama

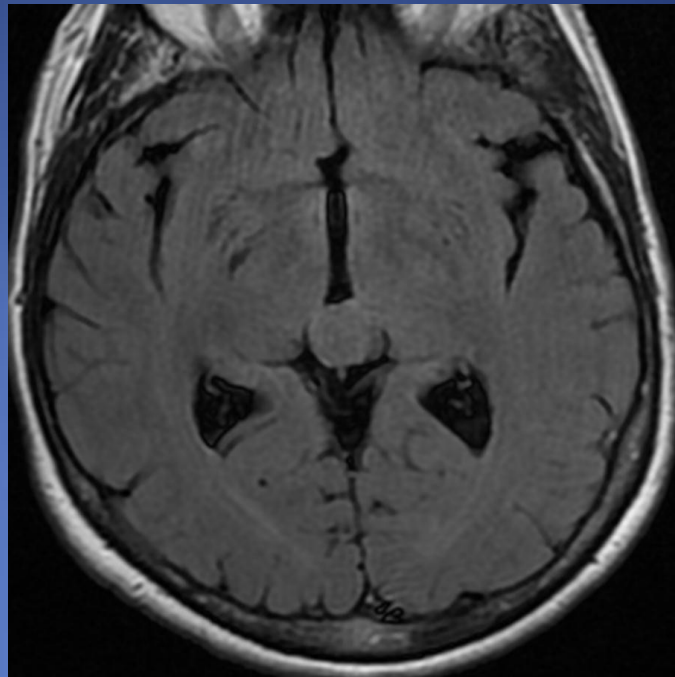
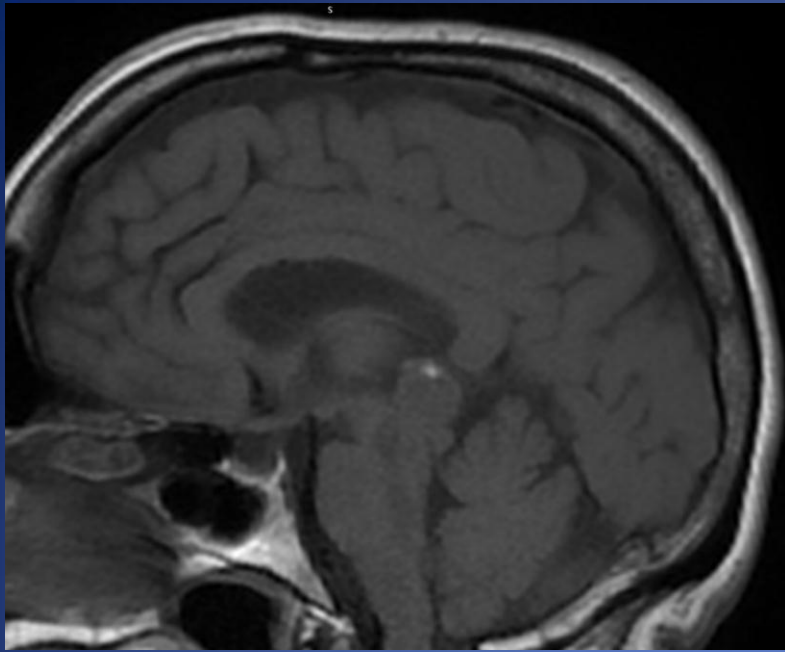
Preop



Postop





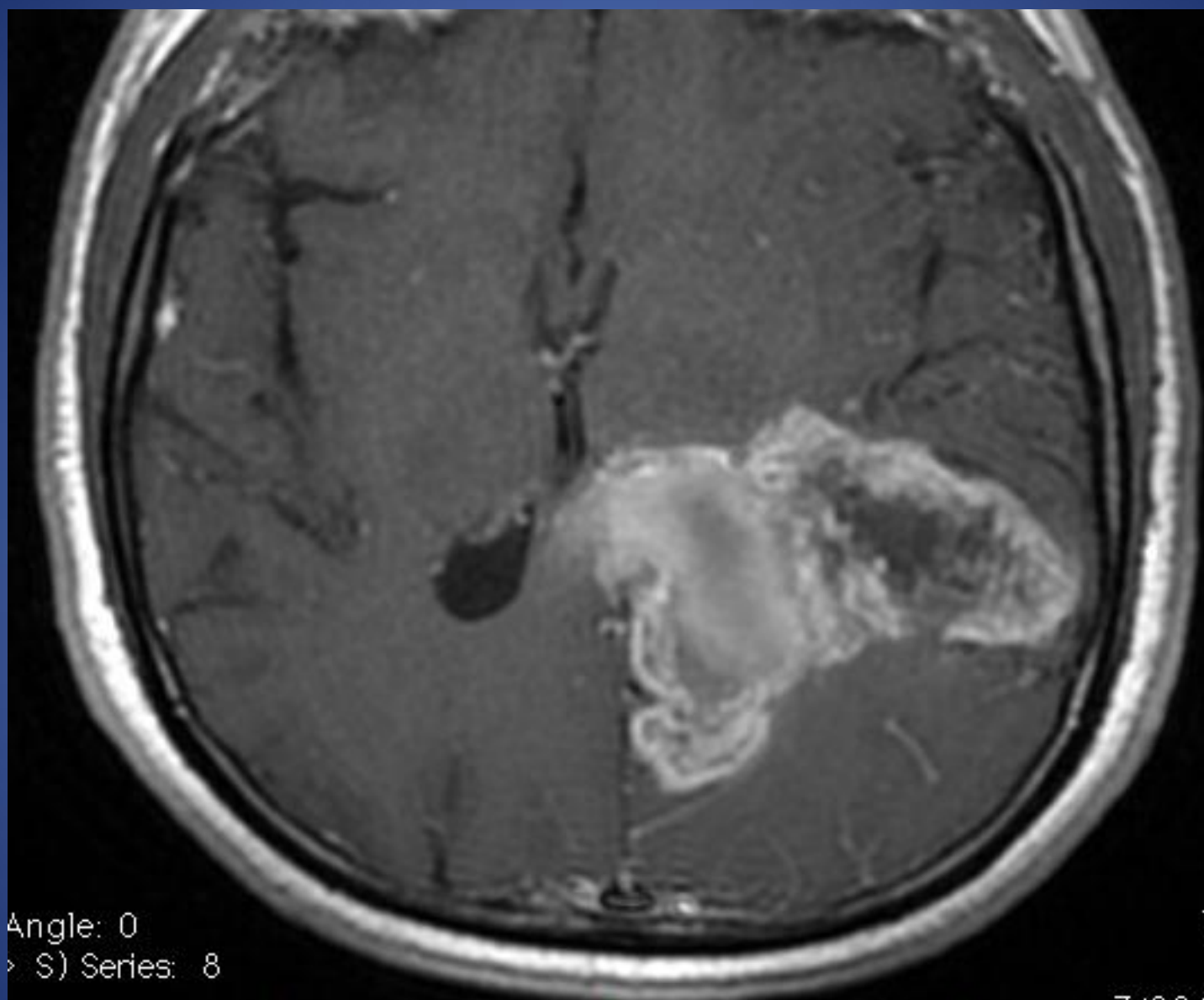


60 Year-Male

19.11.2014 MR

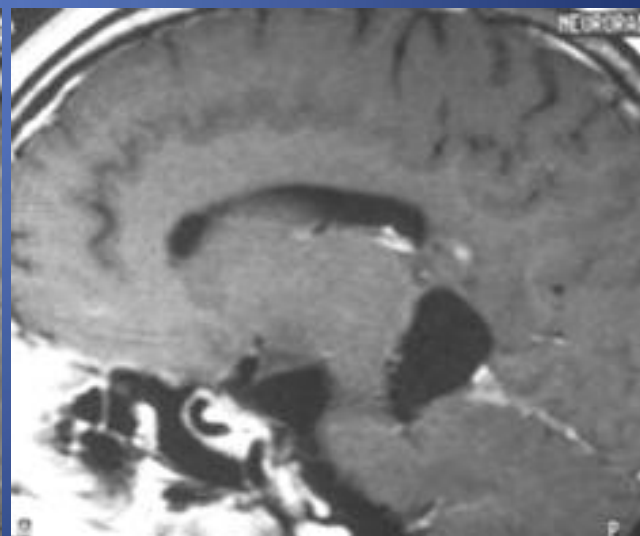
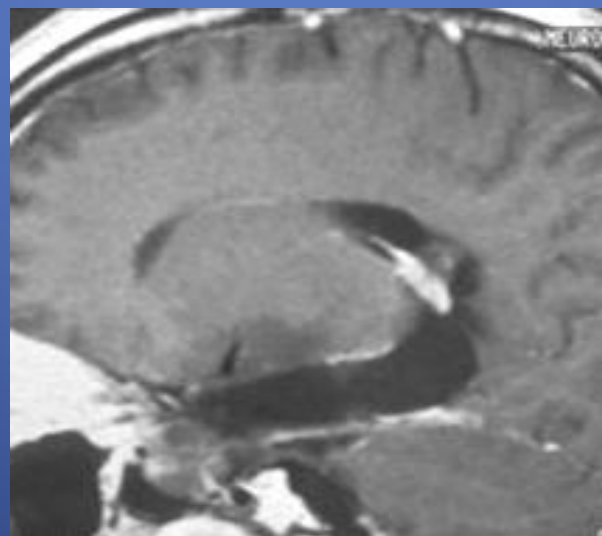
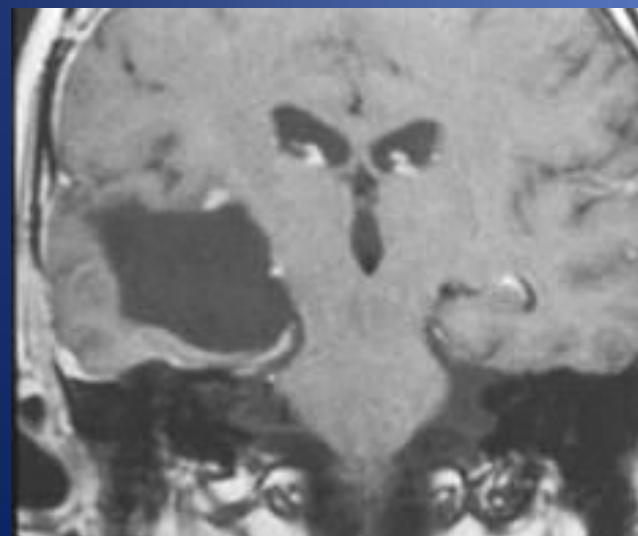
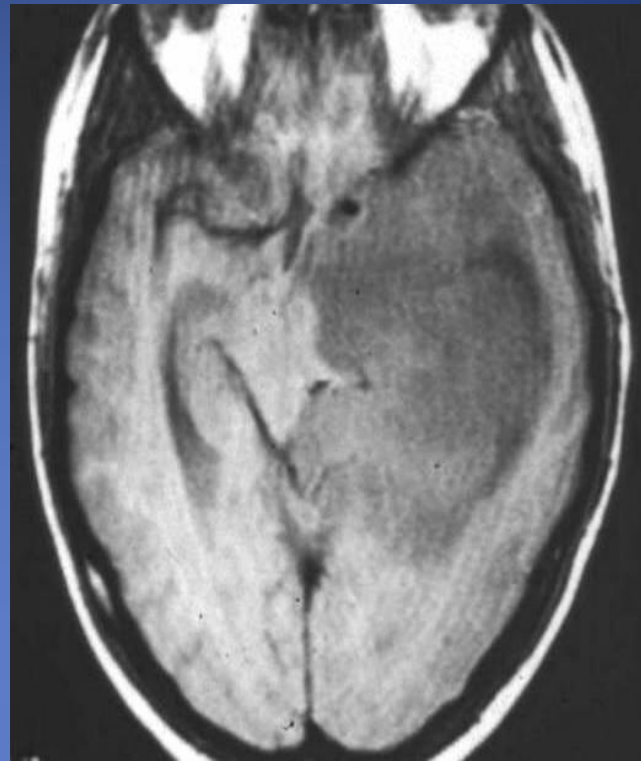
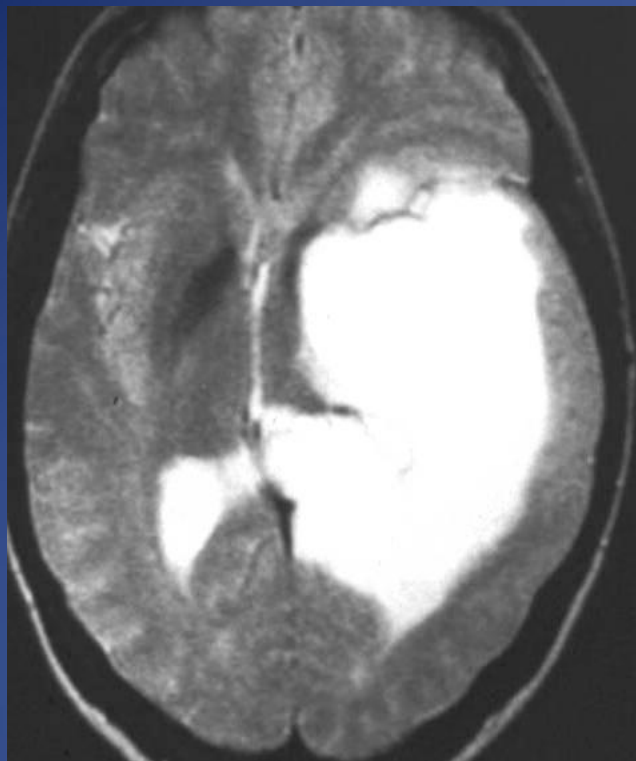


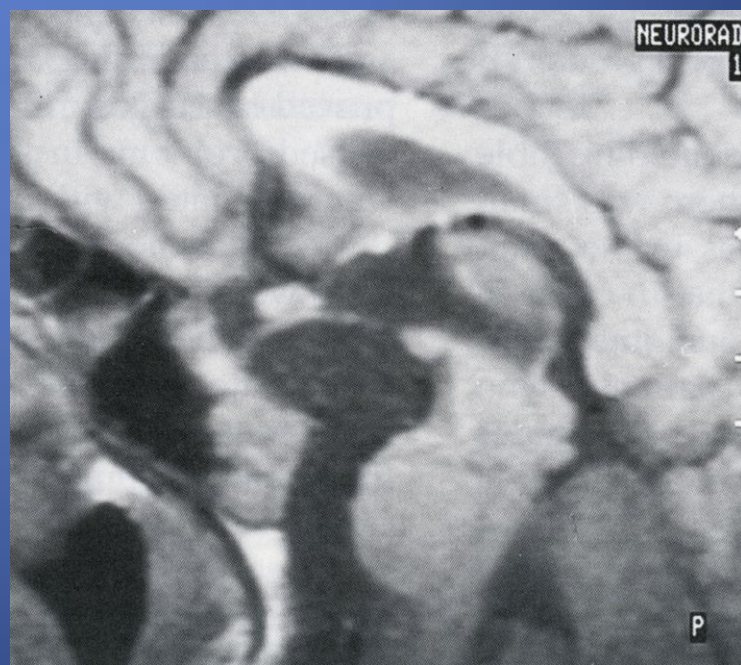
15.03.2015 CT



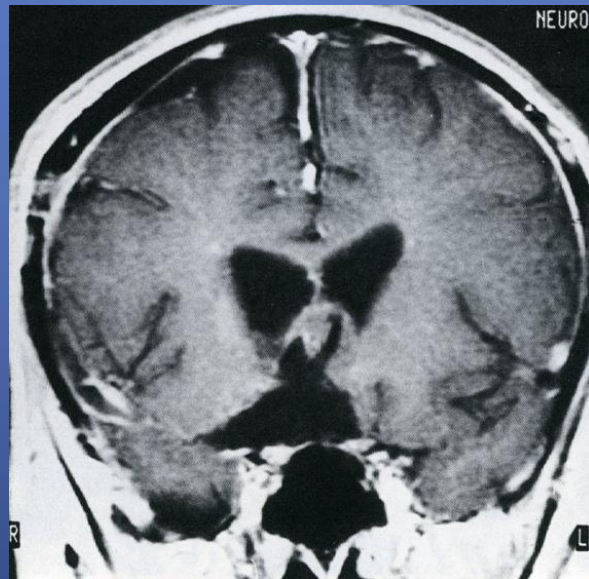
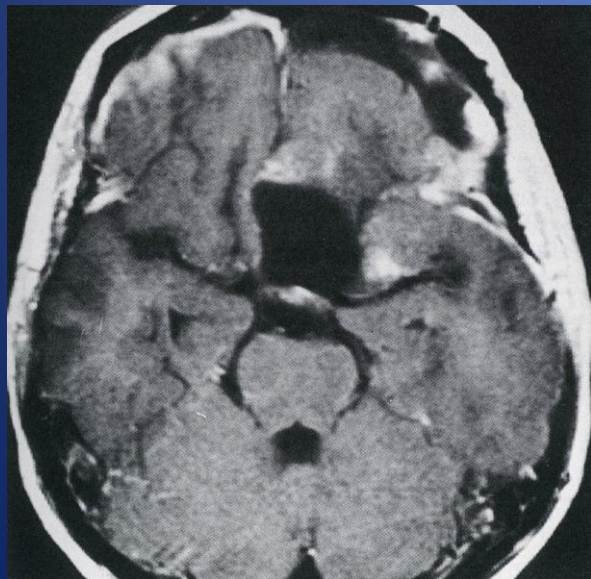
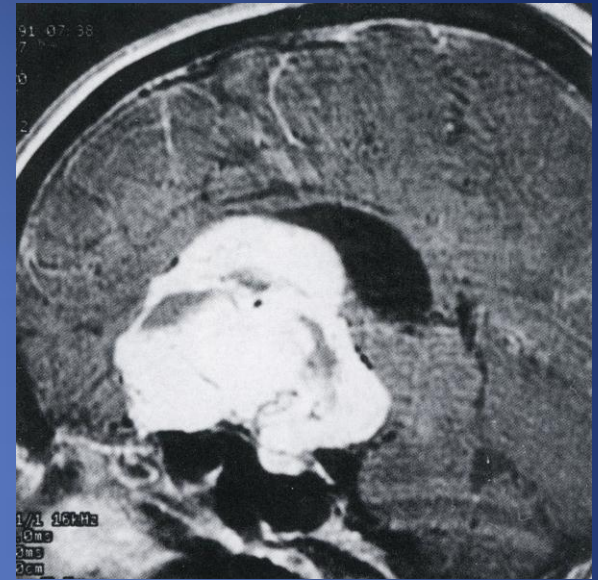
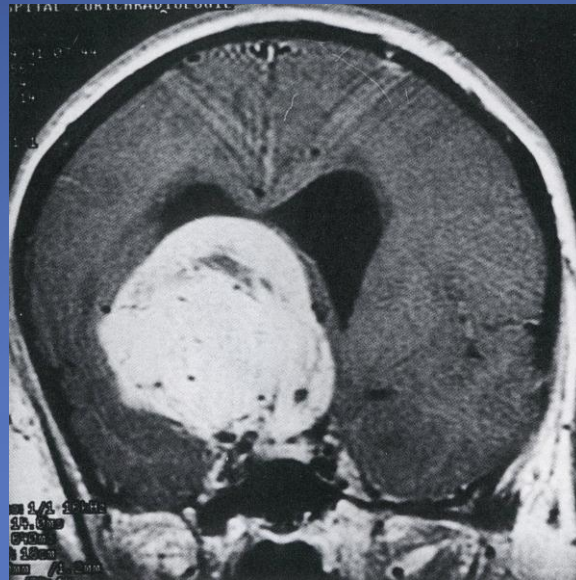
Angle: 0
> S) Series: 8

7/20/20

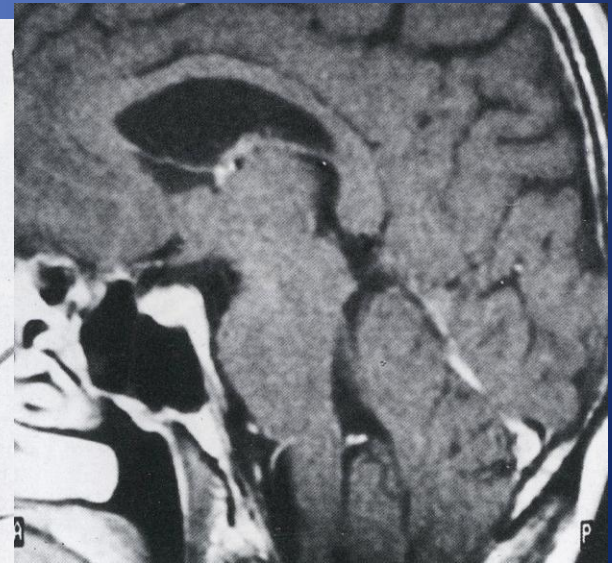
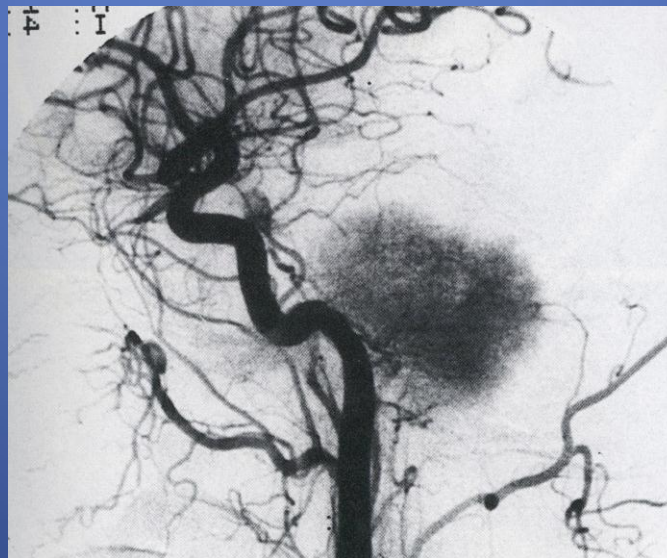
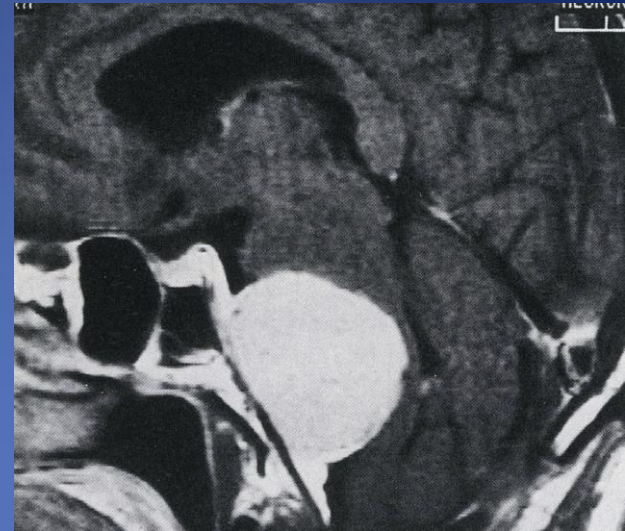
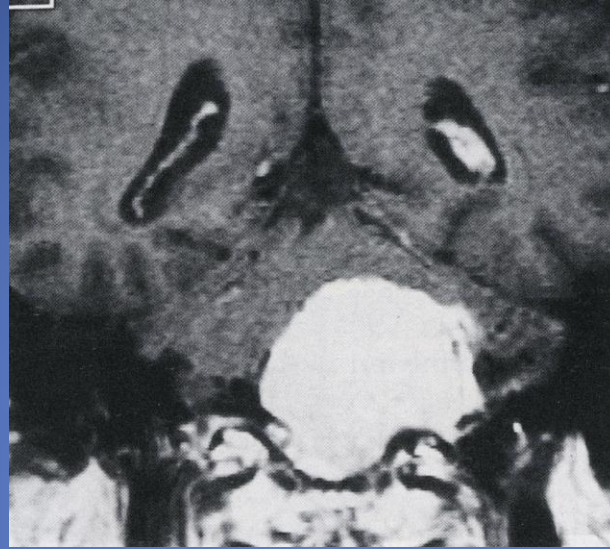
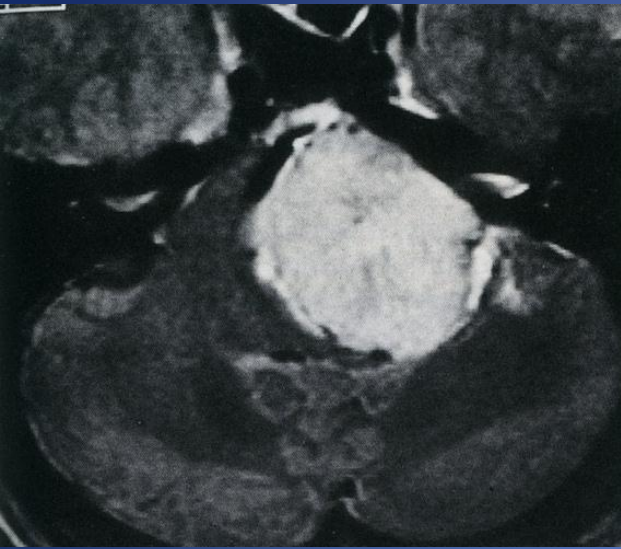




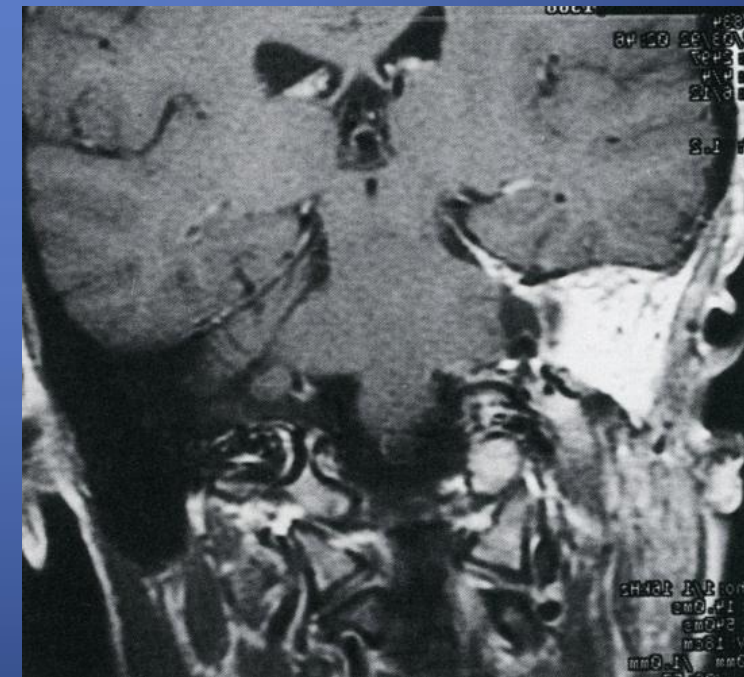
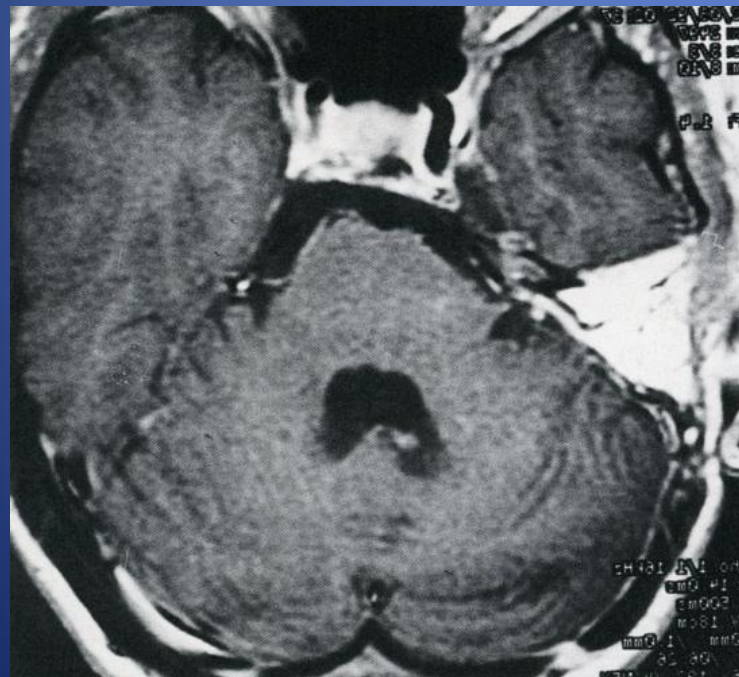
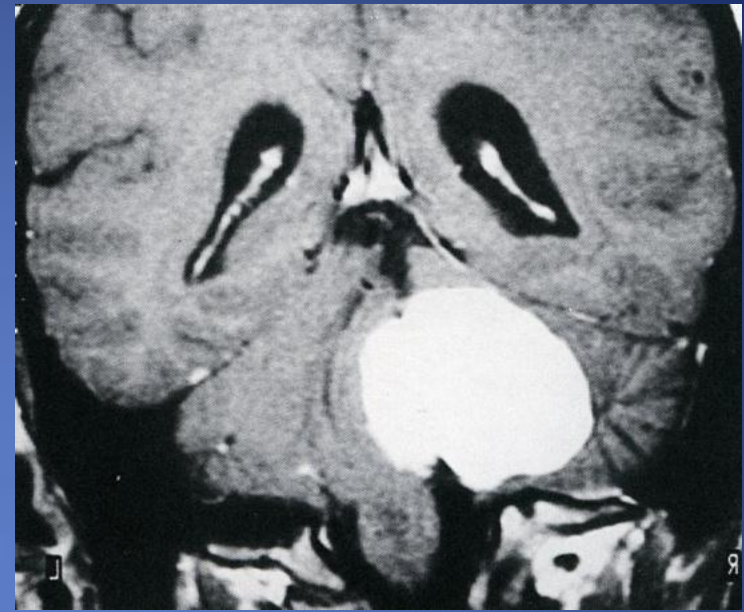
Tuberculum Sellae Meningioma



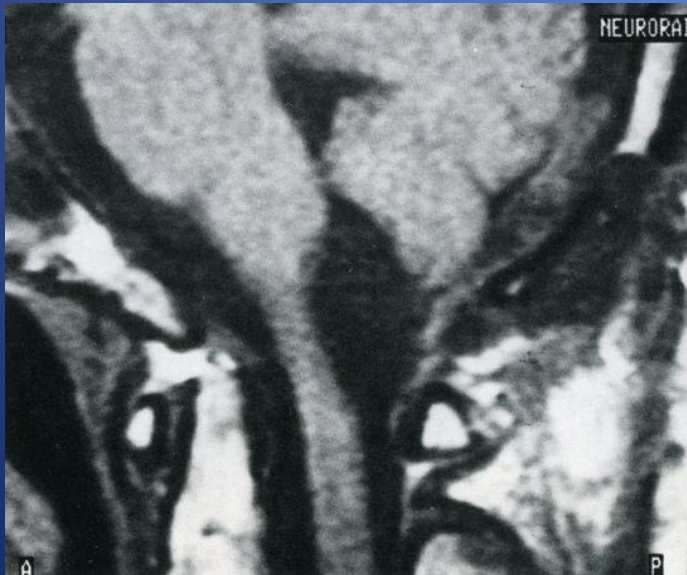
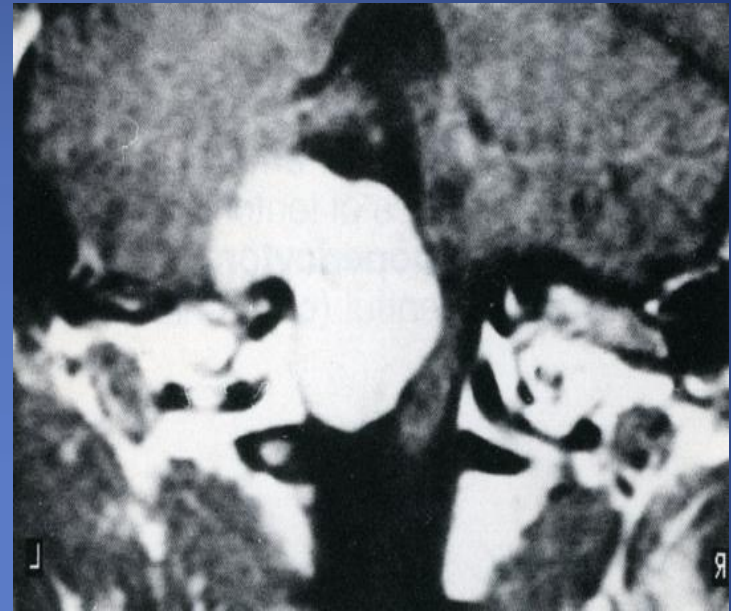
Petroclival Meningioma



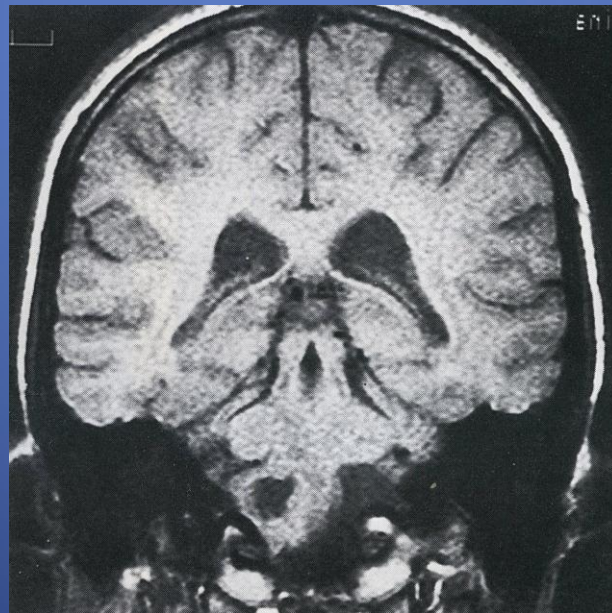
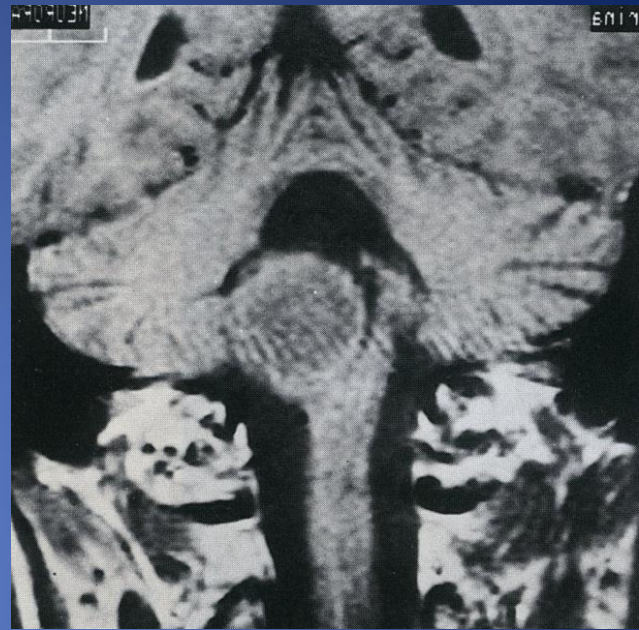
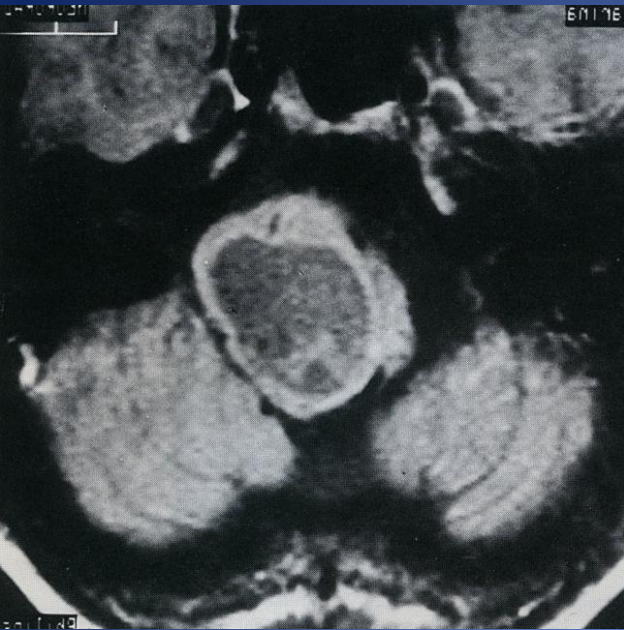
Acoustic Neuroma



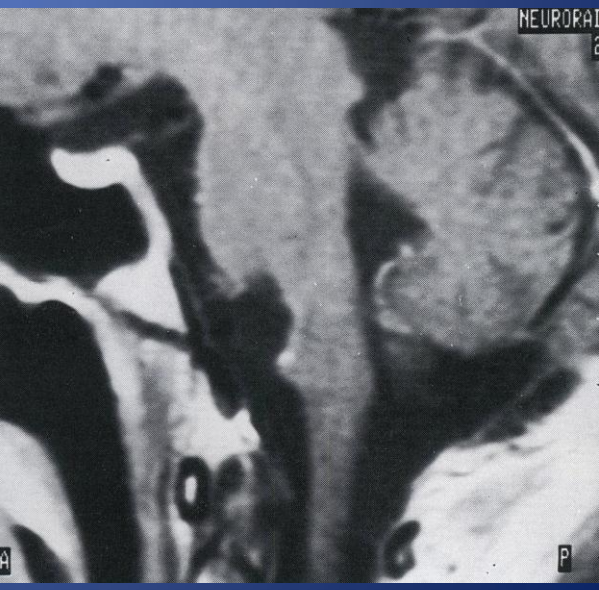
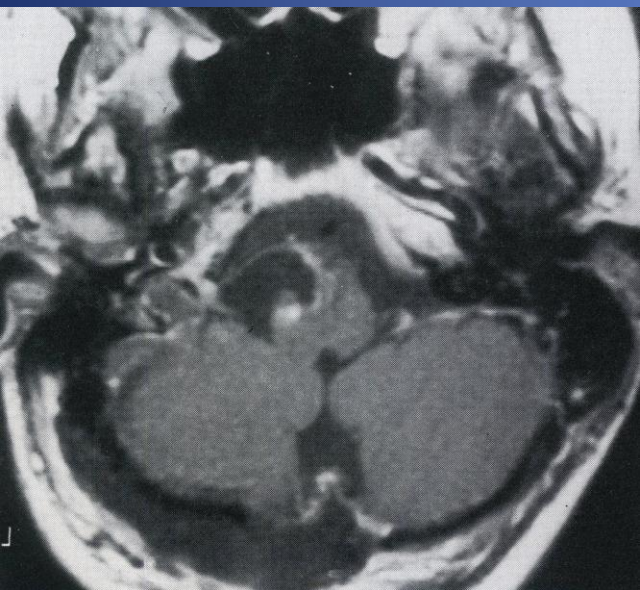
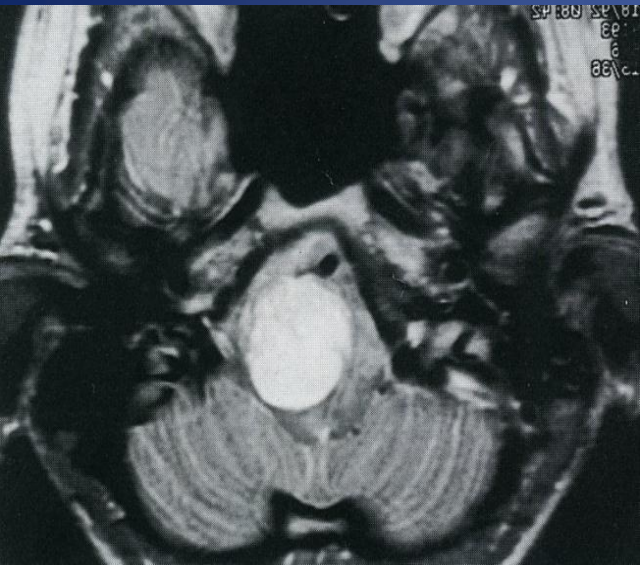
Dorsolateral Meningioma-Occipital Foramen

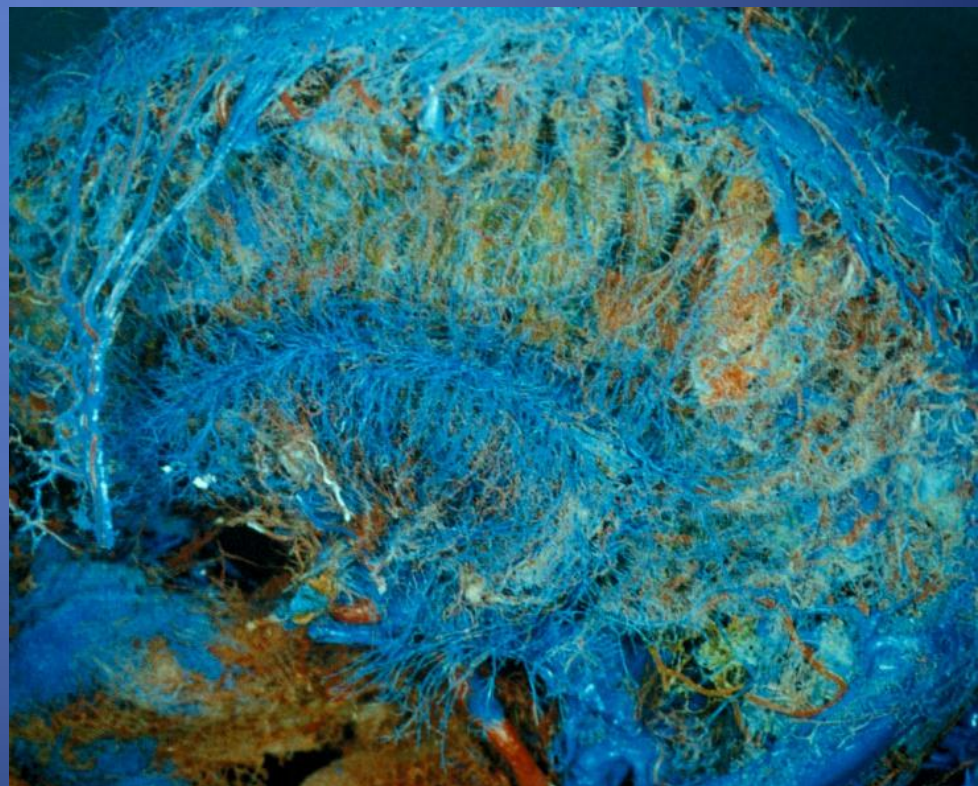


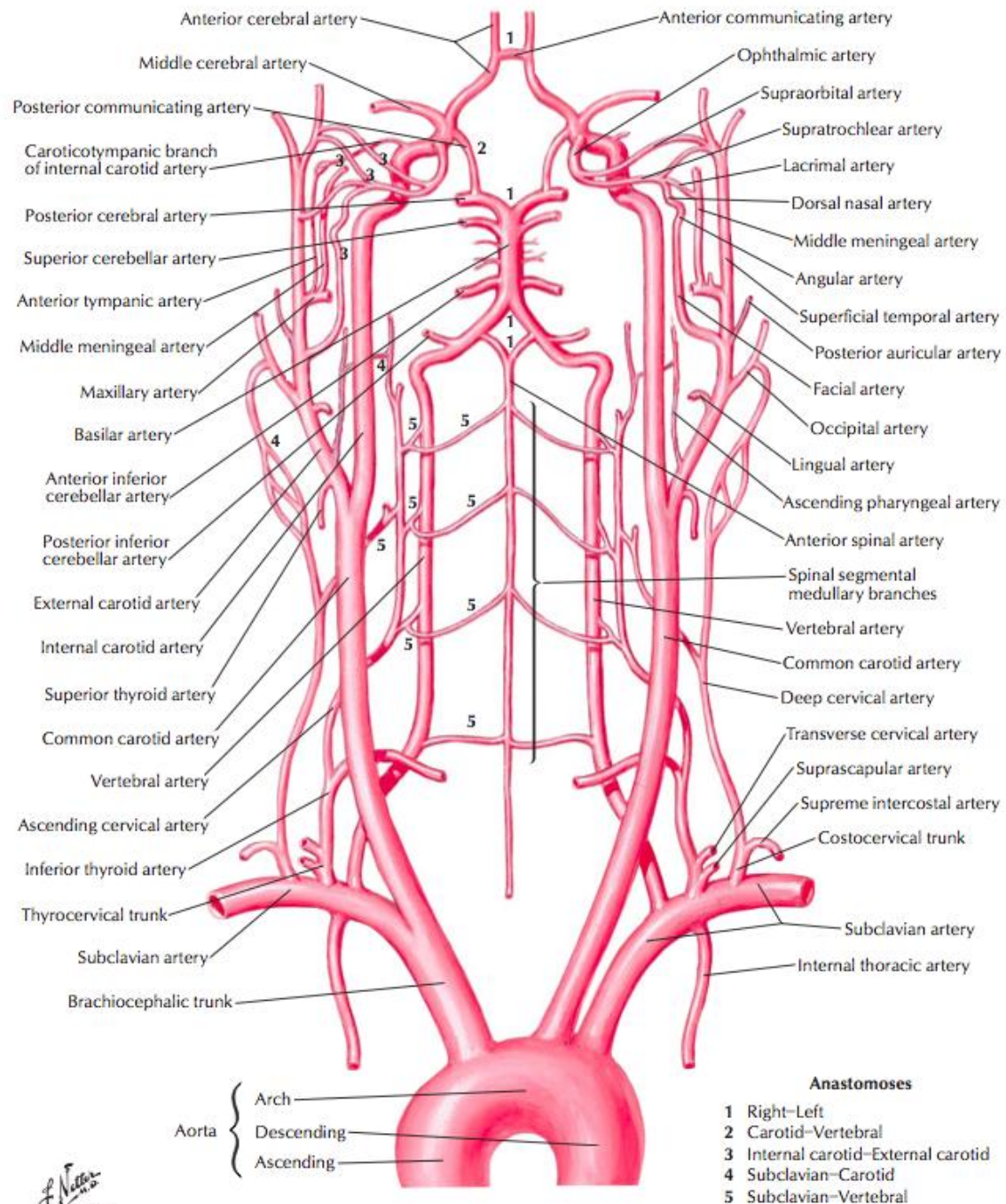
Piloid Astrocytoma

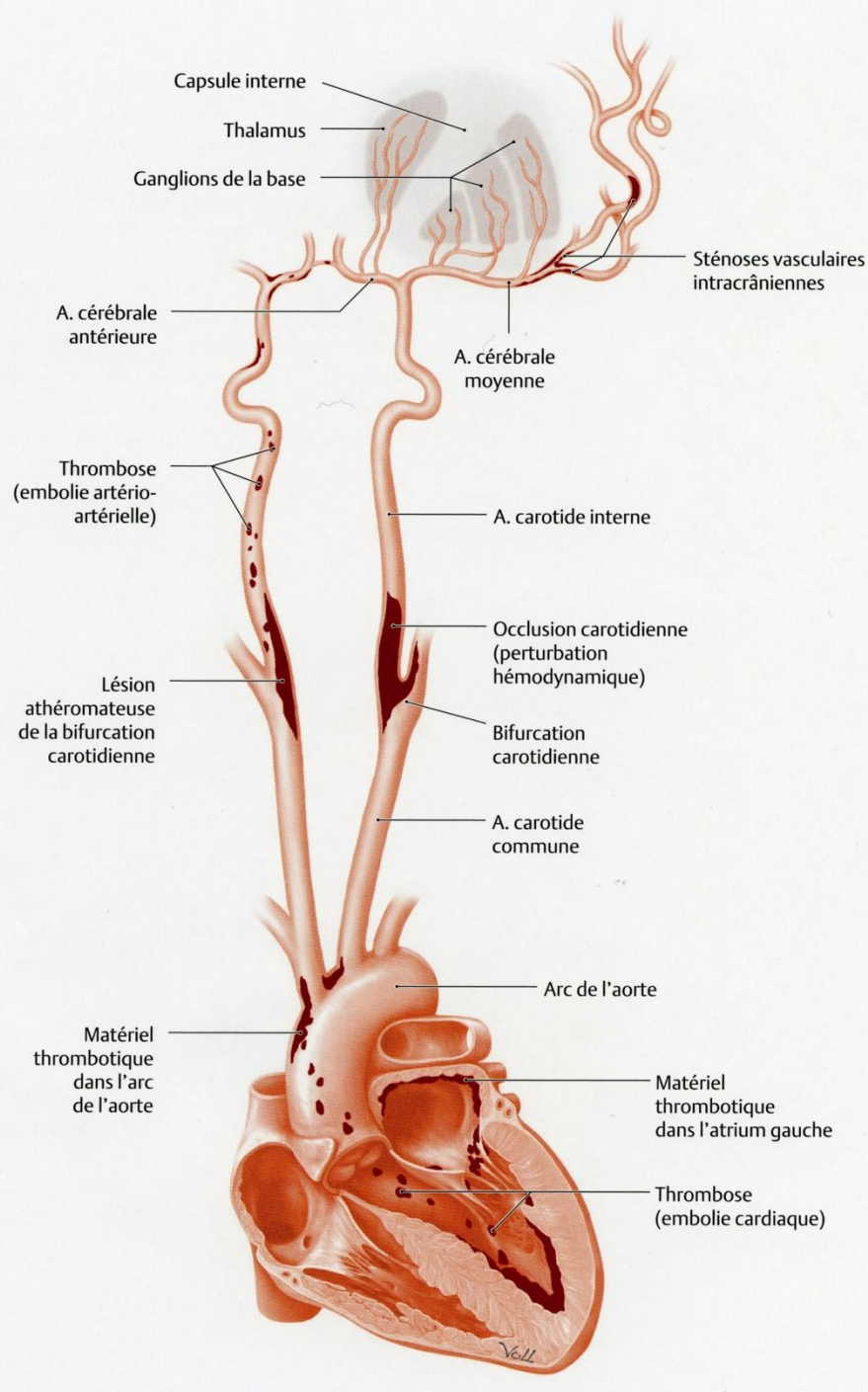


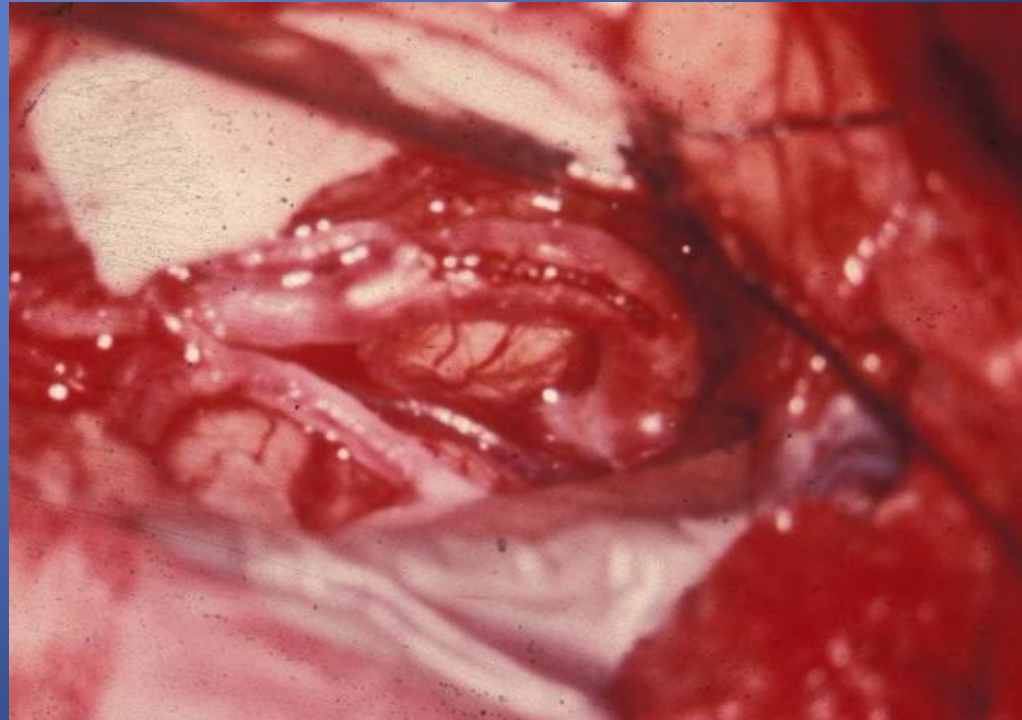
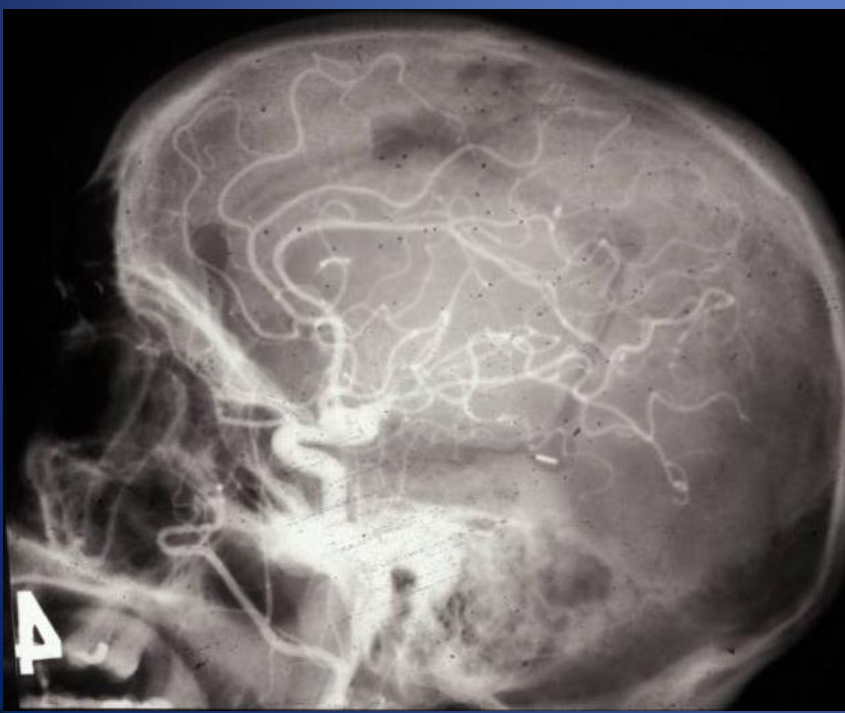
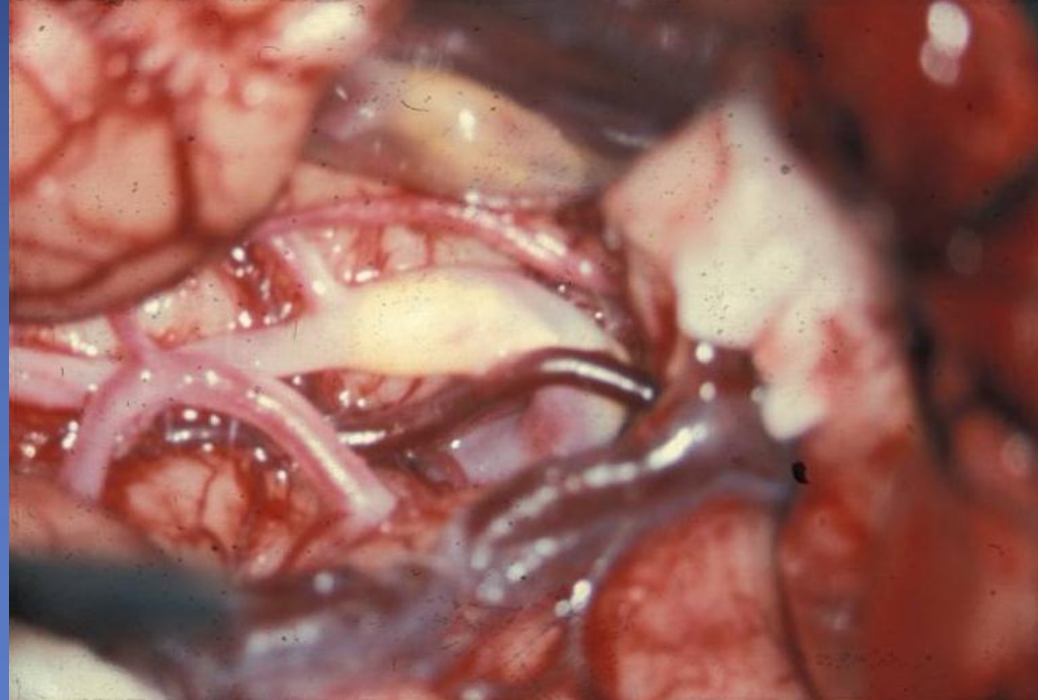
Piloid Astrocytoma



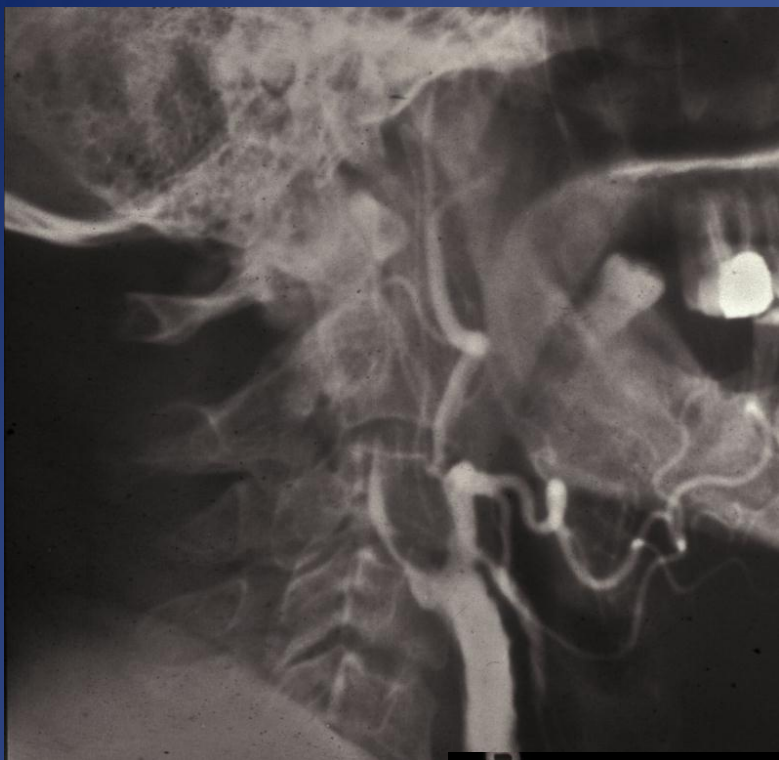


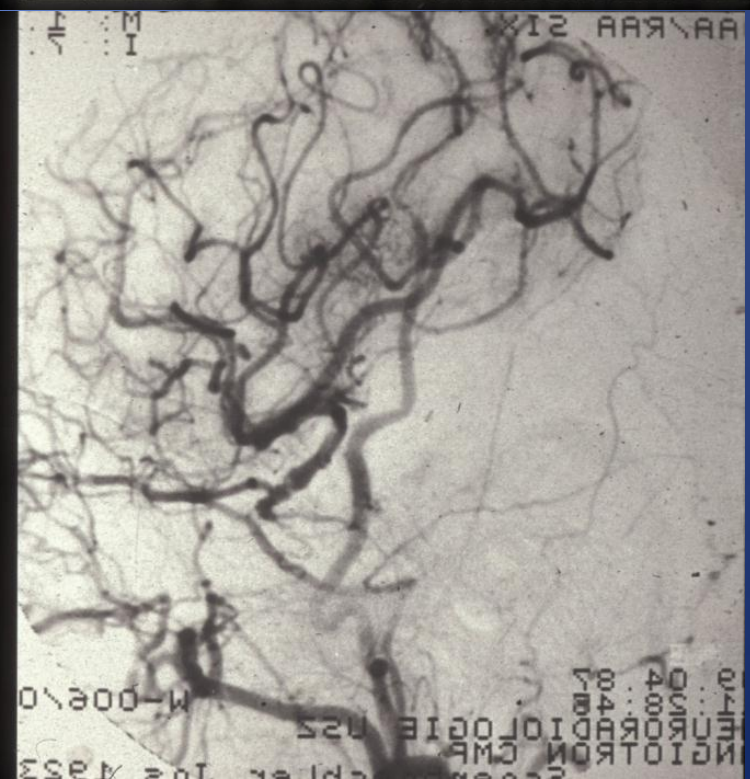
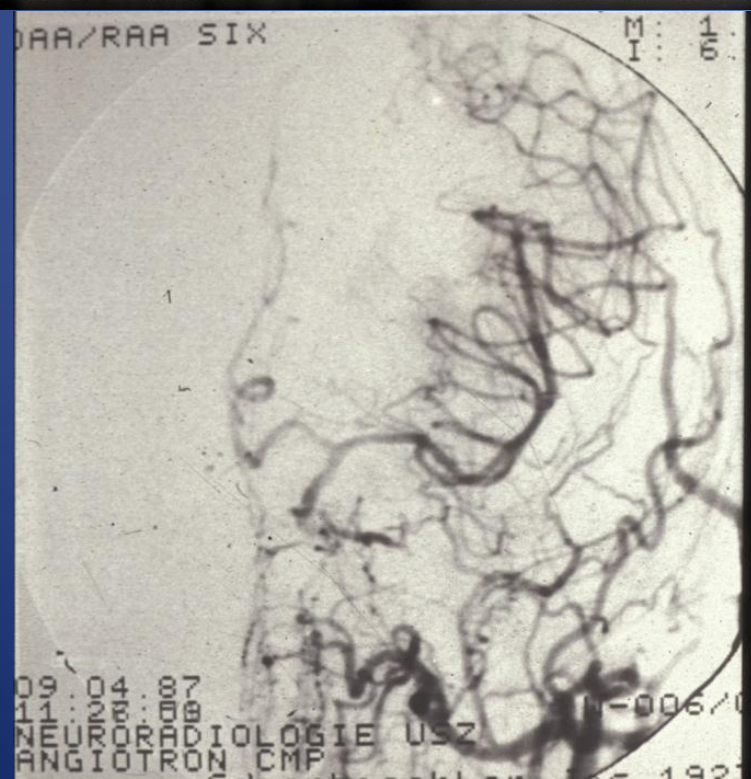
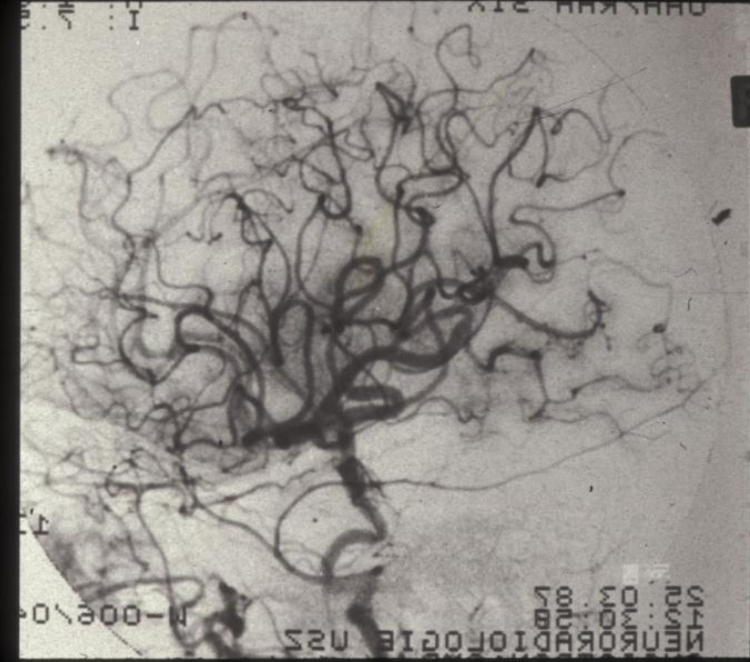
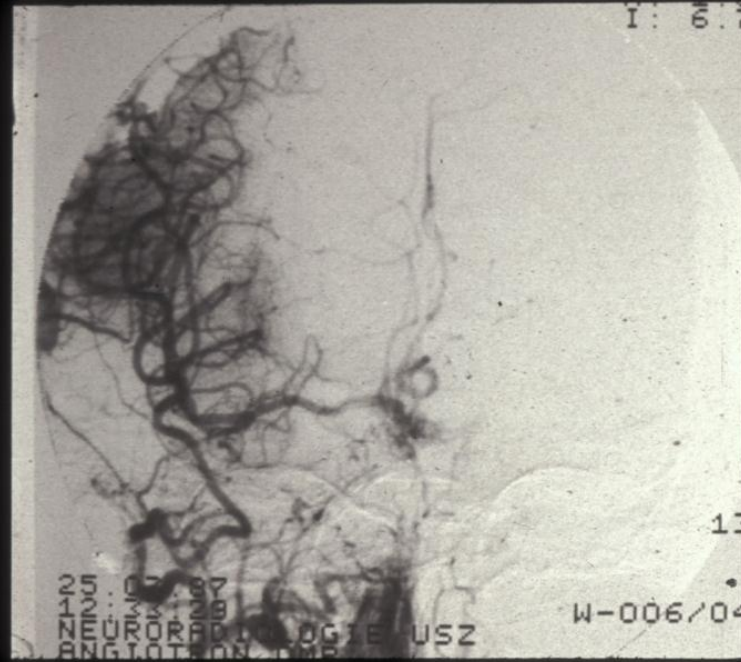


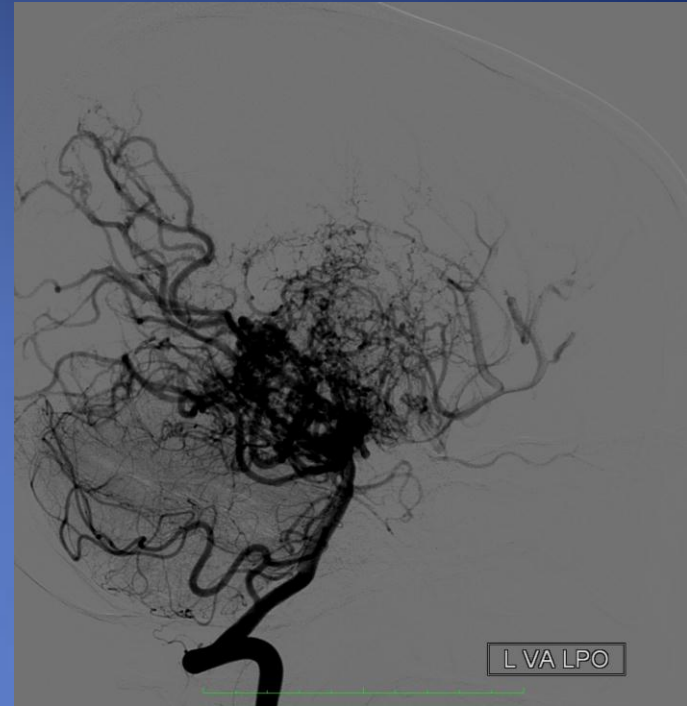
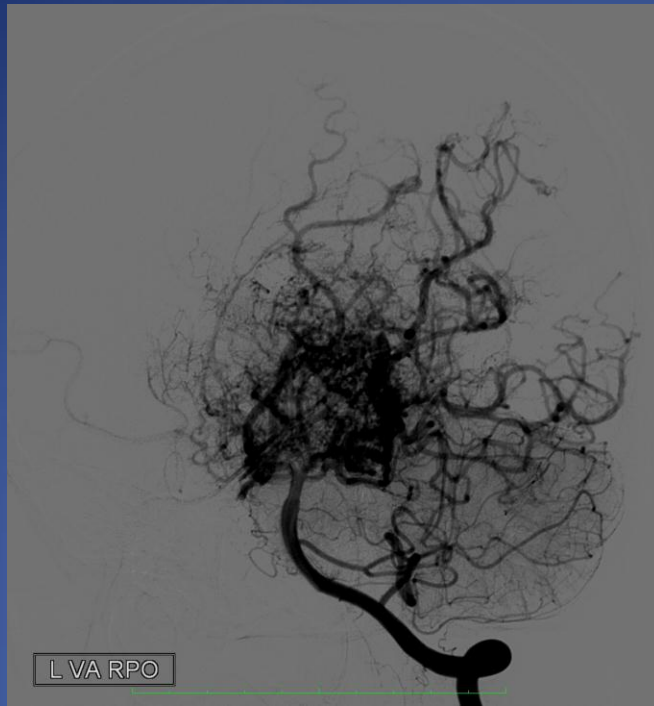




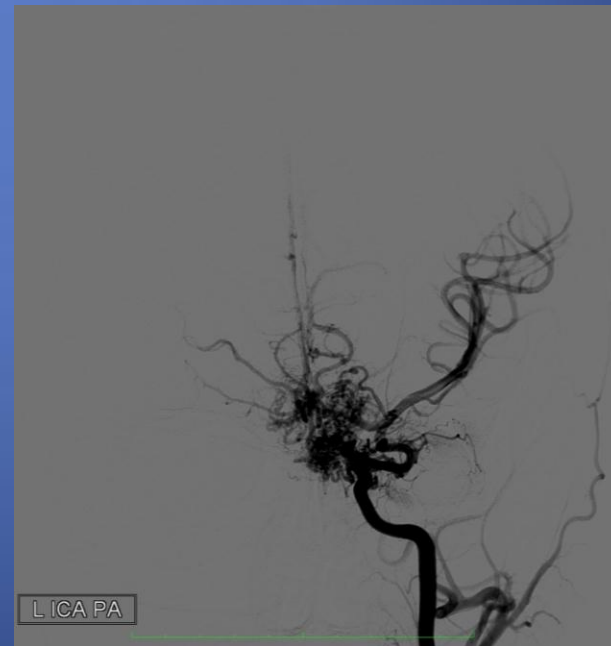
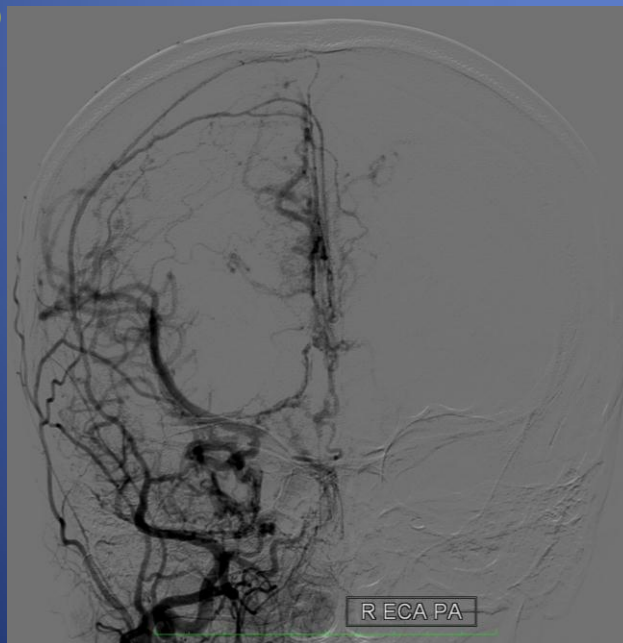


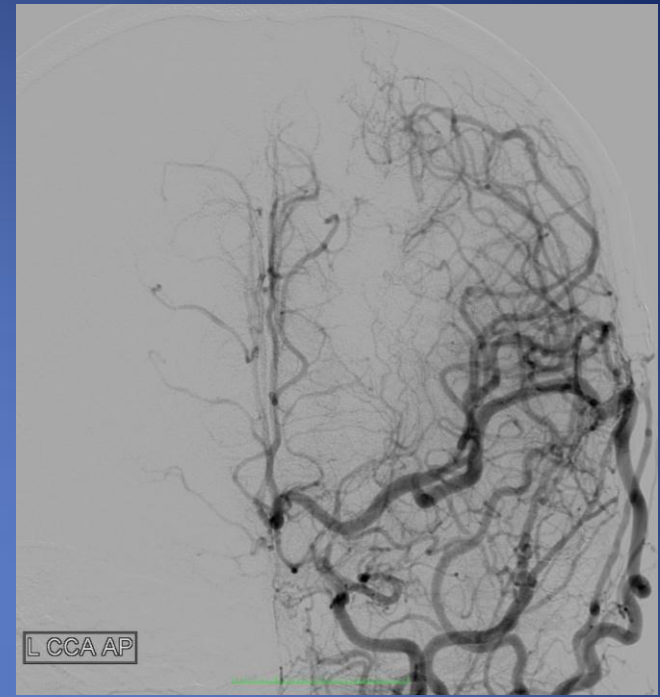
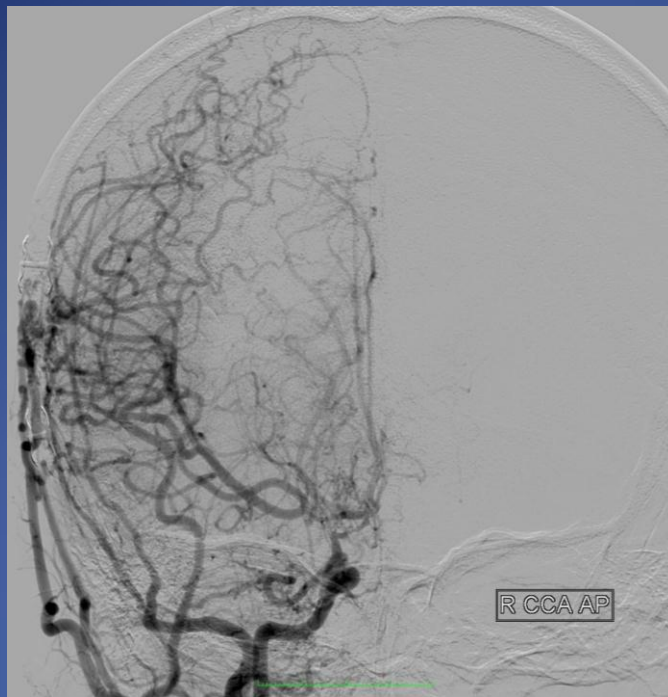




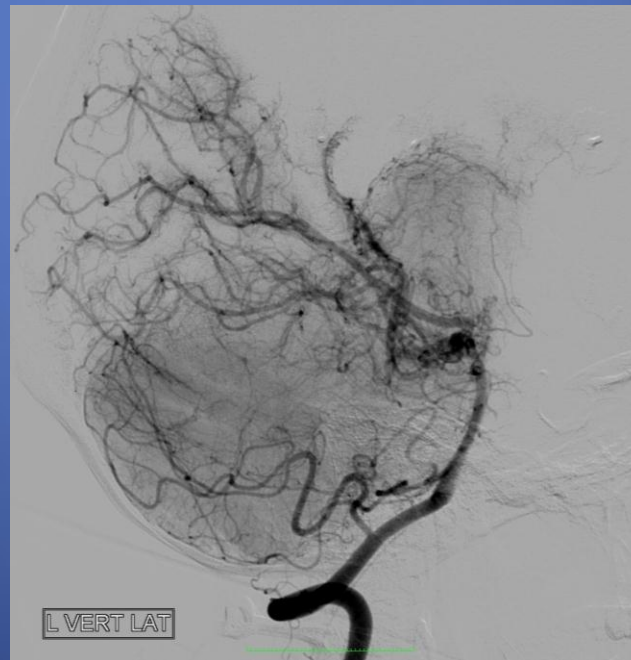


09.07.2012 Pre Op

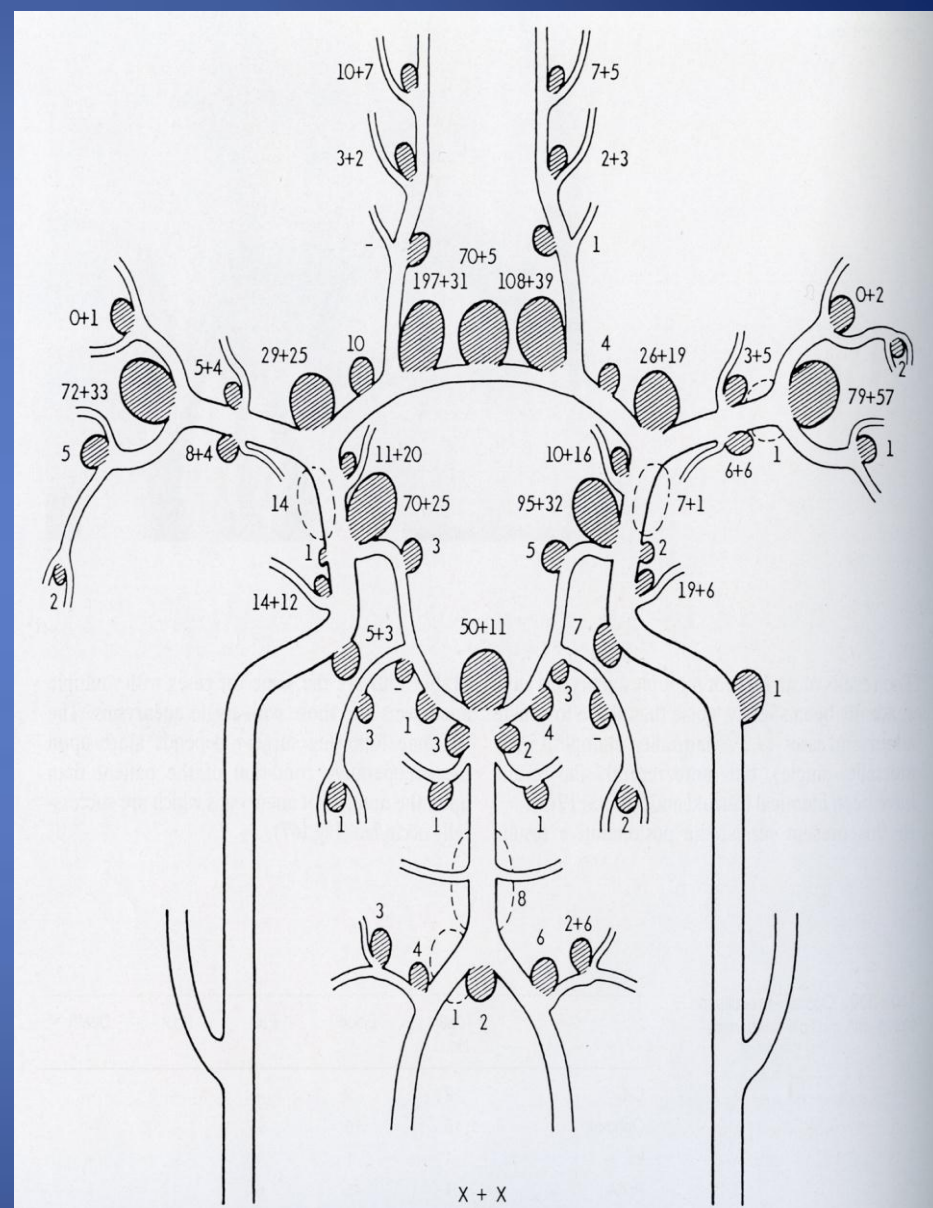
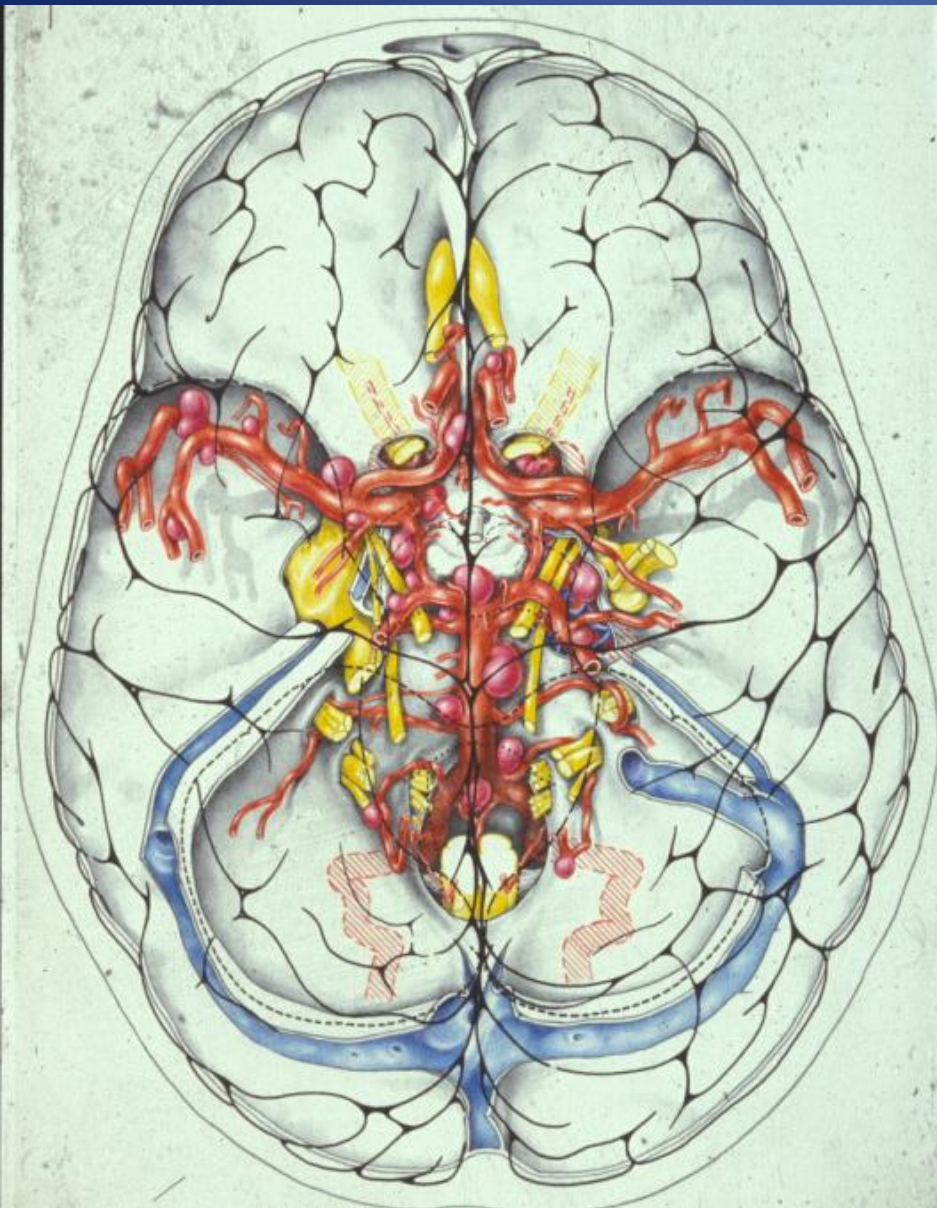


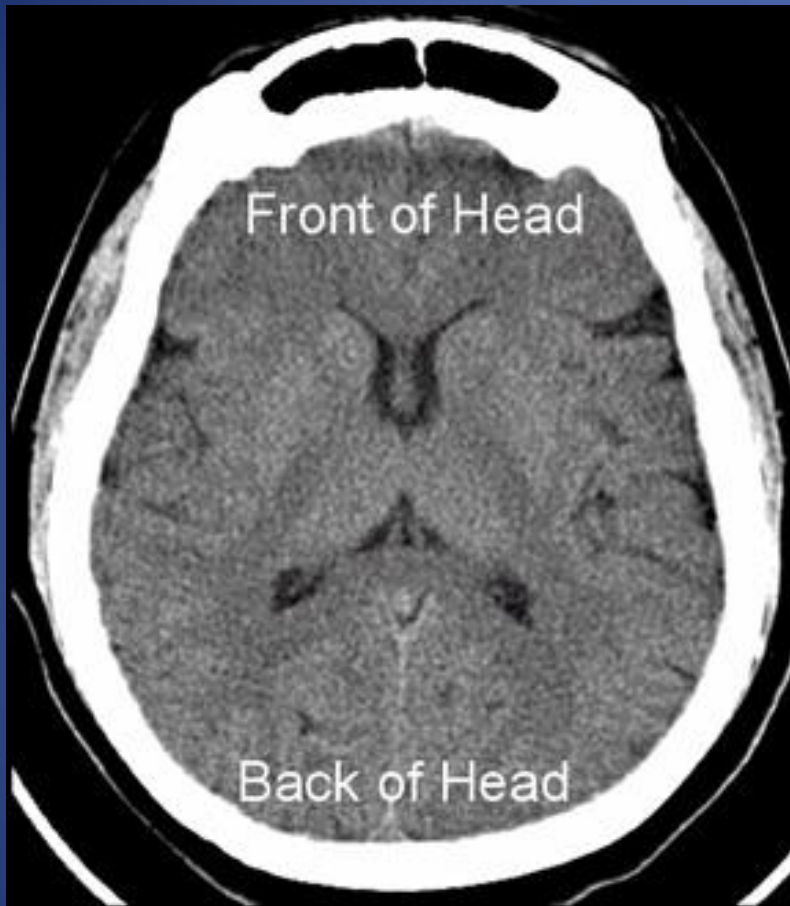


23.01.2014
Post Op

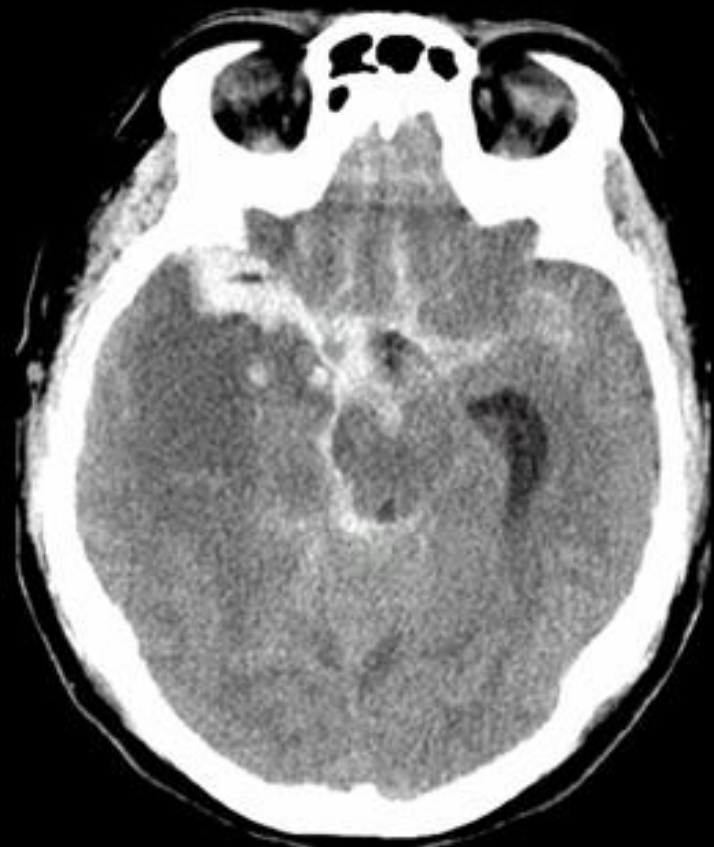




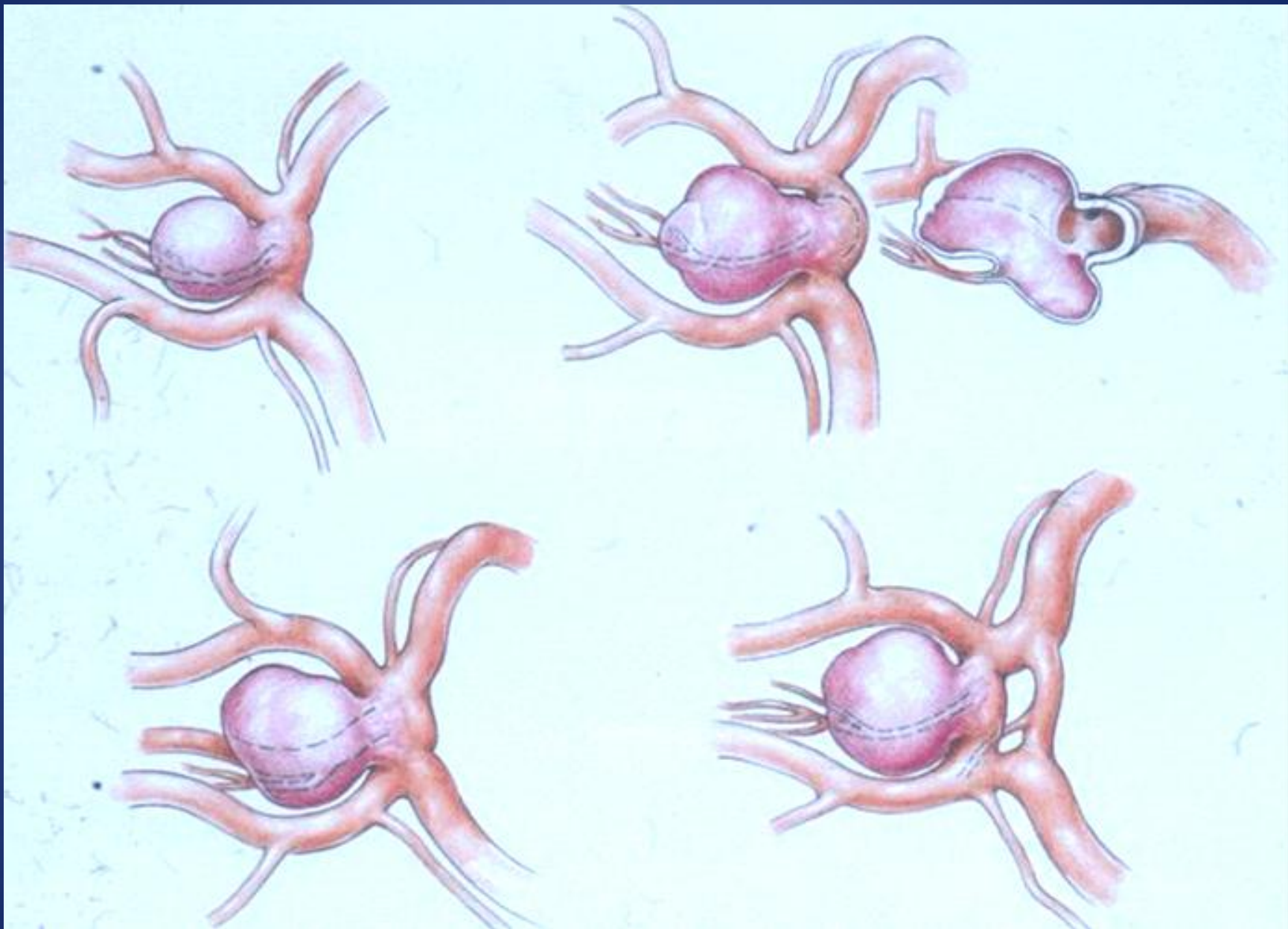


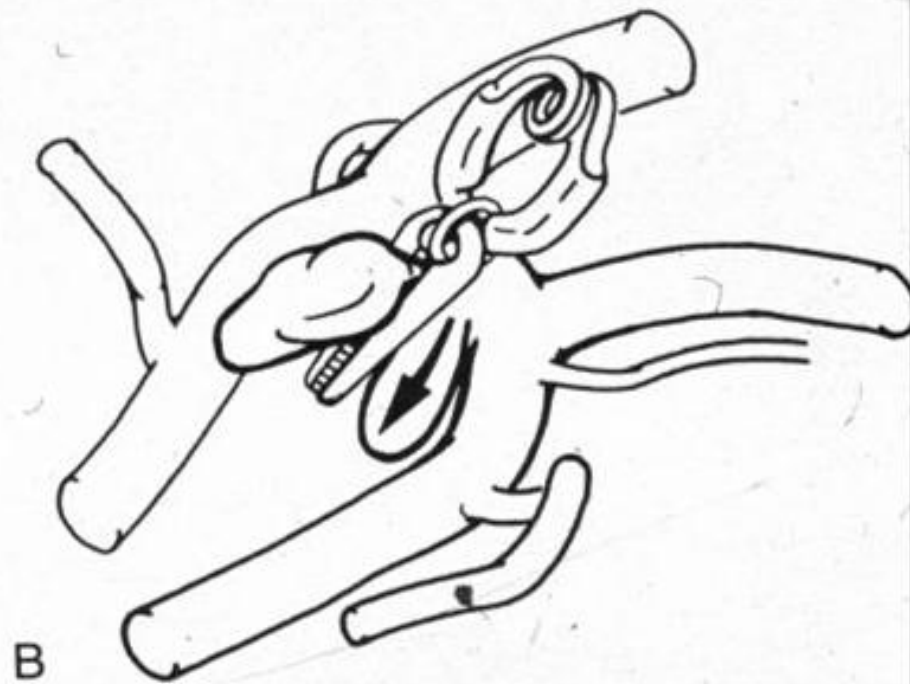
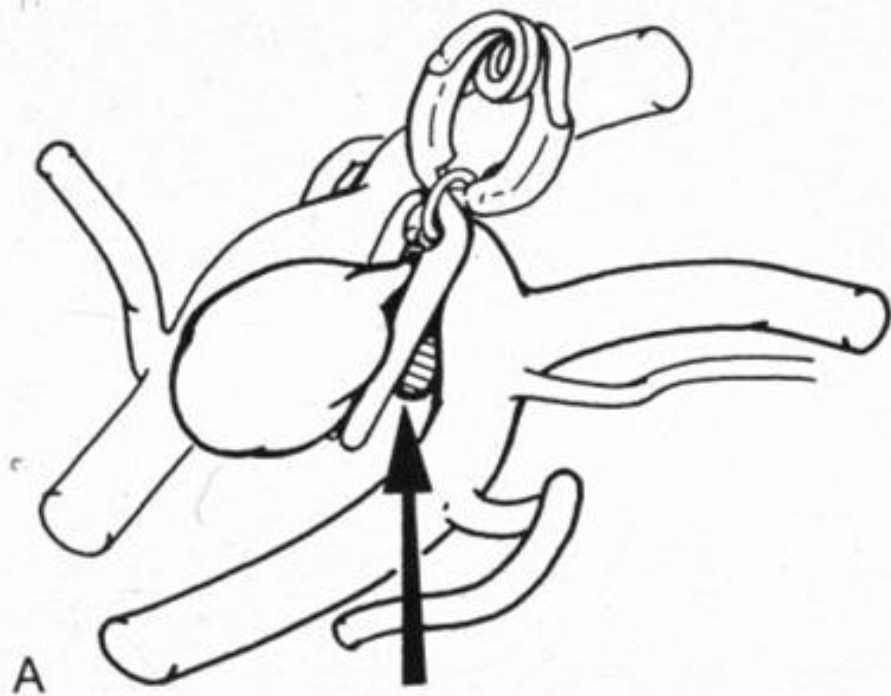


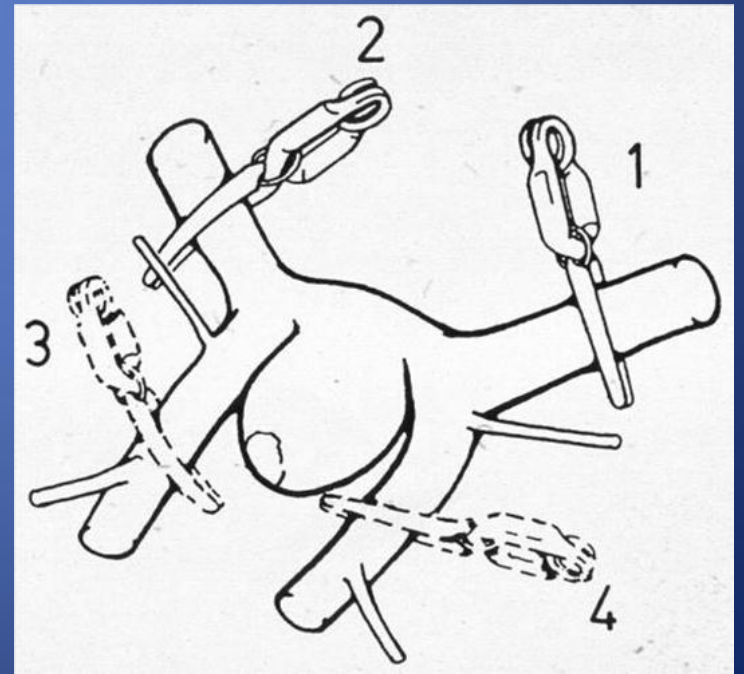
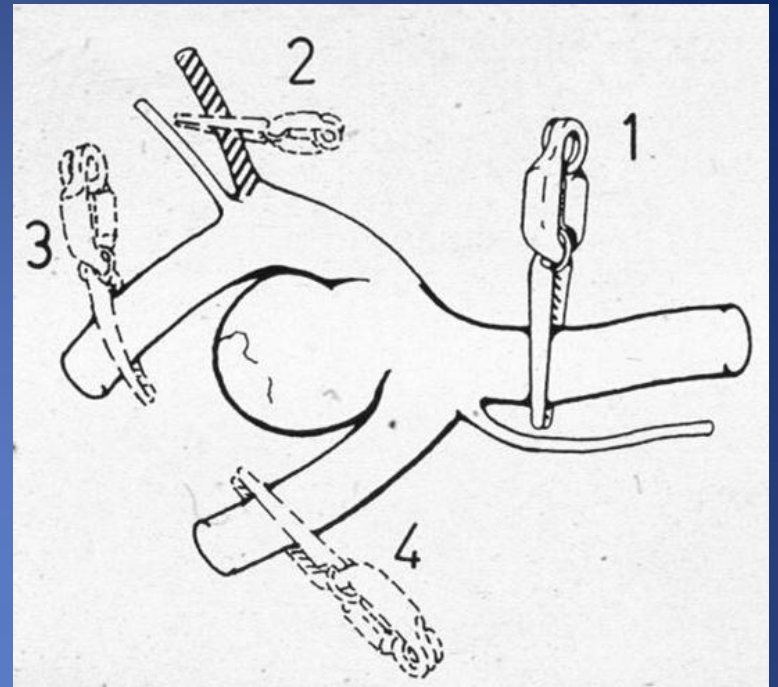
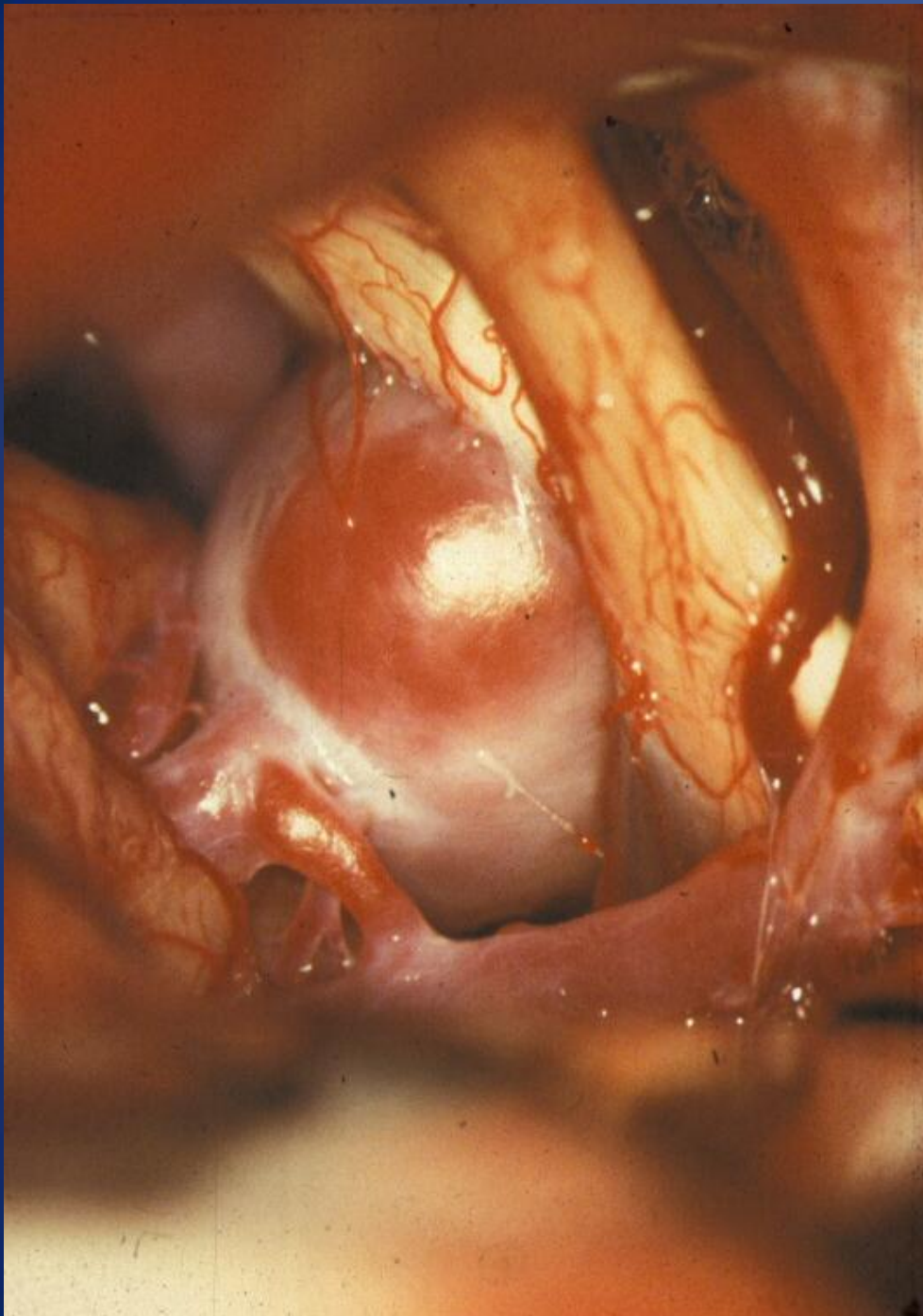
Normal CT Scan
Slice of Brain

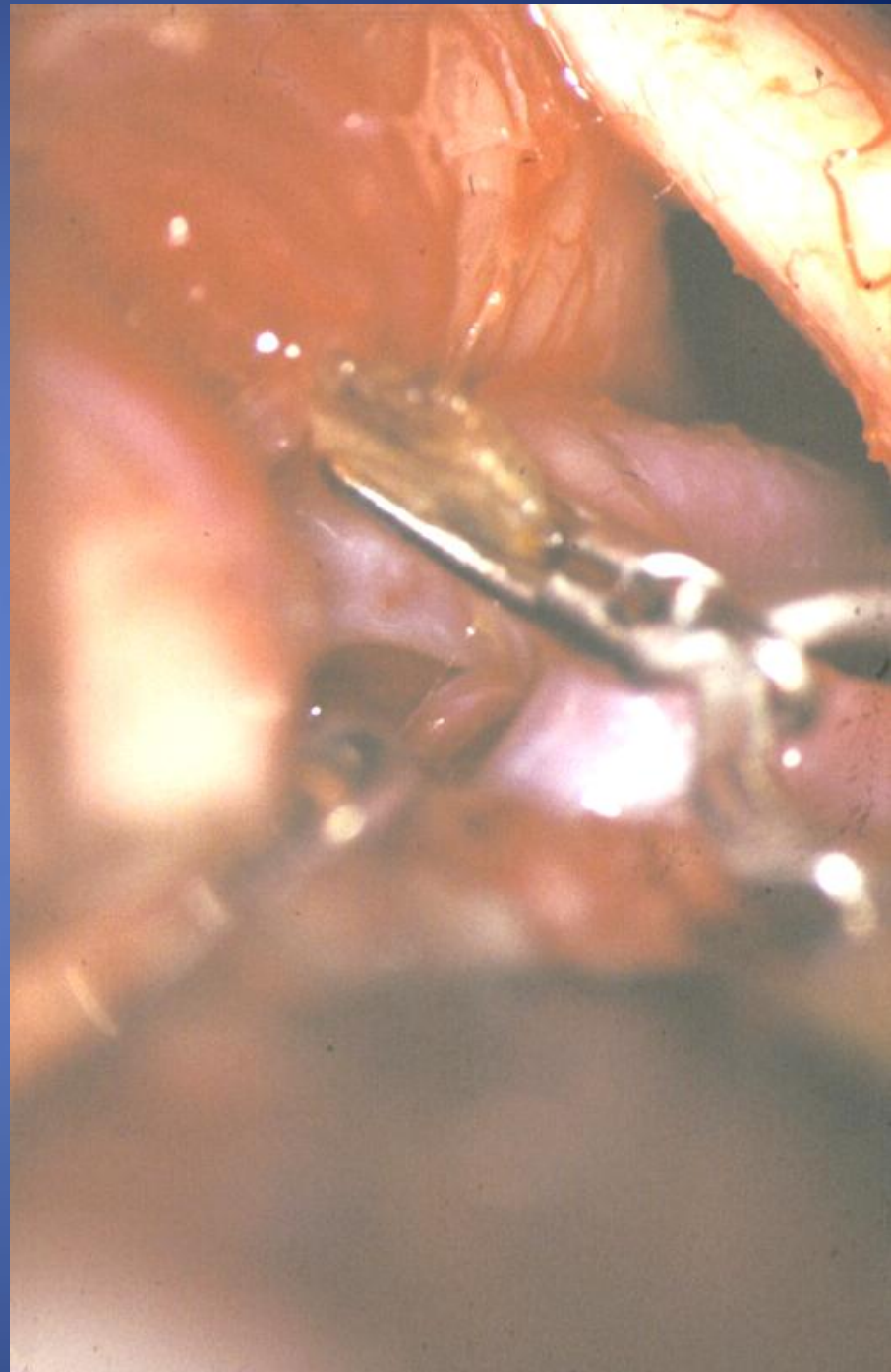
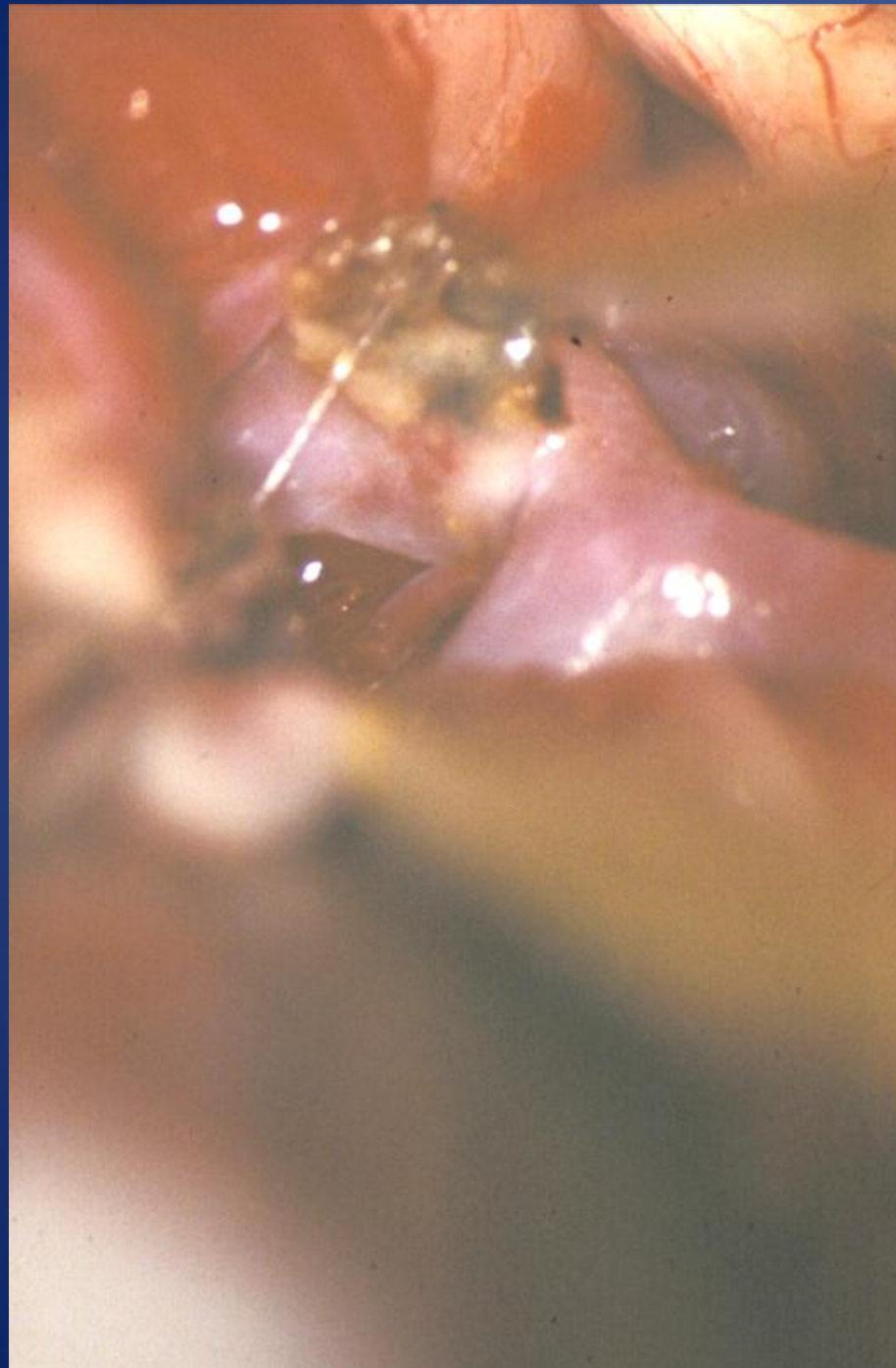


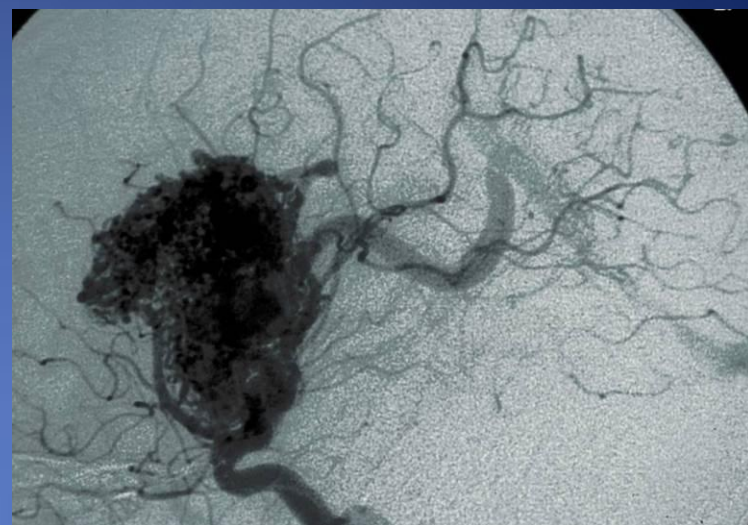
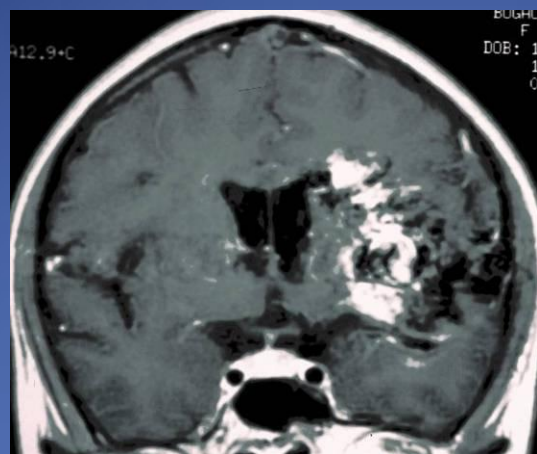
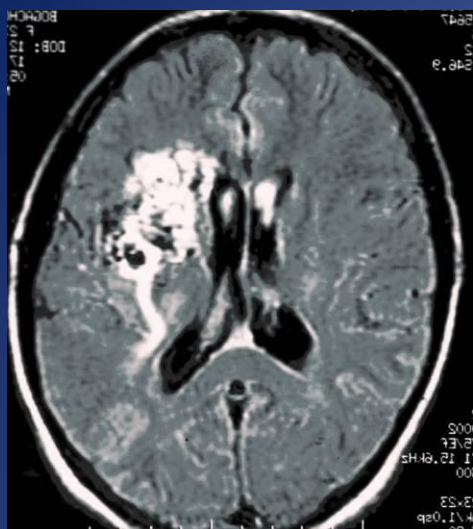
Subarachnoid Hemorrhage
(bright white areas)
CT Scan Slice of Brain

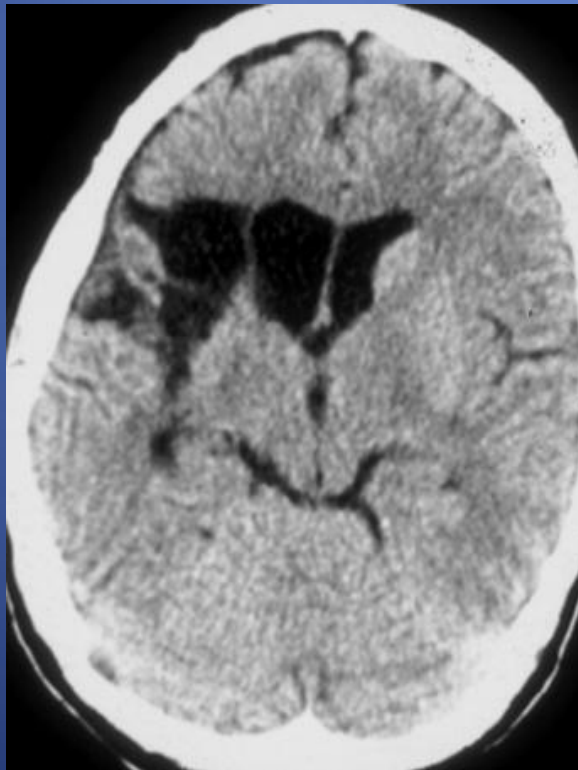
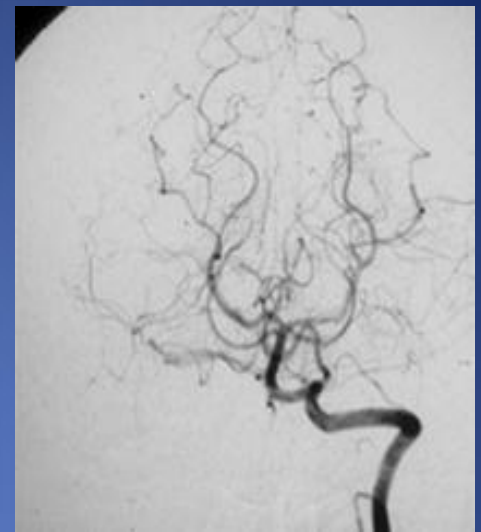
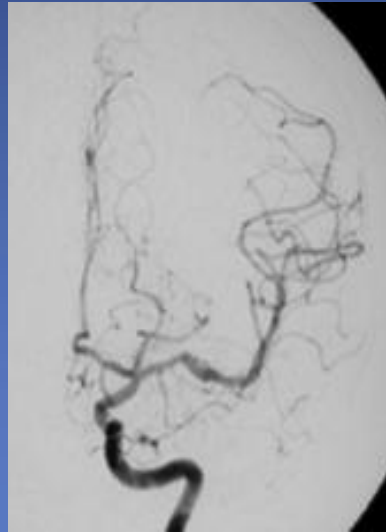
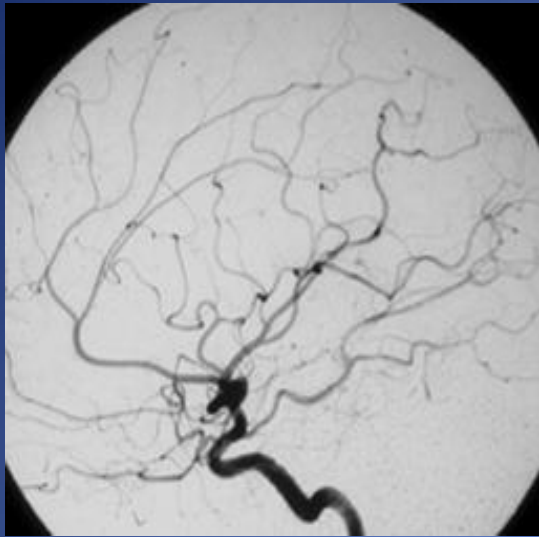


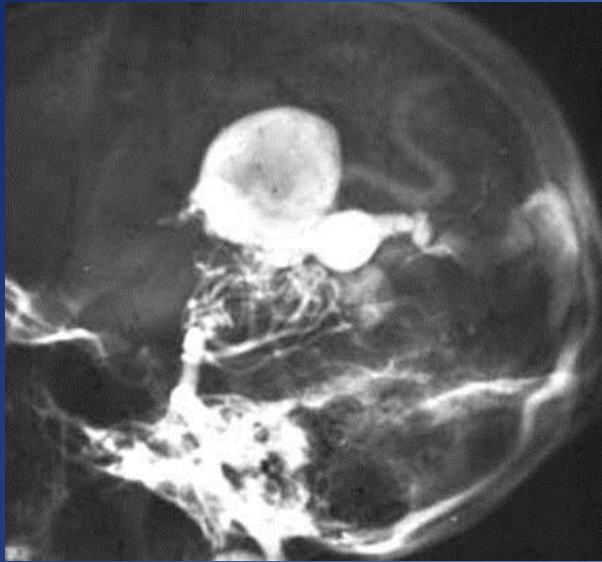


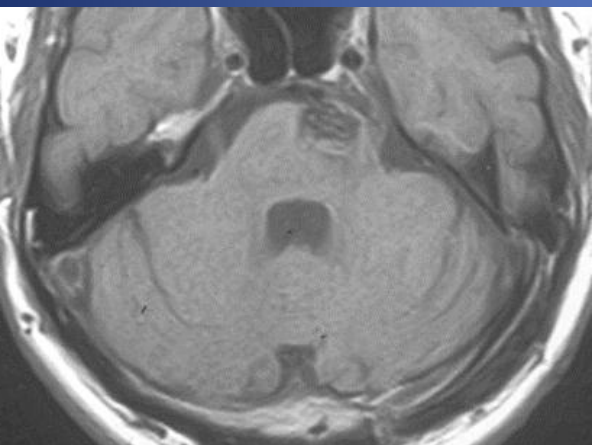


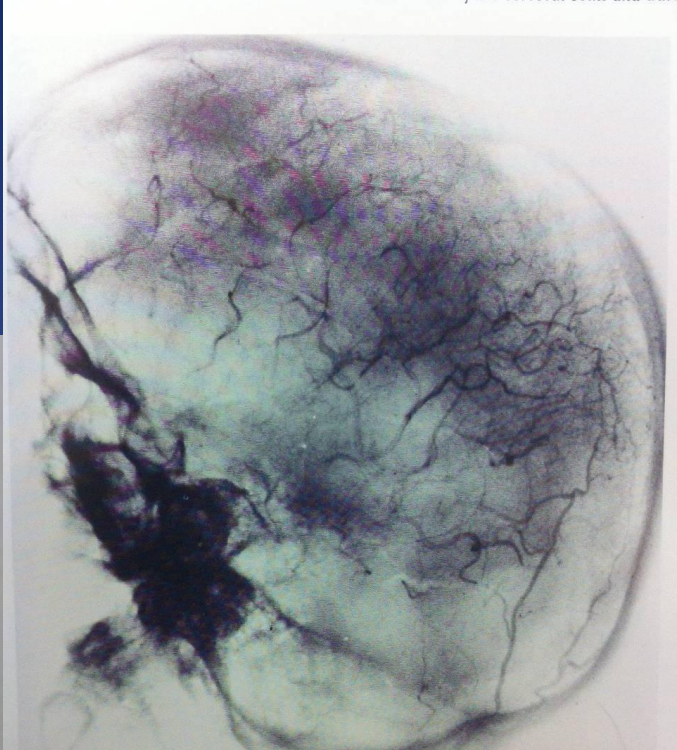












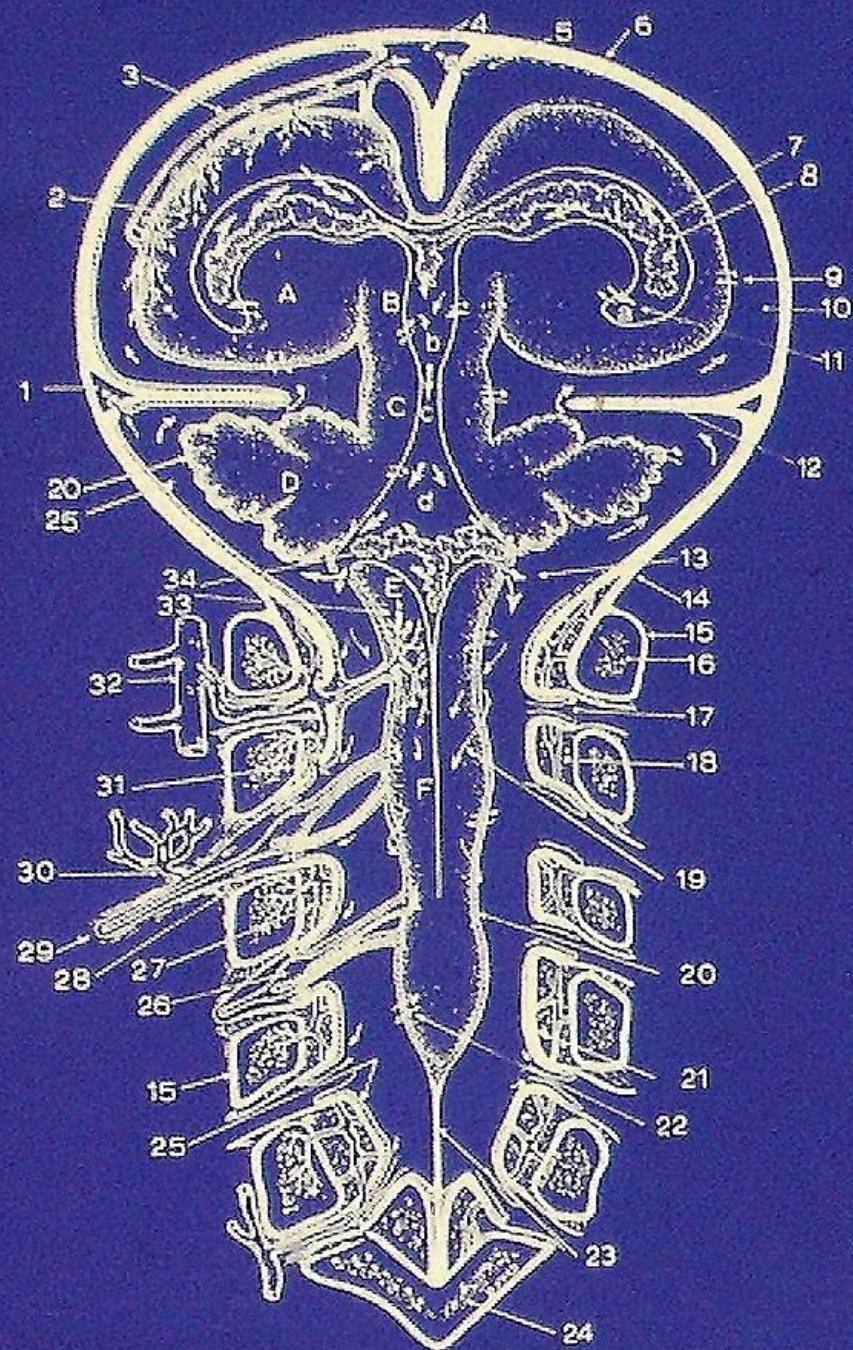
Superior Sagittal Sinus Thrombosis 1953

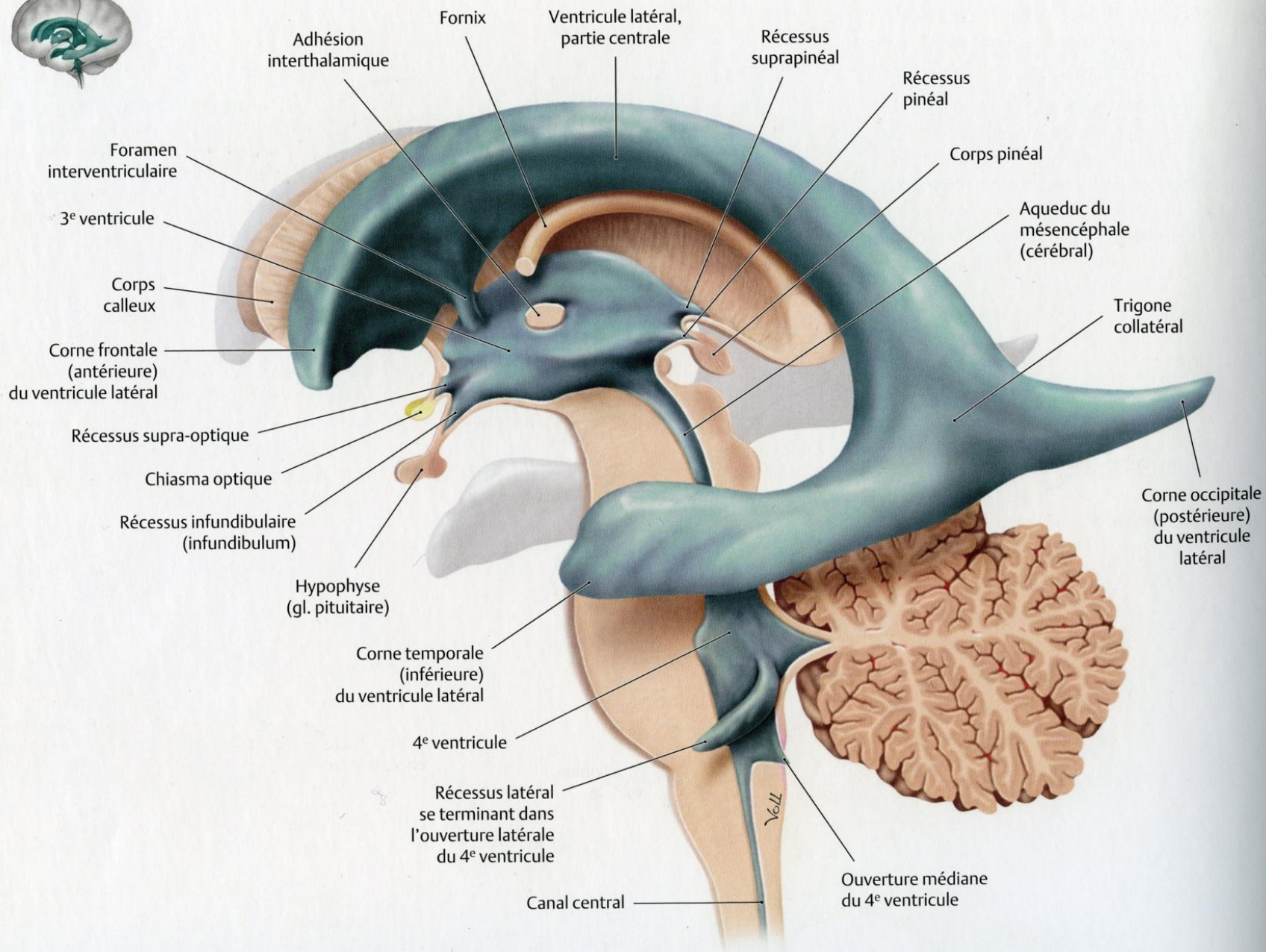
Professor of Radiology, Neurology and Neurosurgery, and Chief, Section of
 Radiology, University of California School of Medicine,
 San Francisco Medical Center, San Francisco, California

D. Gordon Potts, M.D.

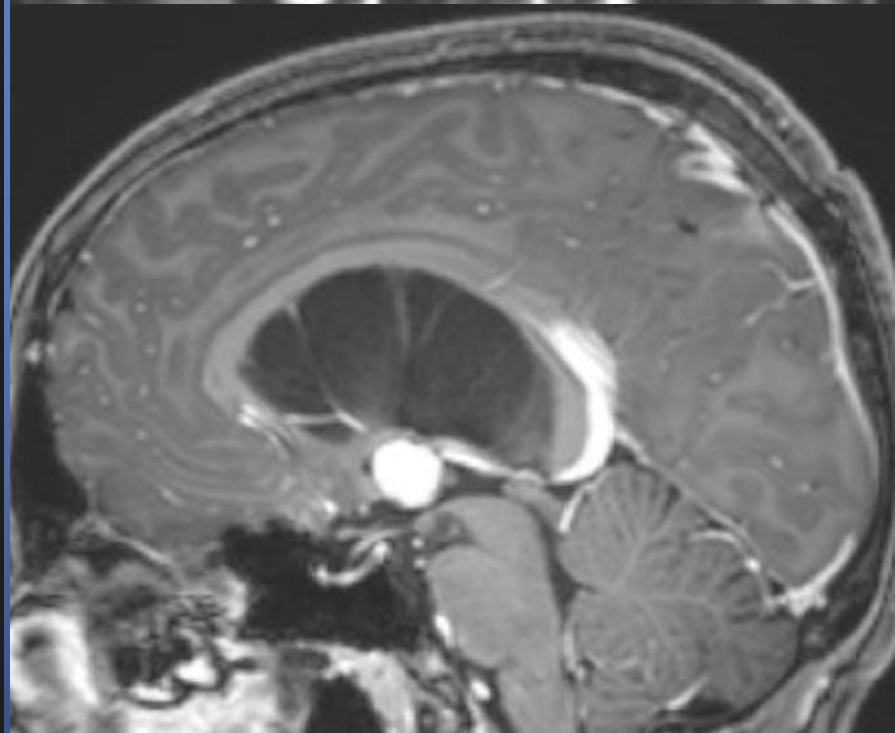
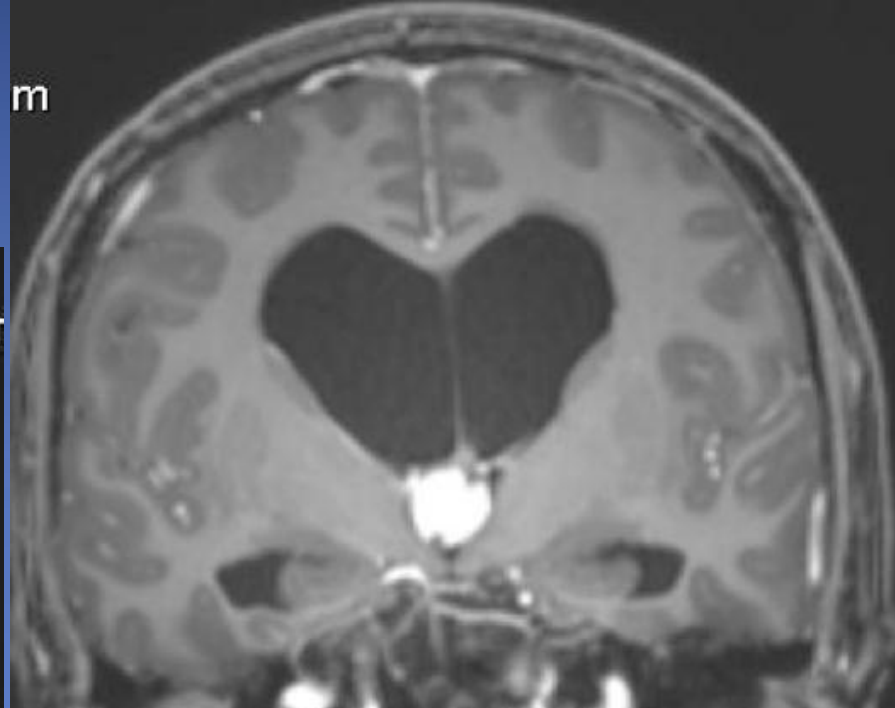
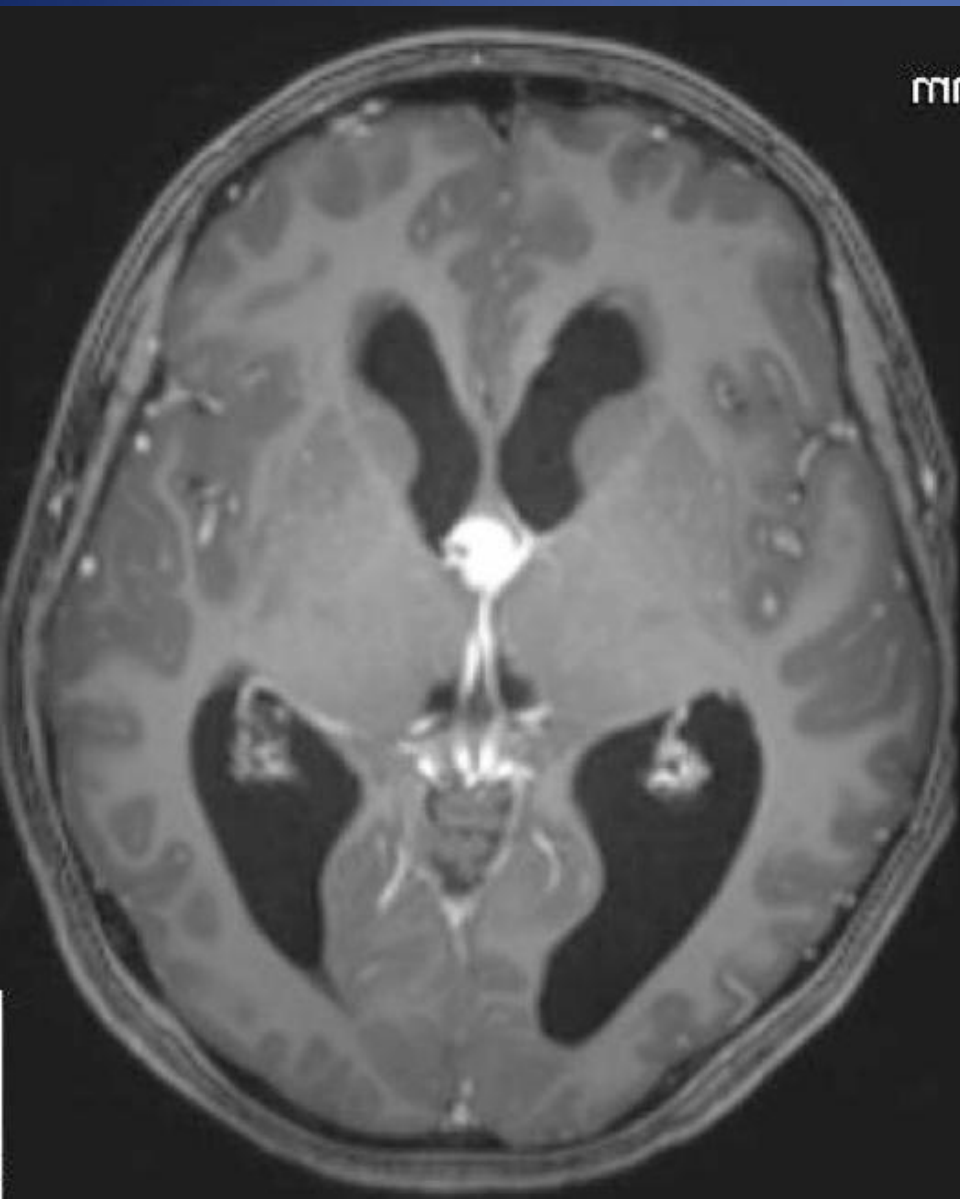
Professor of Radiology, Cornell University Medical College;
 Attending Radiologist, The New York Hospital,
 New York, New York

FLOW OF CEREBROSPINAL FLUID

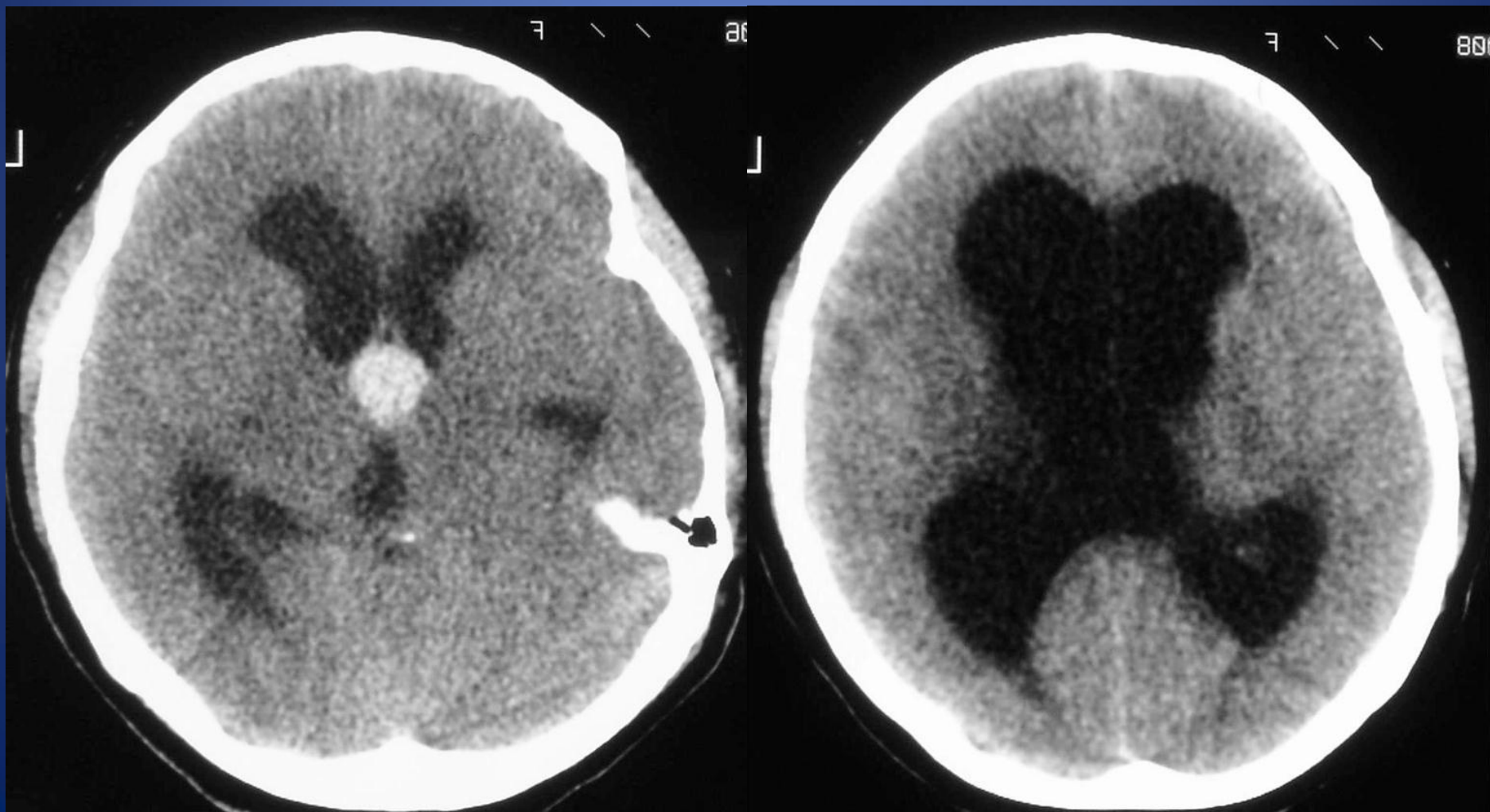




SY, 31 y, F

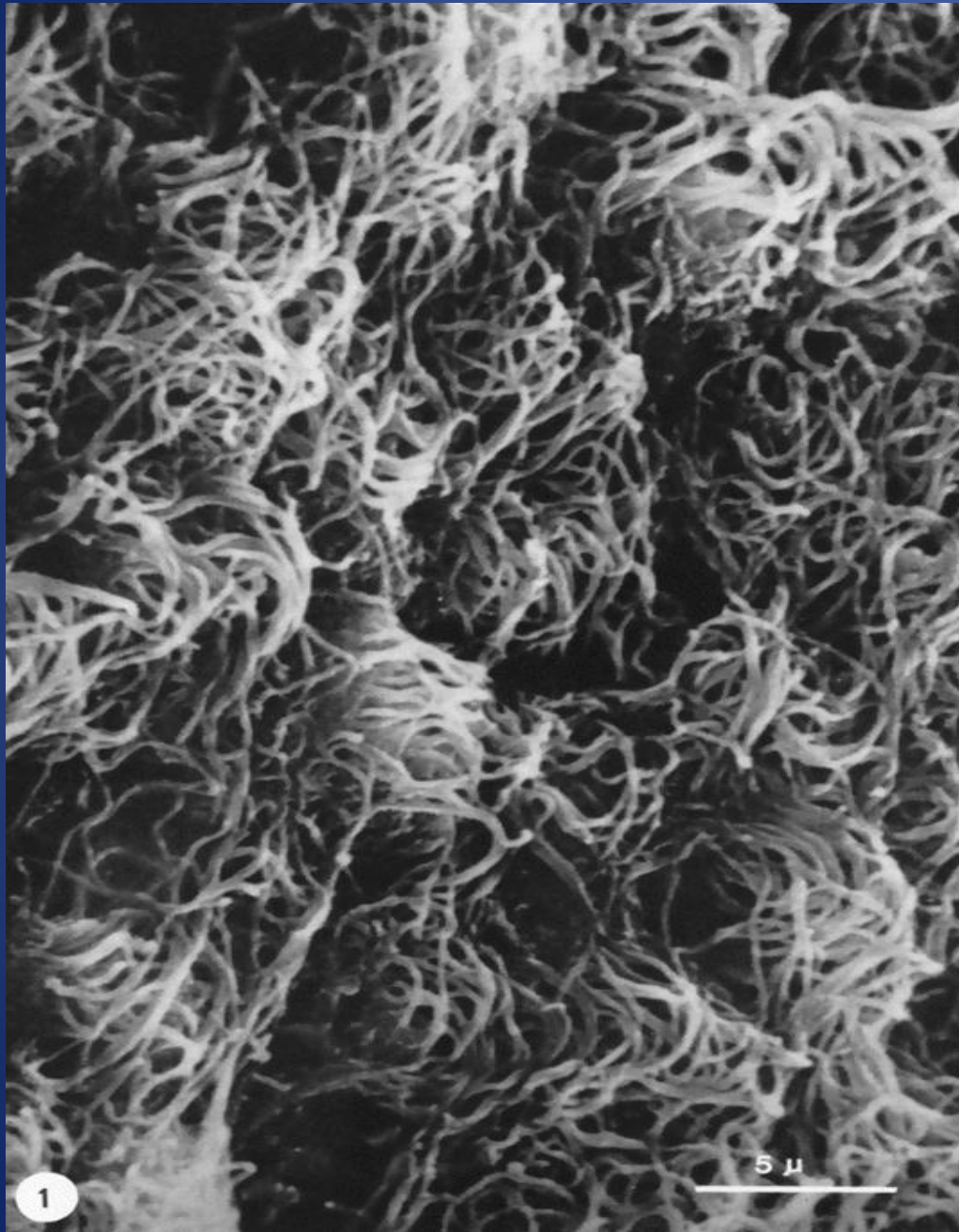


SS, 28 y, F



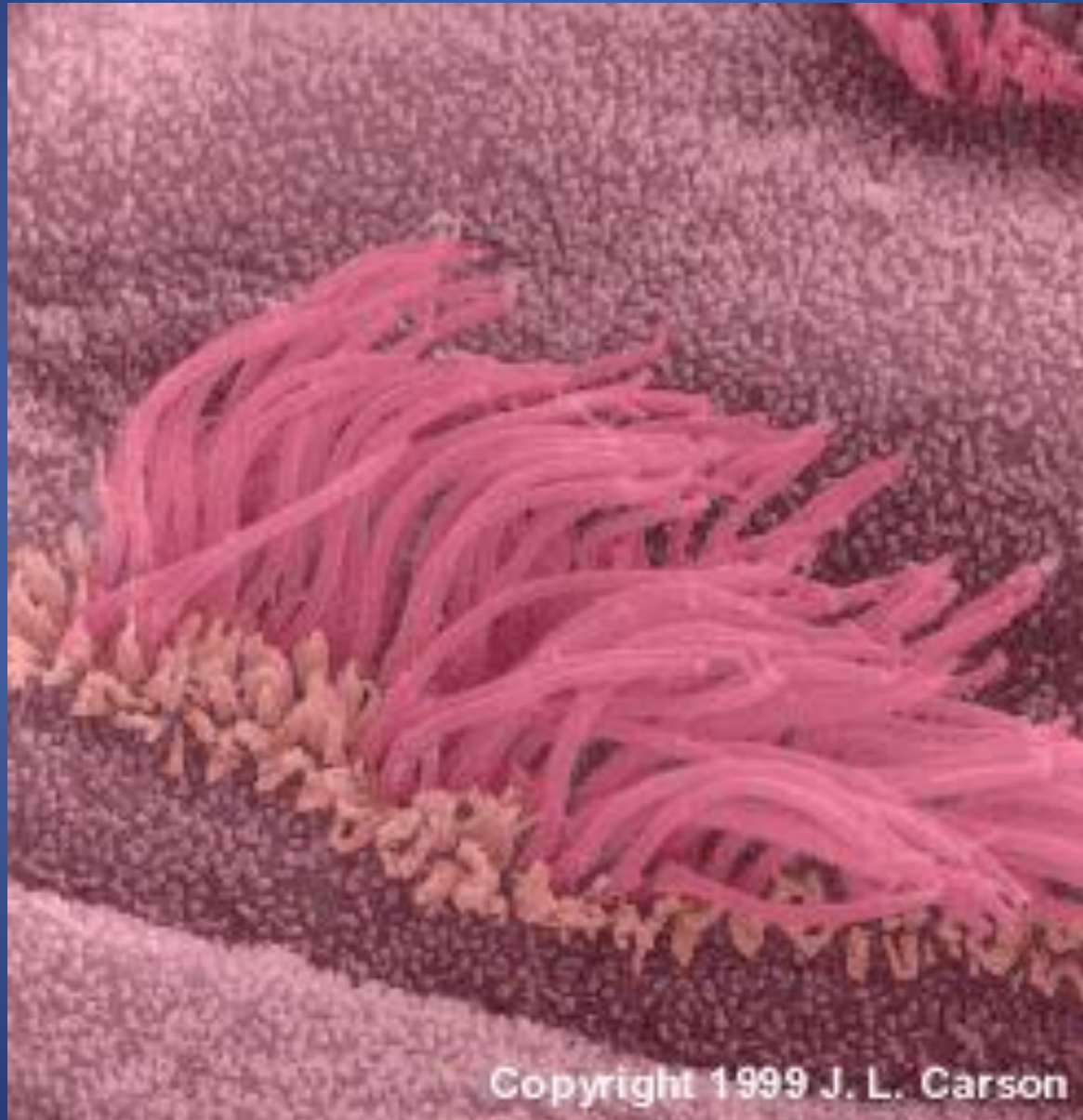


Lateral Ventricle of the Cat Ciliated Cells



F. Clementi, 1971

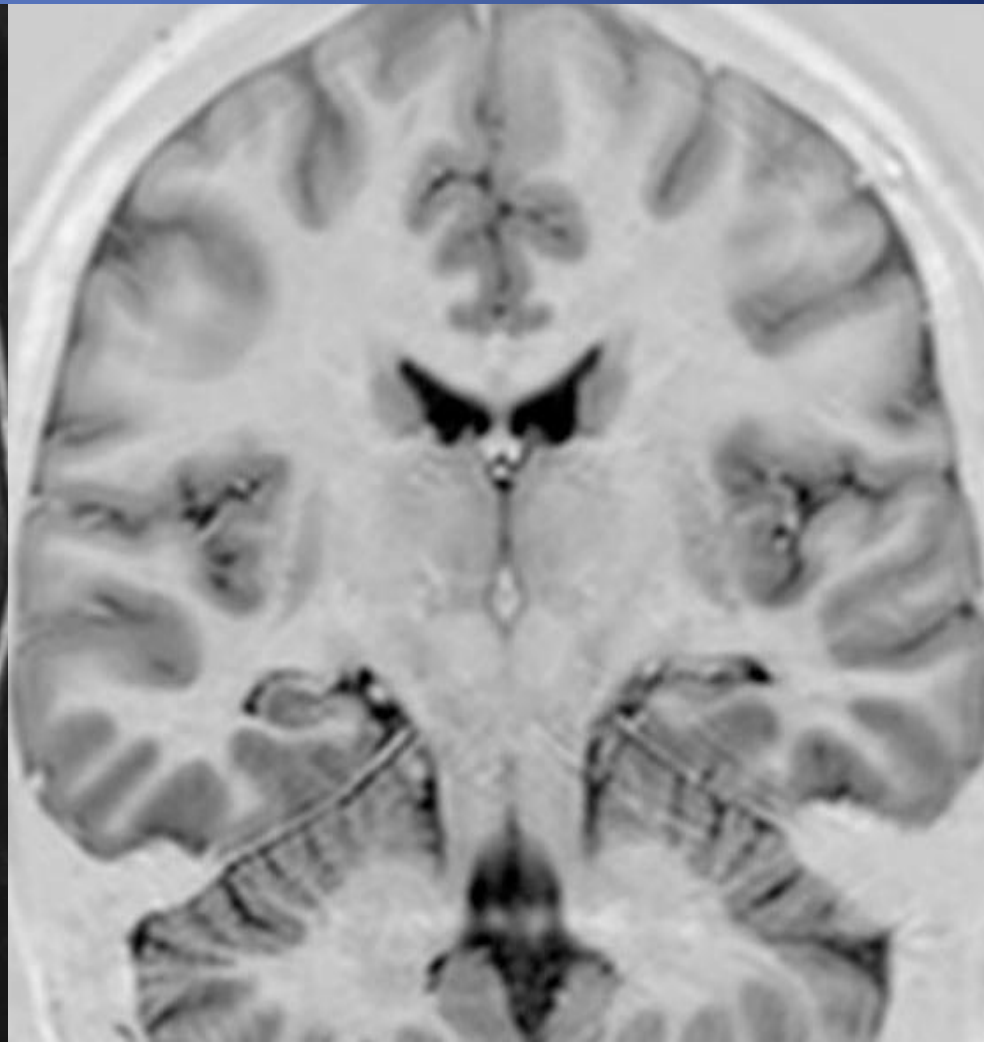
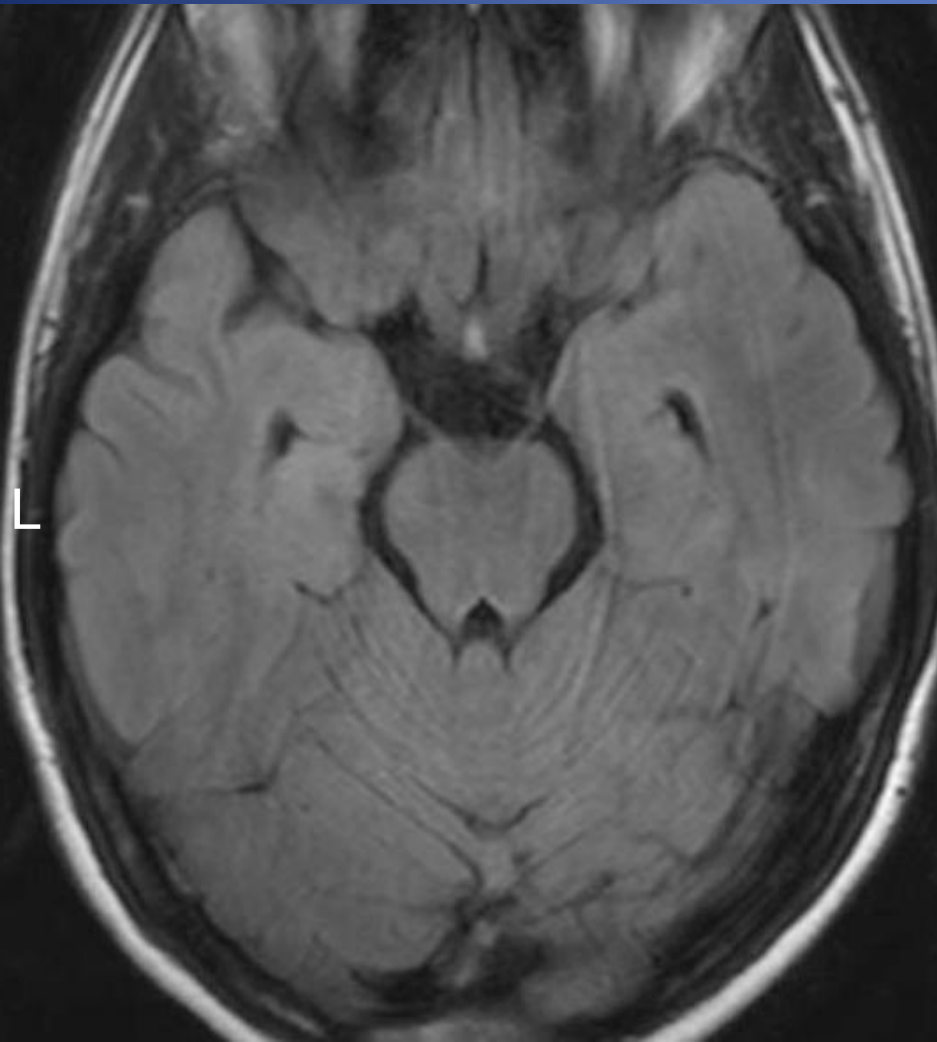
Nodal Akım

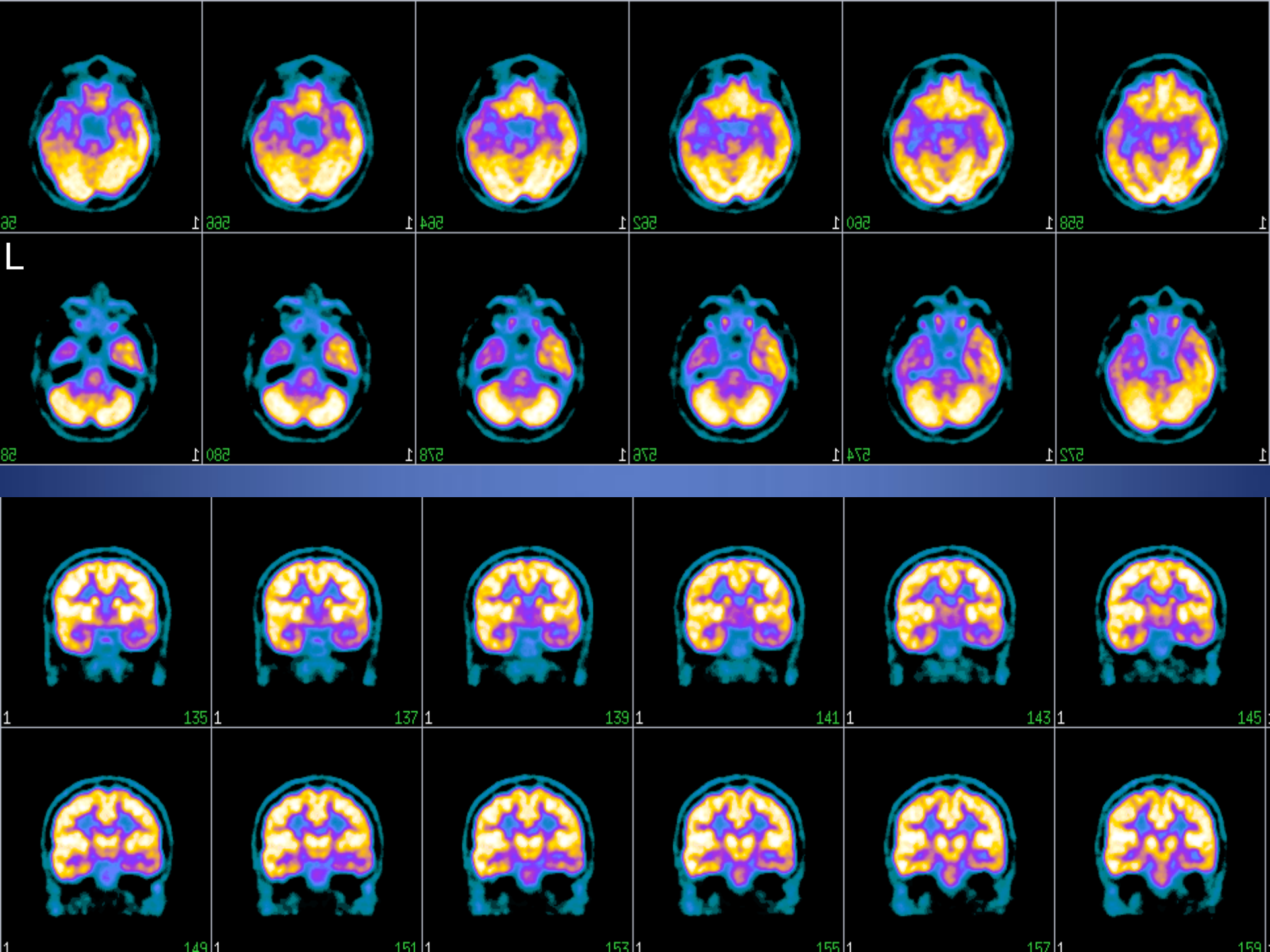


Copyright 1999 J. L. Carson

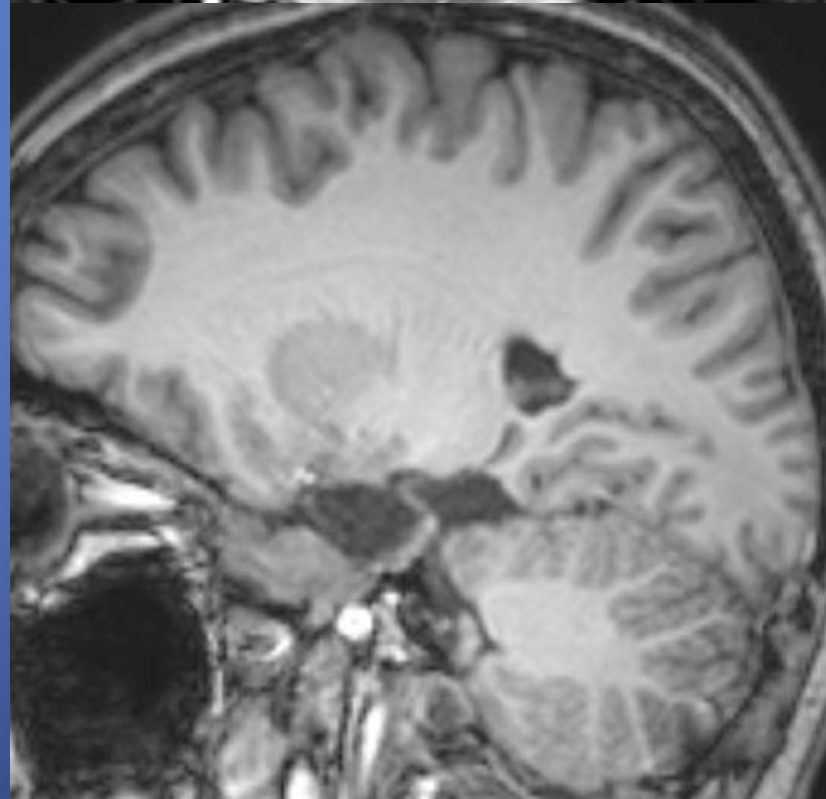
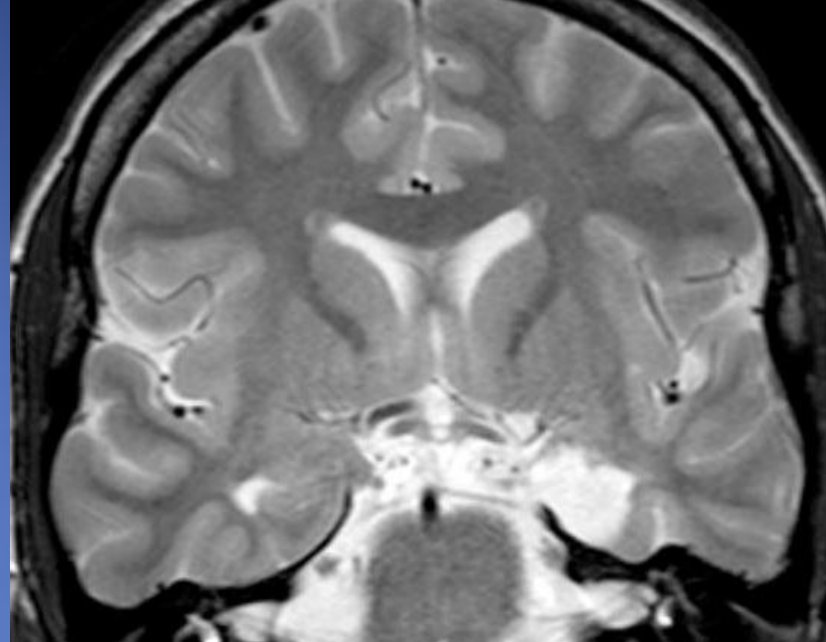
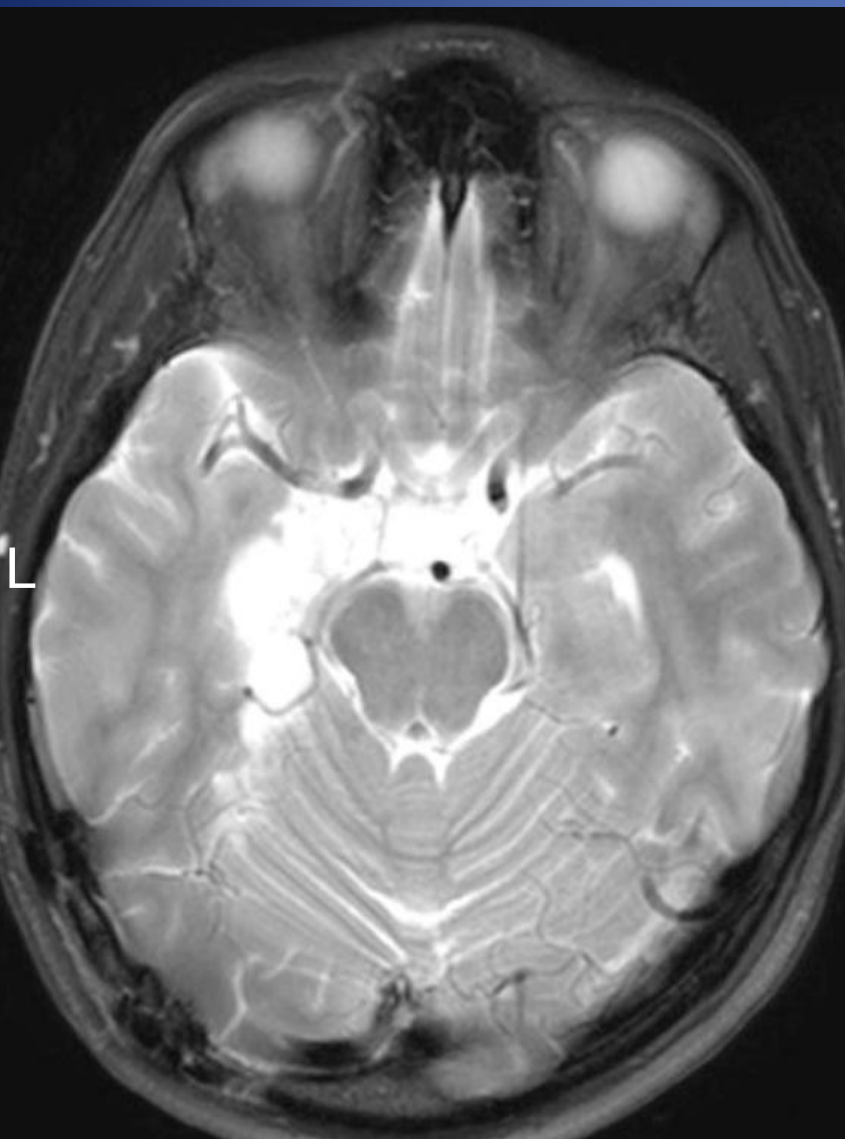
ZY, 24 y, F

- 17 years history of intractable seizures (3-4 times/week)
- LEV 3000 mg/d, LTG 400 mg/d, TPM 200 mg/d





ZY, 24 y, F











Bir Hekimin

Tababet Hakkında Düşünceleri

Yazan :

Profesör Dr. A. Bier

Berlin Üniversitesi Cerrahî
Kliniği Sabık Şefi

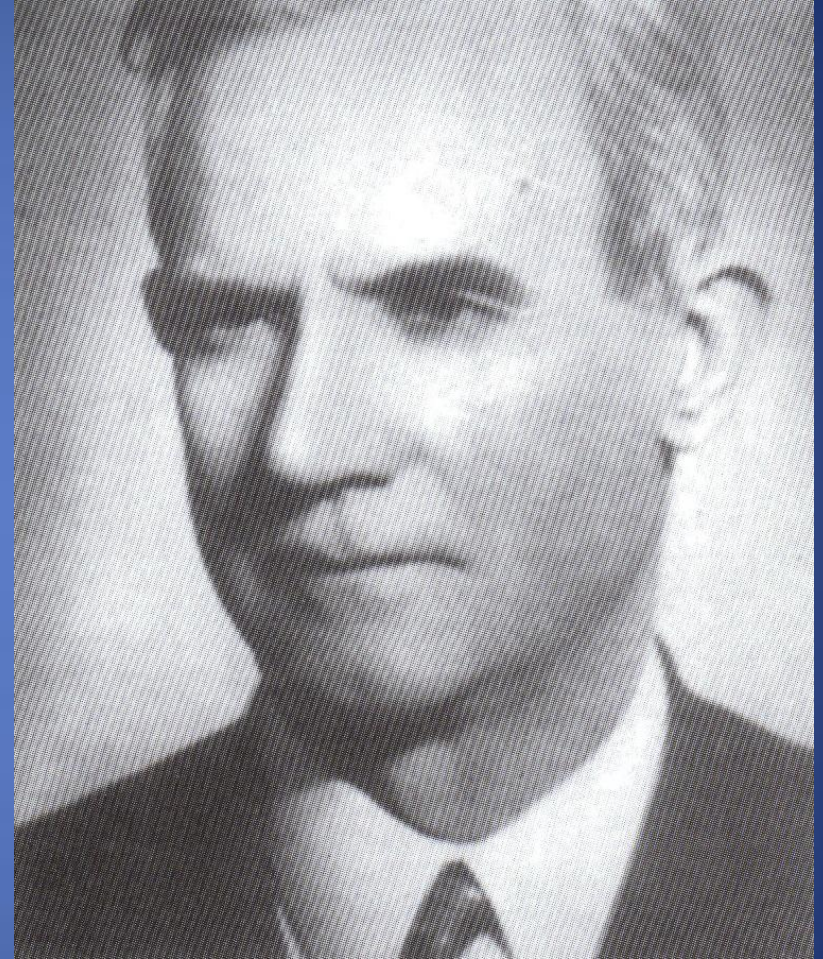
Tercüme eden :

Dr. Şükrü Yusuf

Ankara Nümune Hastanesi
Asabî Hastalıklar Metehassısı

1932

İdeal Matbaa — Ankara



Prof. Dr. Şükrü Yusuf SARIBAŞ



ERDEM YAŞARGİL
1950



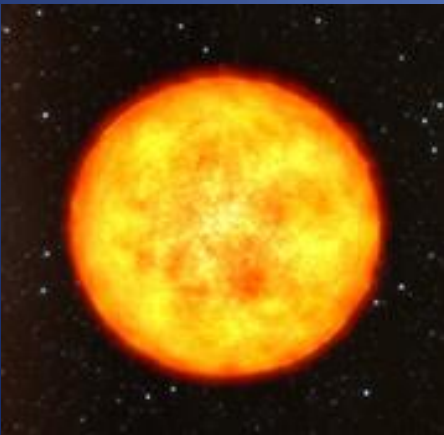
Her ne var ise Âlemde
Hepsi vardır Adem'de
Mevlânâ

- Alem büyük bir insan
- İnsan küçük bir alem
- Her insanda binlerce alem var.
- Bir günde sabahtan akşama kadar kızan, seven, haykıran, dehşet alan, gülen, ağlayan.....insan

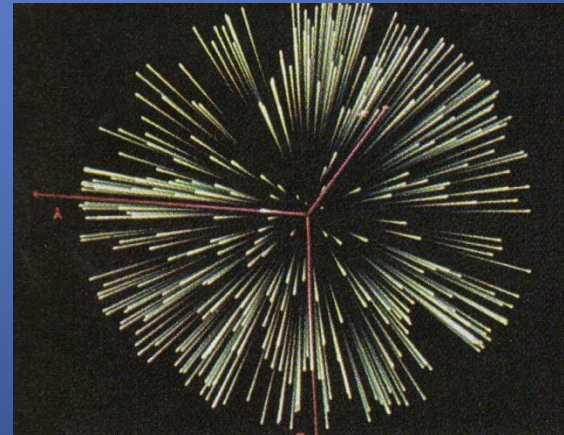
Daha iyi görmek, daha temelli bilgi yaratır.

Daha iyi bilgi de daha temelli görmeyi sağlar.

Göremediğimizi görmek
Görülmeeyeni görüntülemek
Bilinmeeyeni açıklamak



Oldest Star of
Cosmos HE
1523-0901
13.2 Billion Years



Electrical
activities of
Moto-neuron

Anthropocentric Concept

Metres

Size of the Universe

← → 10^{25}

Distance of nearest galaxy

Distance of galactic centre

← → 10^{20}

Distance to nearest star

← → 10^{15}

Distance to the Sun

← → 10^{10}

Radius of the Earth

← → 10^5

Man

← → 1

Living cell

← → 10^{-5}

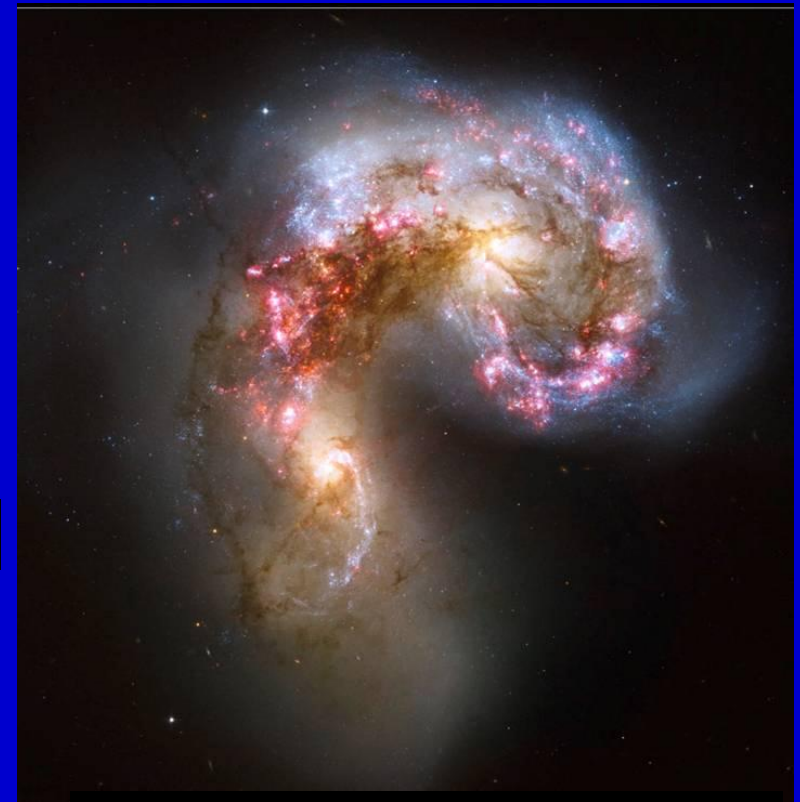
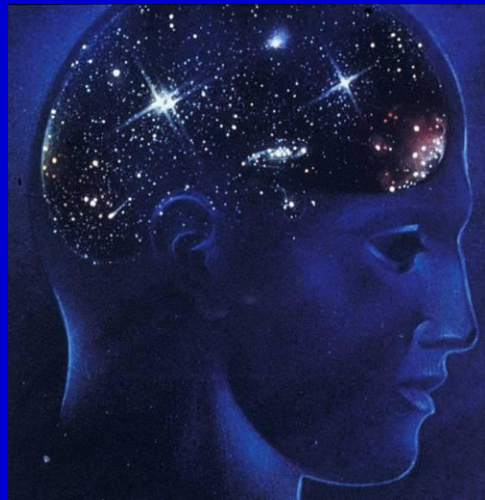
Molecule of DNA

Size of atoms

← → 10^{-10}

Size of protons

← → 10^{-15}



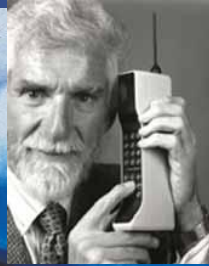
NGC 4038-4039 Antennae Galaxies



Proton – antiproton collusion

Actual Scientific Dynamics

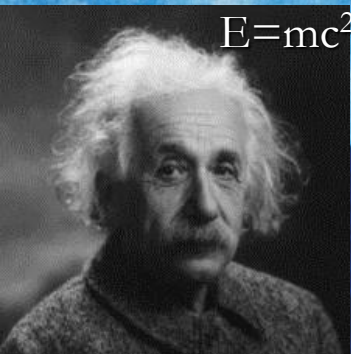
Martin Cooper
Cell Phone 1973



Tim Berners Lee
Hypertext 1980



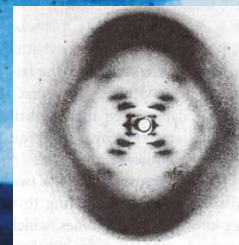
$$E=mc^2$$



Albert Einstein



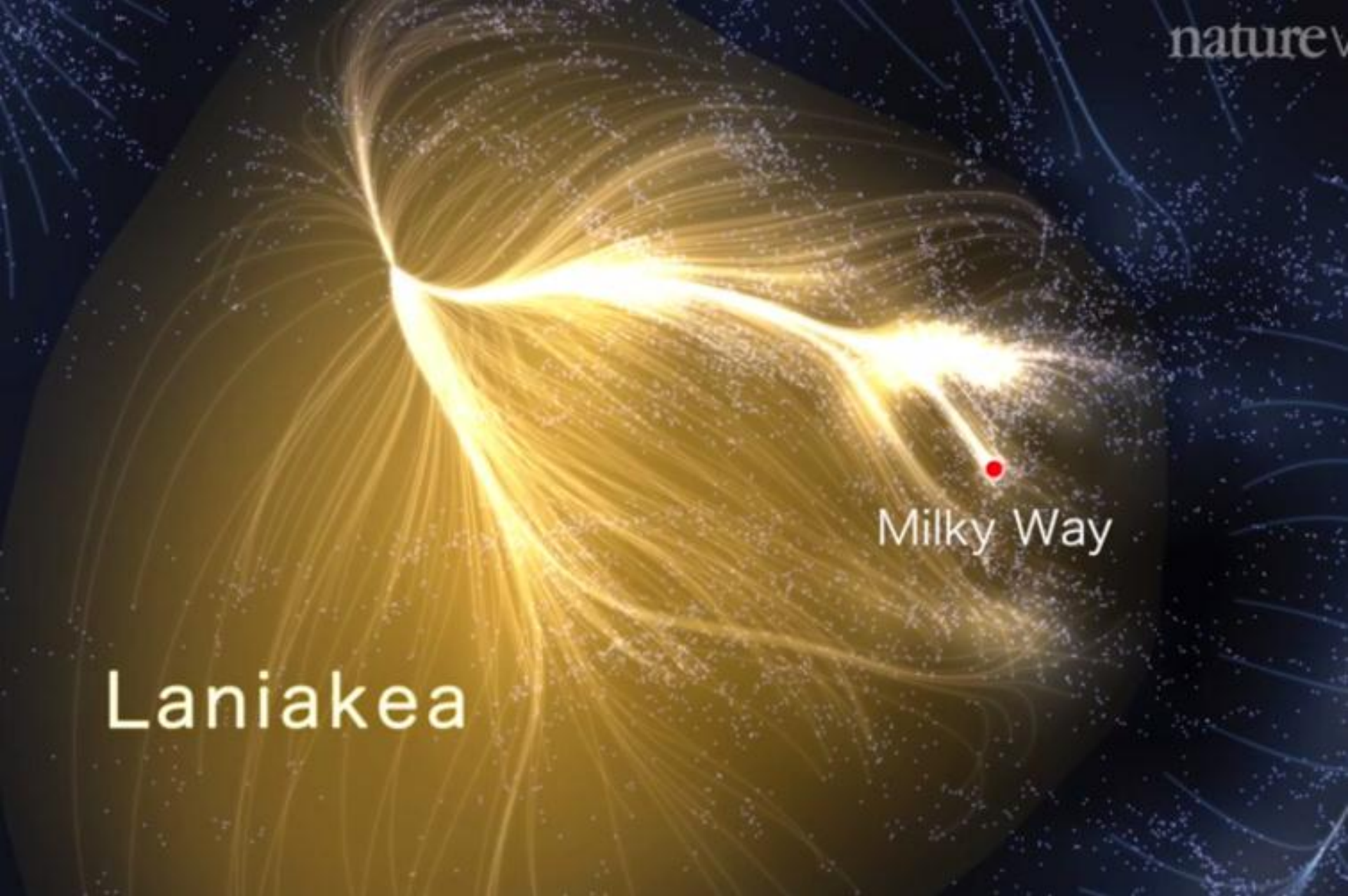
Rosaline Franklin
Francis Crick, James Watson 1953



X-ray
diffraction
photography
of DNA



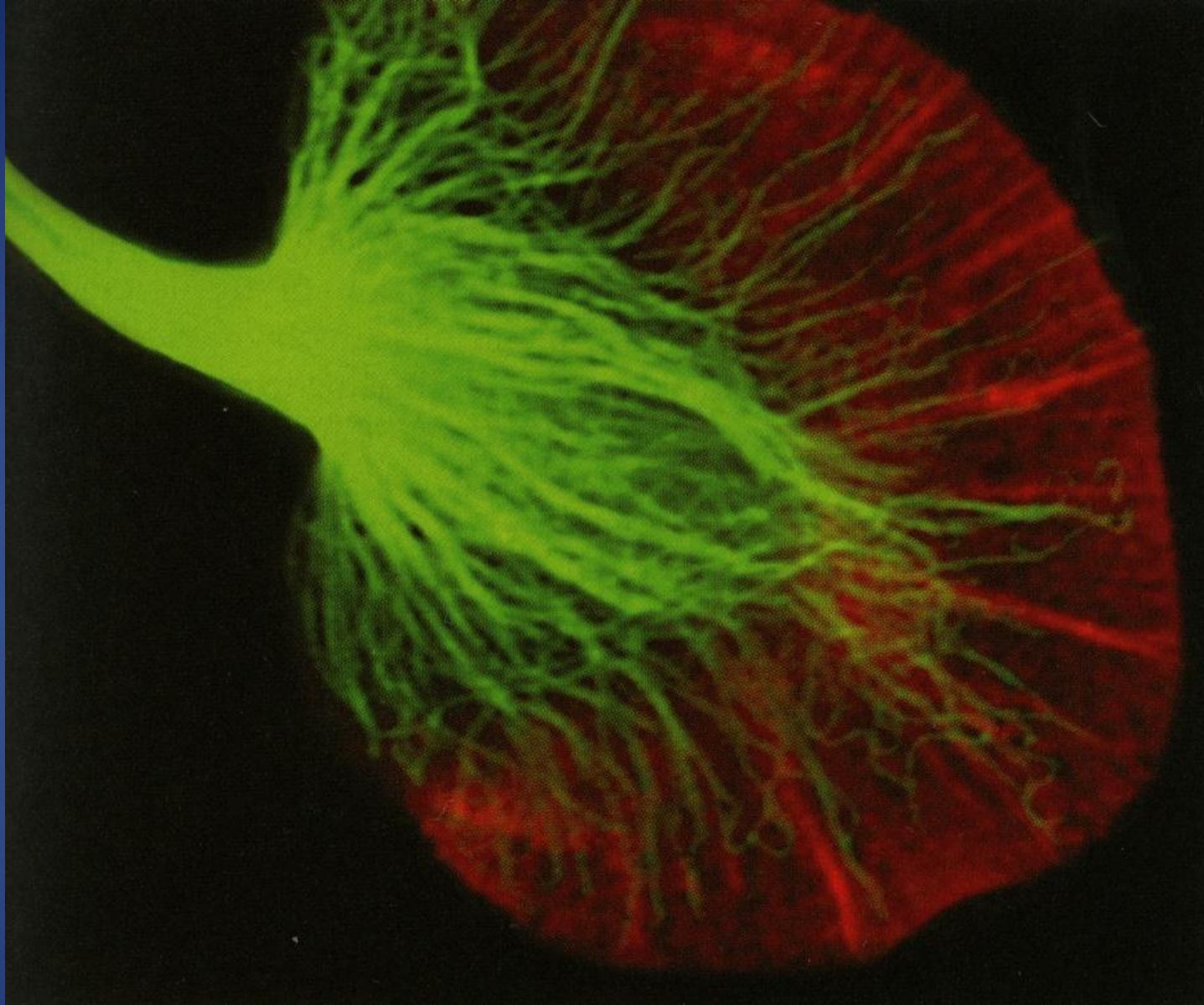
Edwin Hubble - 1990



Laniakea

Milky Way

Our Place in the Universe

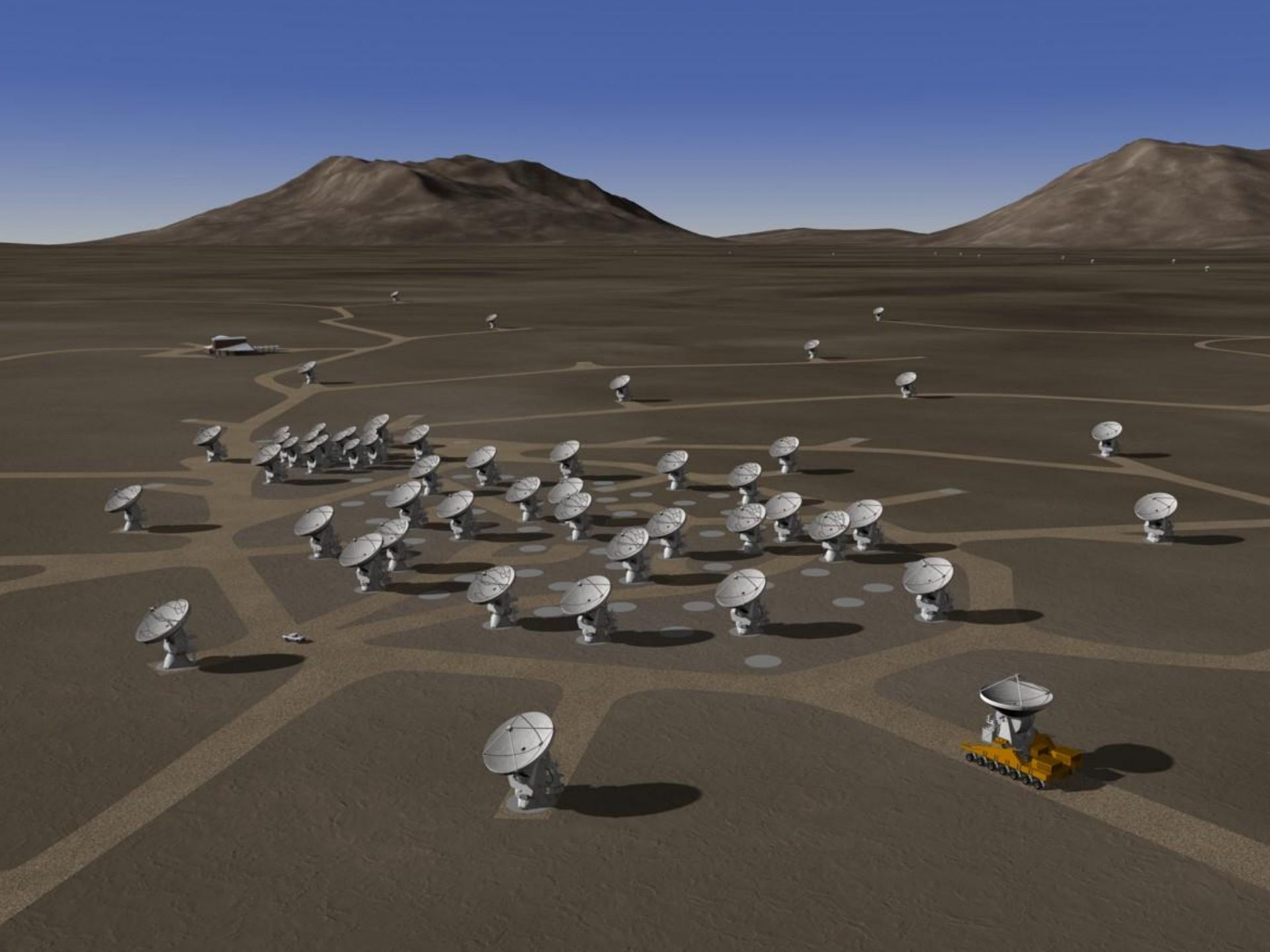


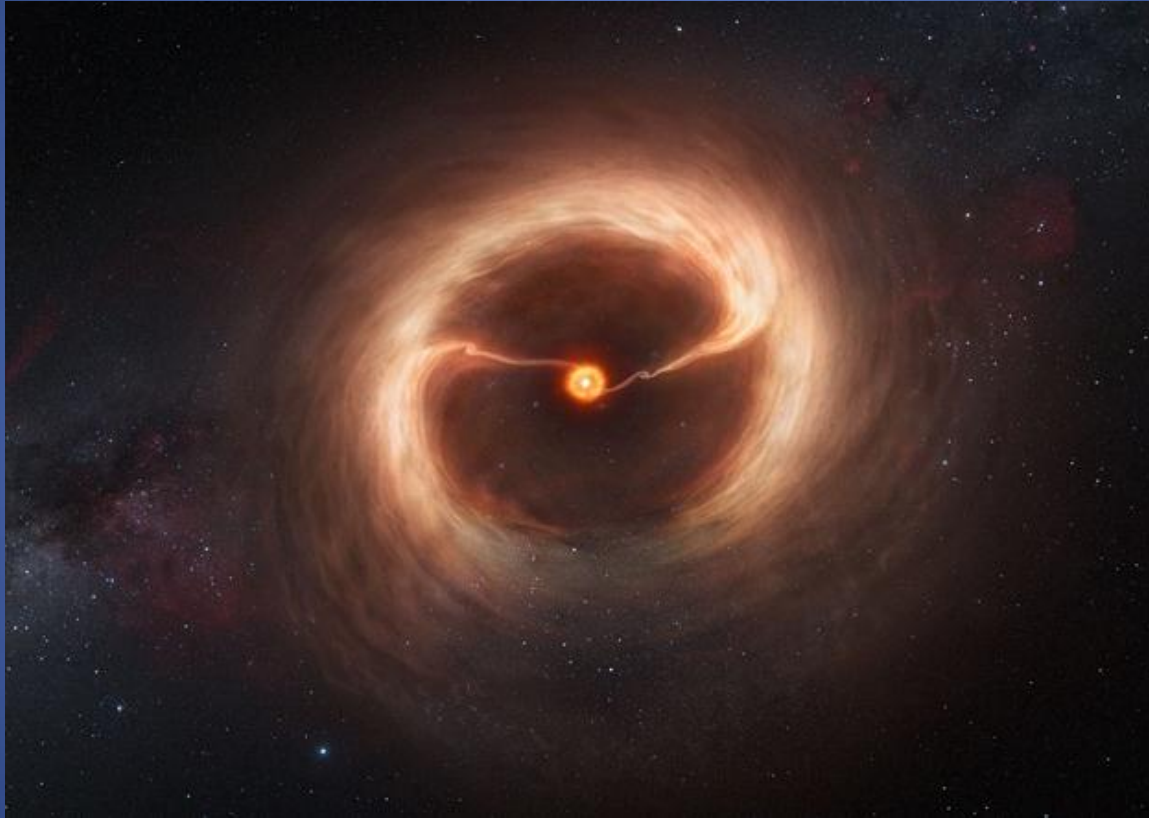
Aplysia Bag Cell Growth : Microtubules (green), Actin (red)

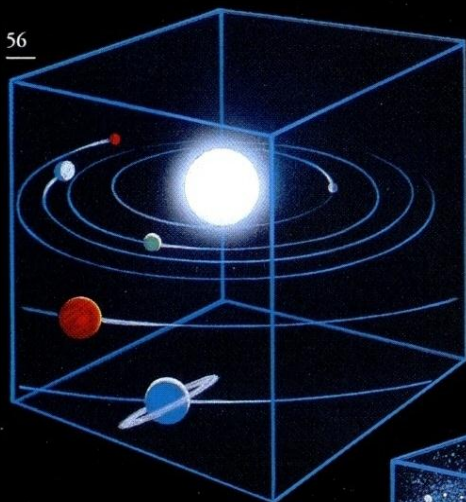
Sutter – Forscher 2004



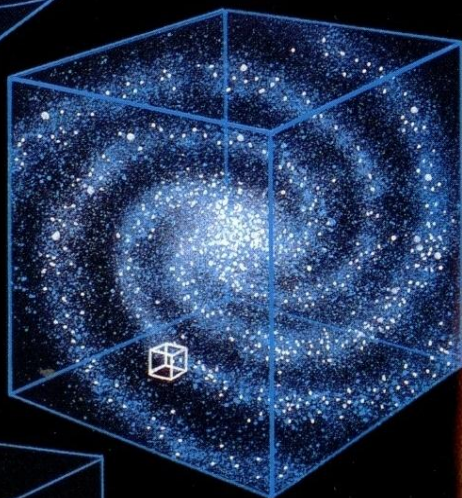
ATACAMA ALMA TELESCOPE



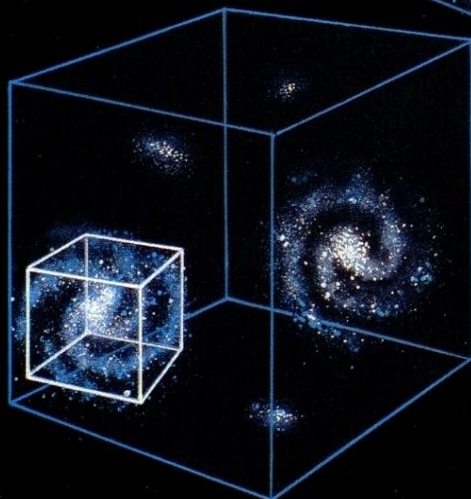




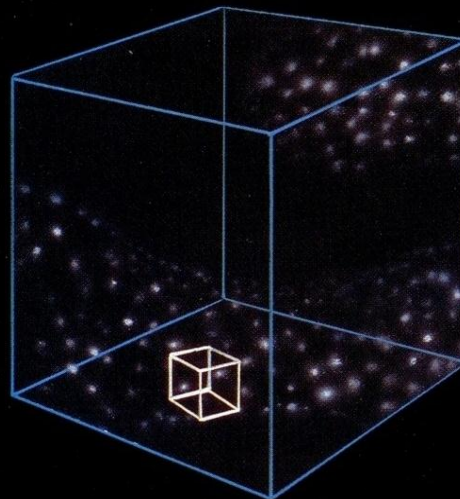
A



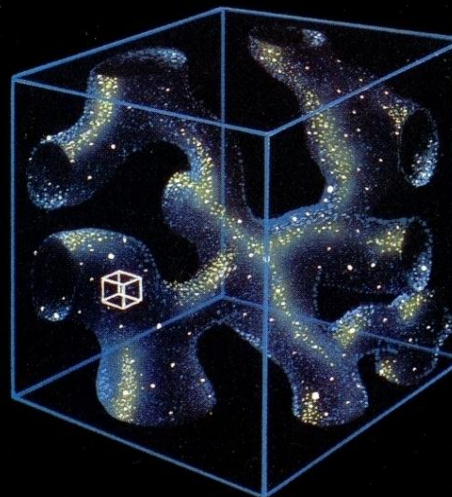
B



C



D

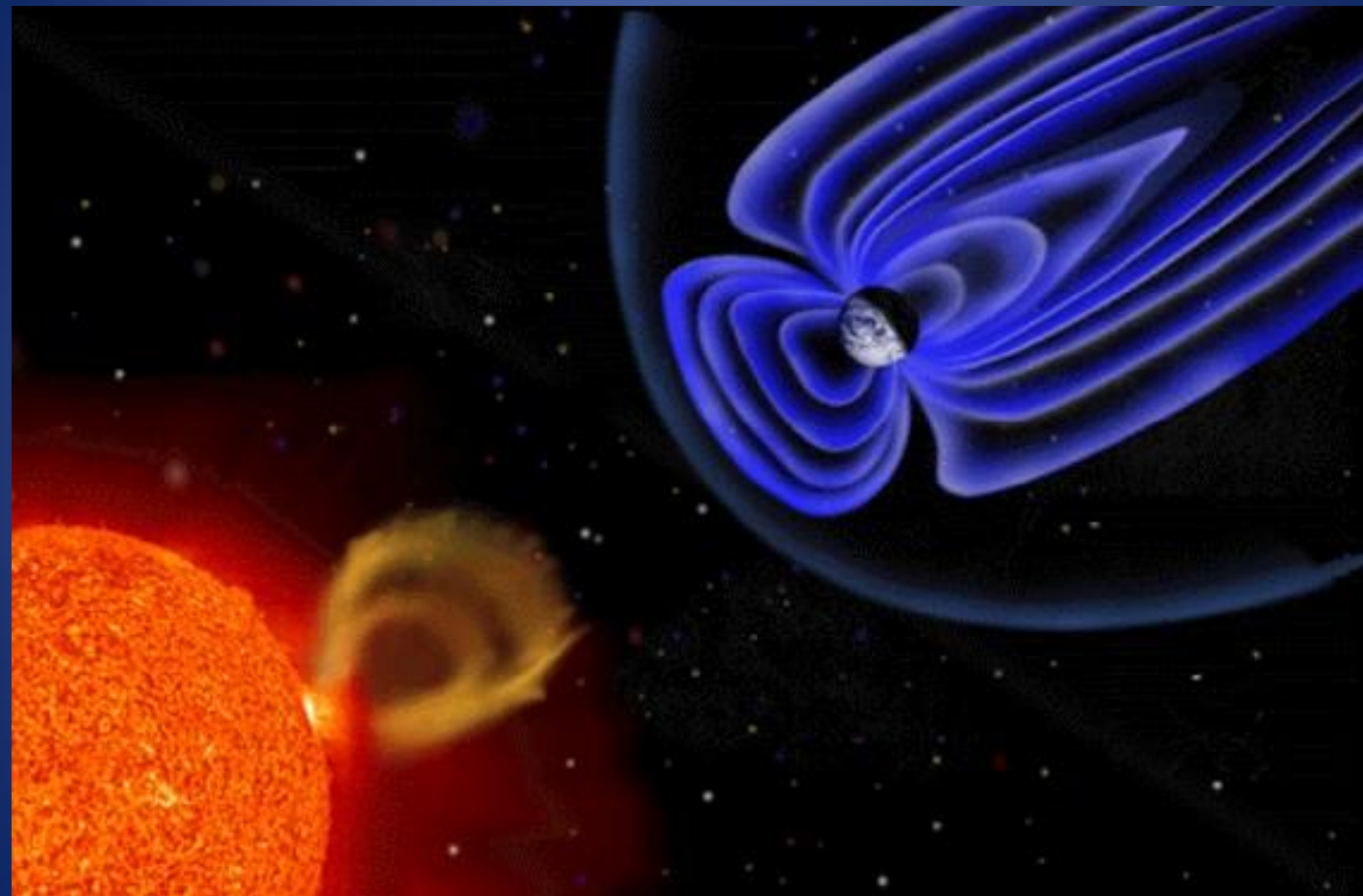


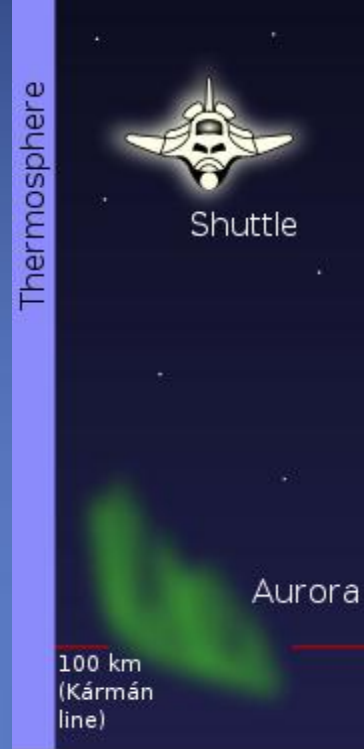
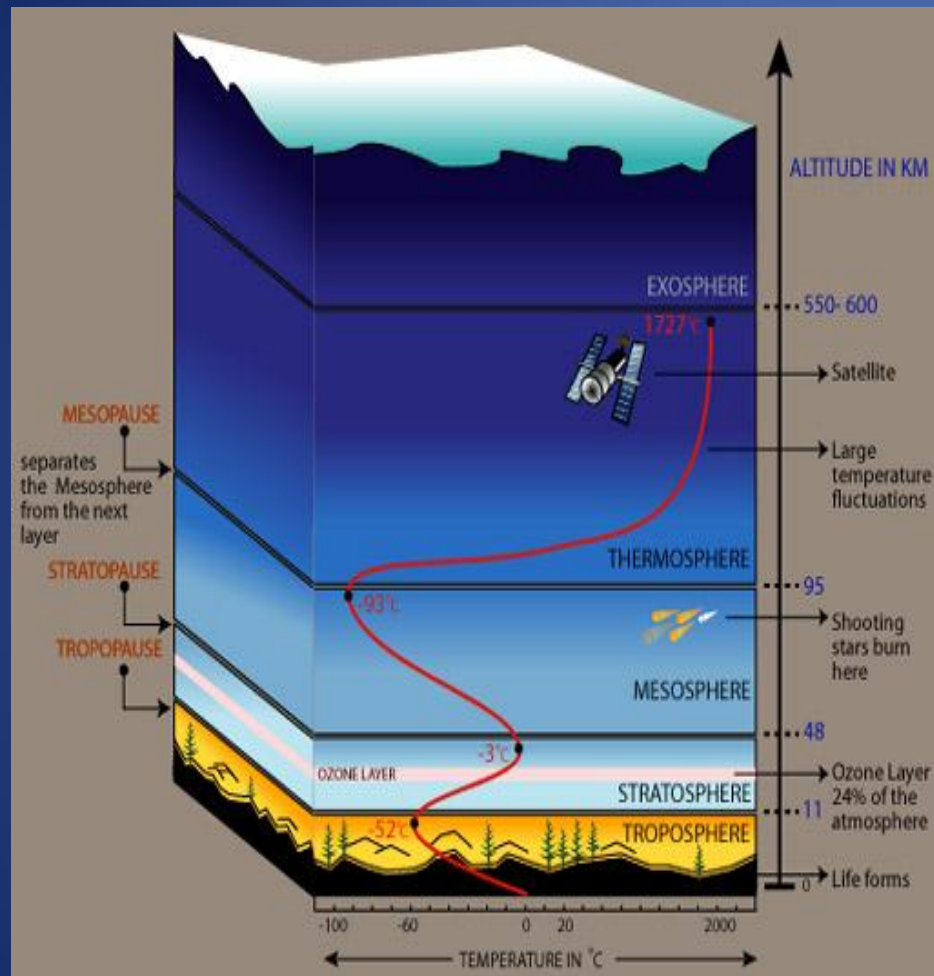
E

In-depth surveys of the universe show that the solar system to which our planet belongs plays but a tiny part in a stupendous cosmic ballet. Nestled in a solar system 10.4 light-hours in diameter, the earth whisks us through space at a speed of about 20 miles/second on its annual journey around the sun (A). The solar system orbits the galactic center at 145 miles/second (B). Our galaxy is edging toward its companion, Andromeda, at 55 miles/second; they are members of the Local Group, which is about 10 million light-years across (C). The Local Group, in turn, is streaking at 375 miles/second toward the Virgo cluster of galaxies in the Local Supercluster and the Hydra-Centaurus supercluster, which are spread some 60 million light-years across space (D). The ballet does not end there. The Virgo cluster and the Hydra-Centaurus supercluster are themselves being drawn toward another giant aggregation of galaxies astronomers refer to as the Great Attractor. These clusters and superclusters form unbelievably huge walls and filaments stretching hundreds of millions of light-years across space (E).



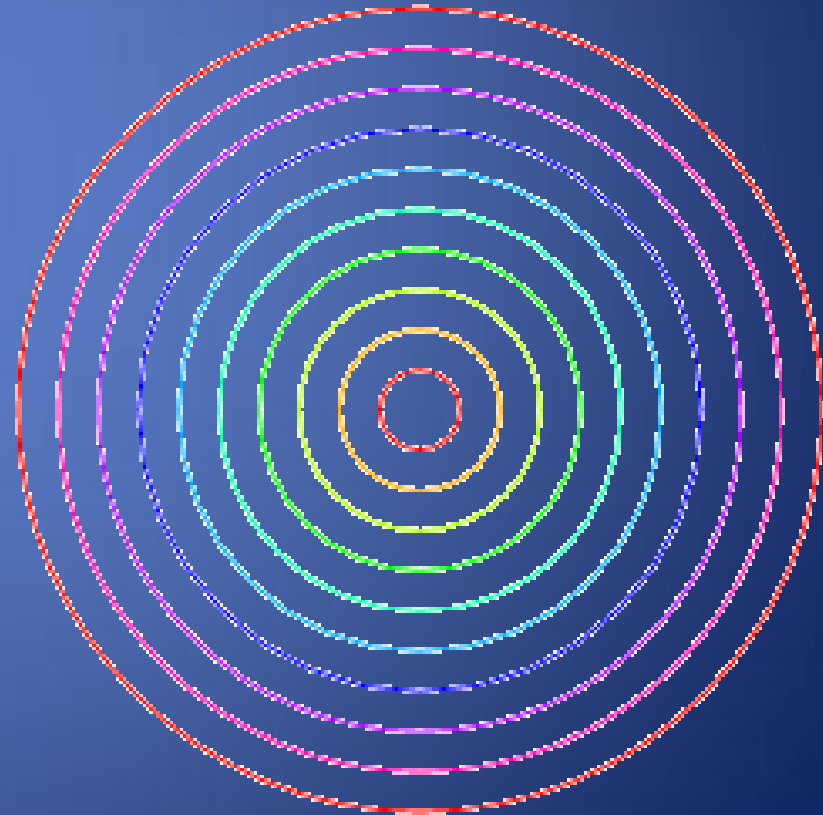
$H_{375,000,000}$ $O_{132,000,000}$ $C_{85,700,000}$ $N_{6,430,000}$ $Ca_{1,500,000}$
 $P_{1,020,000}$ $S_{206,000}$ $Na_{183,000}$ $K_{177,000}$ $Cl_{127,000}$ $Mg_{40,000}$ $Si_{38,600}$
 $Fe_{2,680}$ $Zn_{2,110}$ Cu_{76} I_{14} Mn_{13} F_{13} Cr_7 Se_4 Mo_3 Co_1





NETWORK of SPHERES

- COSMIC-
- GALAXIC- } SPHERES
- OUR GALAXIC-
- HELIO- SPHERE
- GEO- SPHERE
- ATHMO-SPHERES
- TECHNO - SPHERES
- BIO- SPHERES
- SOCIO-SPHERES
- INDIVIDUAL- SPHERES







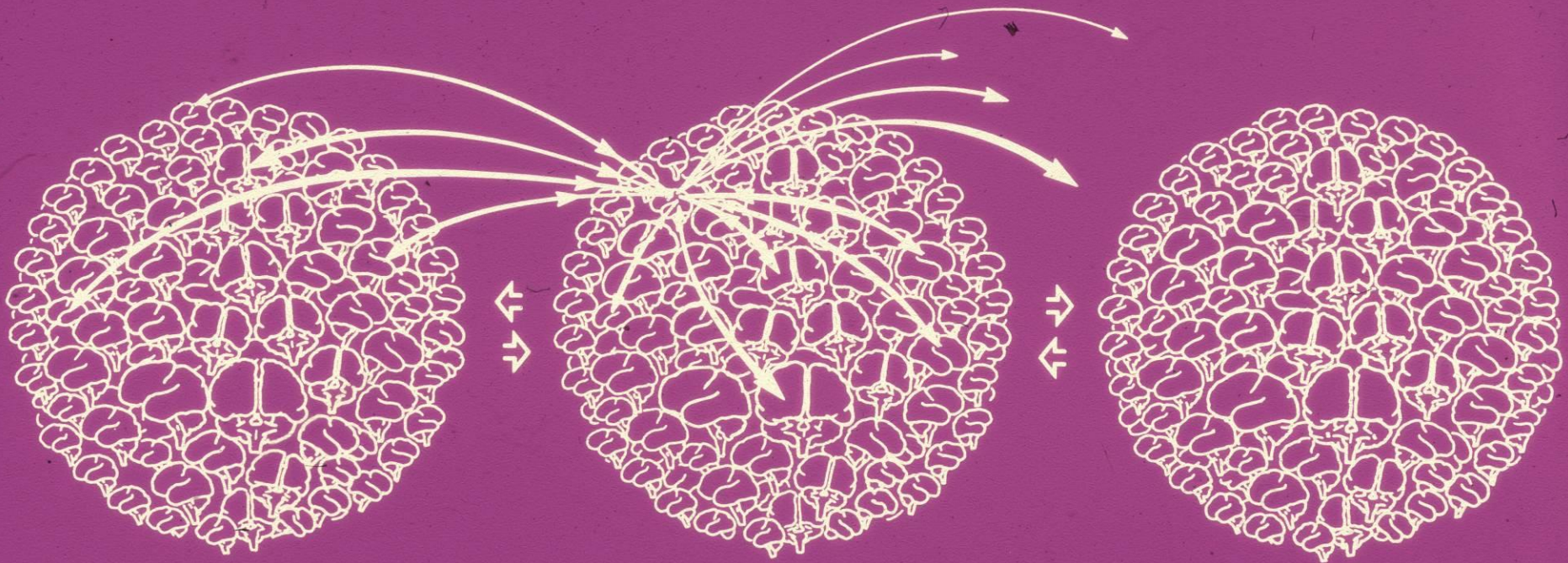
KİM DÜŞÜNEBİLİRDİ Kİ
DÜŞÜNDÜĞÜM HALDE
BEN YOKUM !.....



PAST

PRESENT

FUTURE



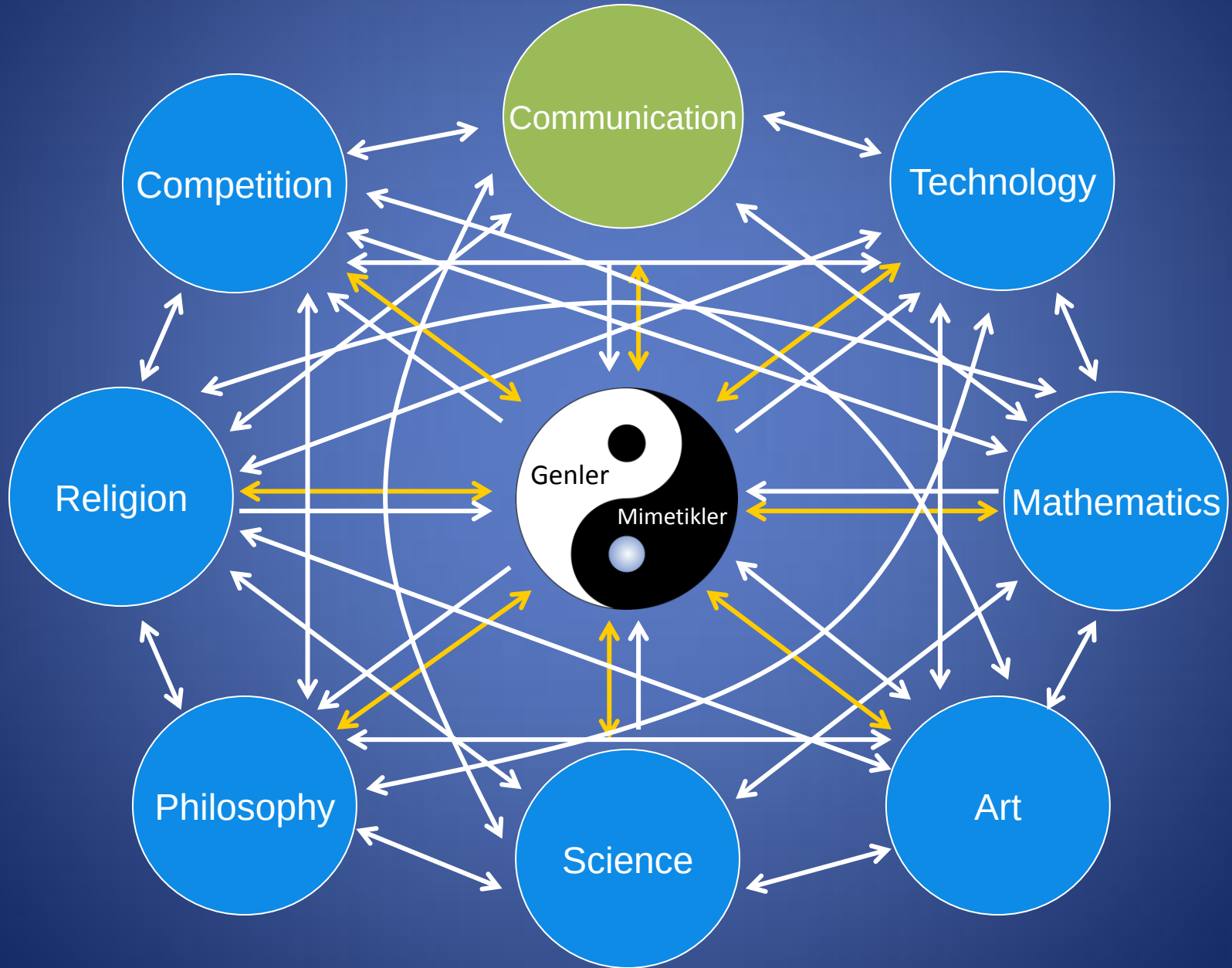
Temp - ora

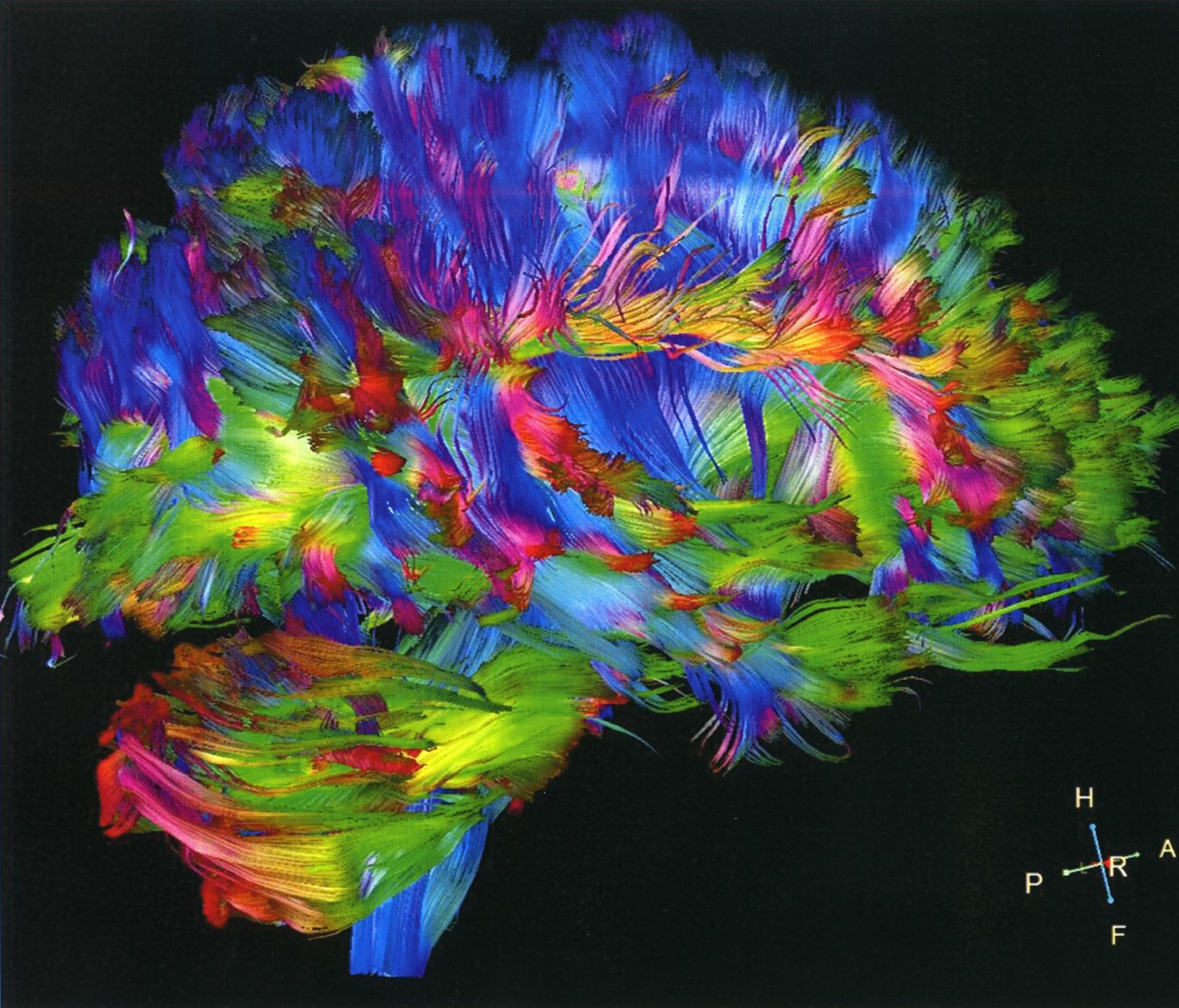
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WISDOM OF

TOPLUM, GRUPLAR ve BİREYLERİN KÜLTÜREL KATKILARI





Zeynep Fırat
Nöroradiol.
Y.T.Ü.H.
İstanbul

Laboratory Training for the Microneurosurgery

1. Cranio-spinal Bones: High speed drilling
2. Cranio-spinal Meninges: Dissection – Suturing
Dura – Arachnoidea – Pia
Cisternal compartments
3. Cranio-spinal Vasculature: Dissection - Suturing
Arteries – Veins – Venous Sinuses
4. CNS Parenchym: Dissection
Gyri – Sulci , Cortices
White Matter – Fiber System
Nuclei and their connections
5. Ventricle System
6. Cranial and Peripheral Nerves: Dissection and Suturing
7. Adaptation to the segmental and compartmental concept
8. Cranio-spinal Surgical Approaches

Emergency



Acut



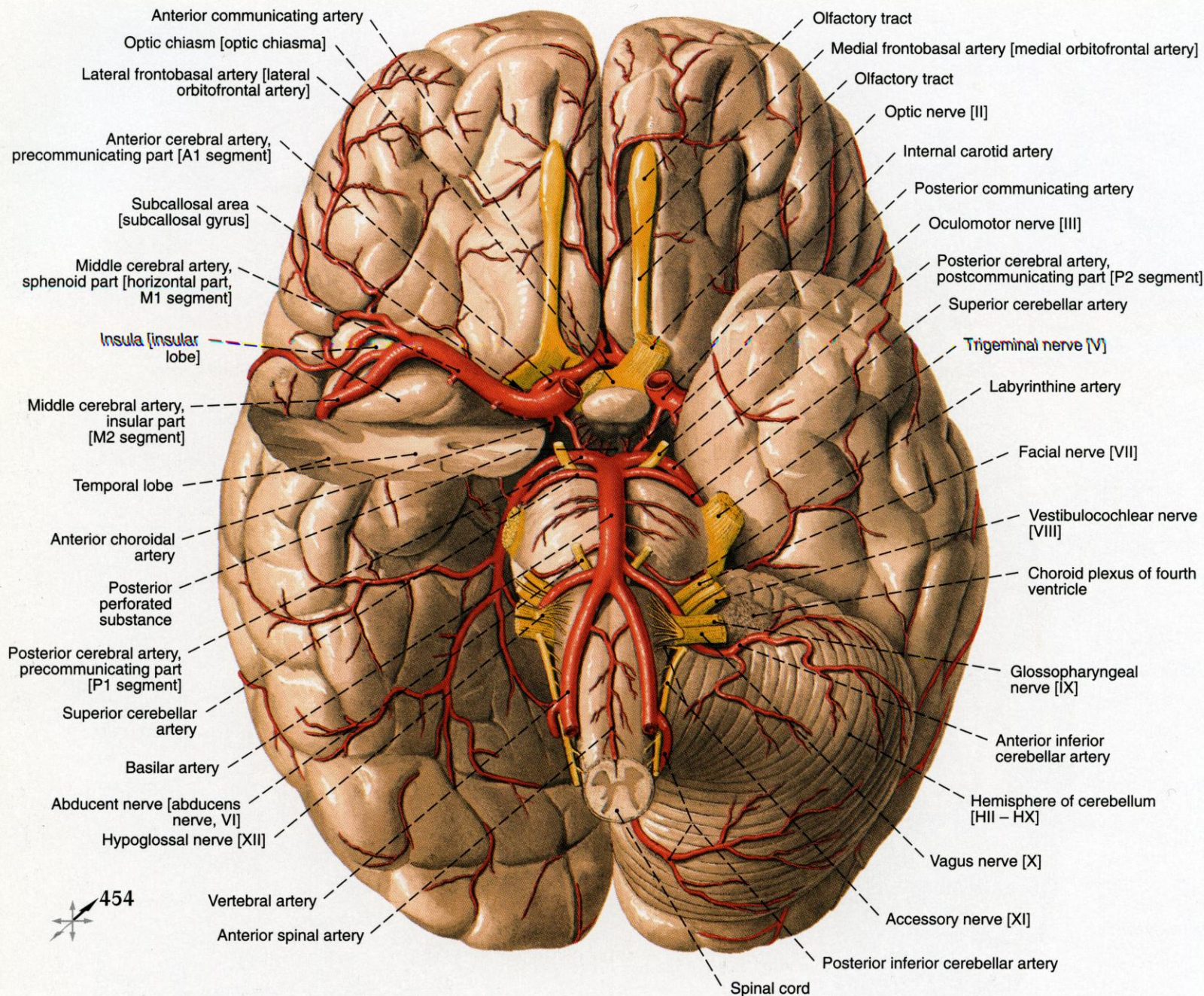
Subacut

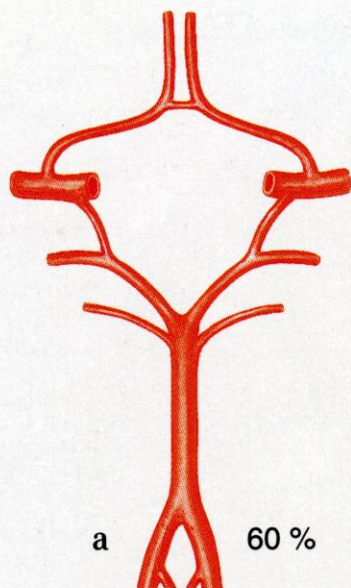


Chronic

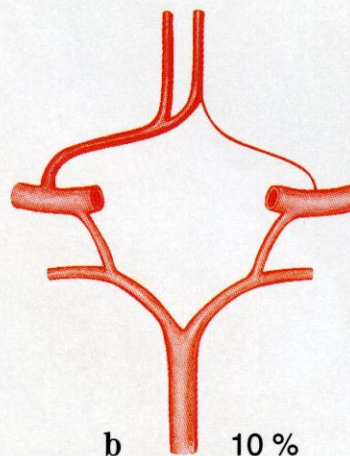
Meningioma



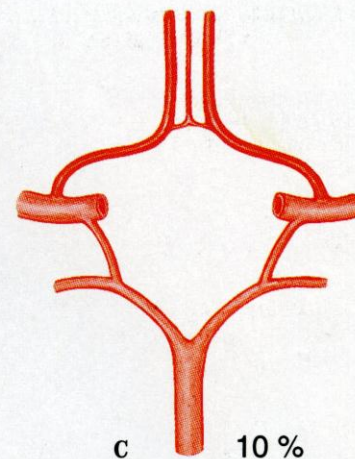




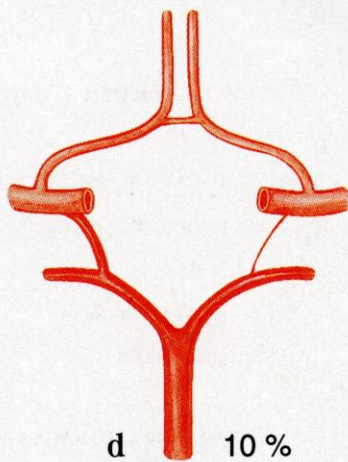
a 60 %



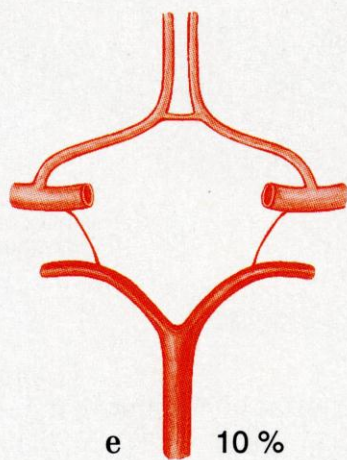
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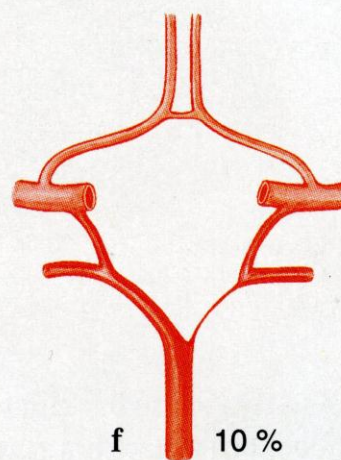
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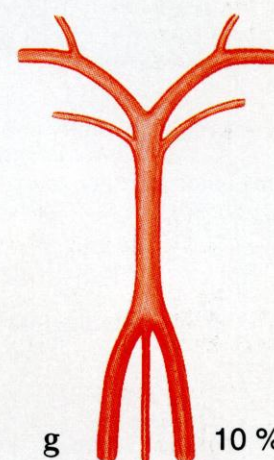
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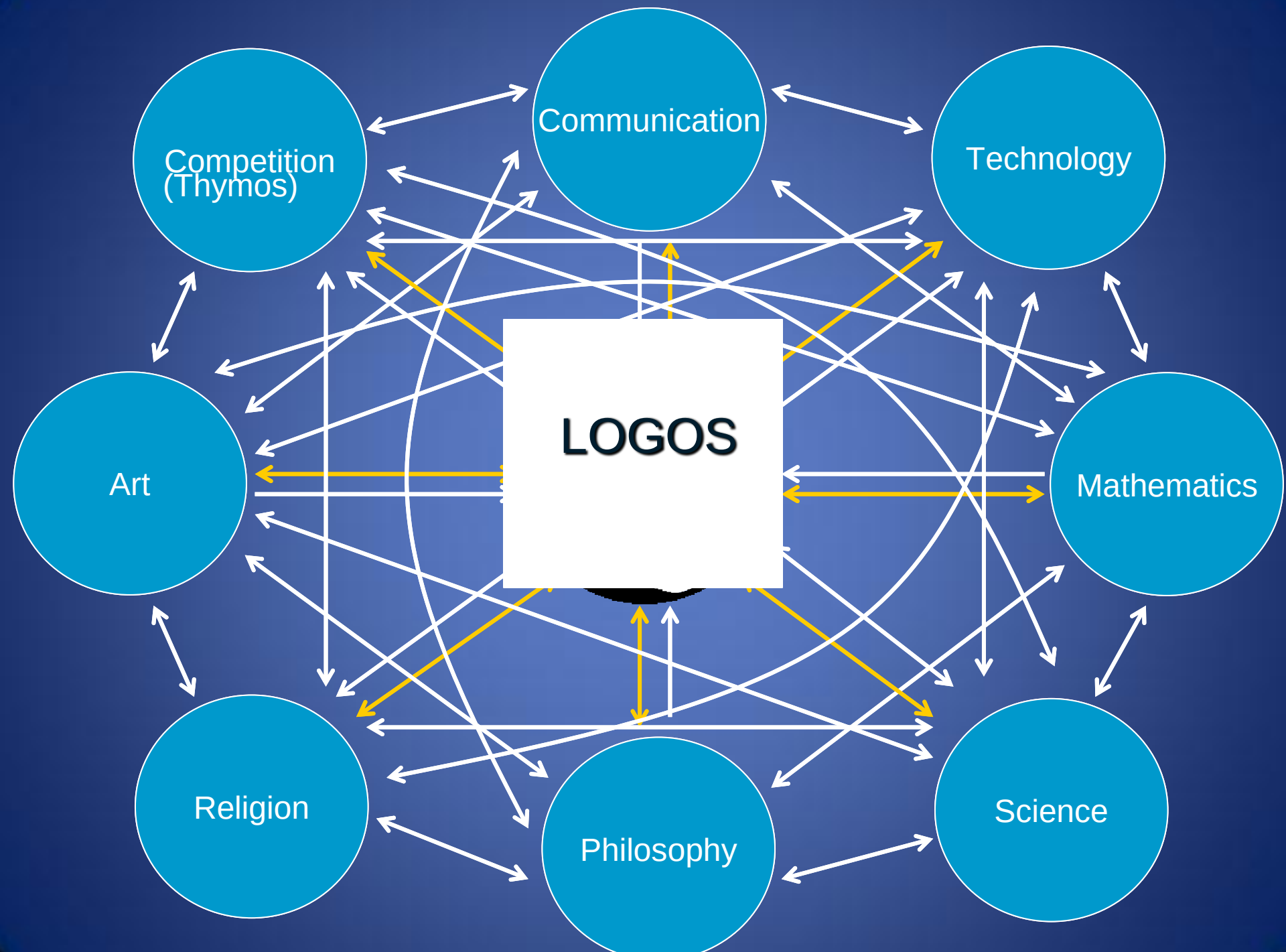
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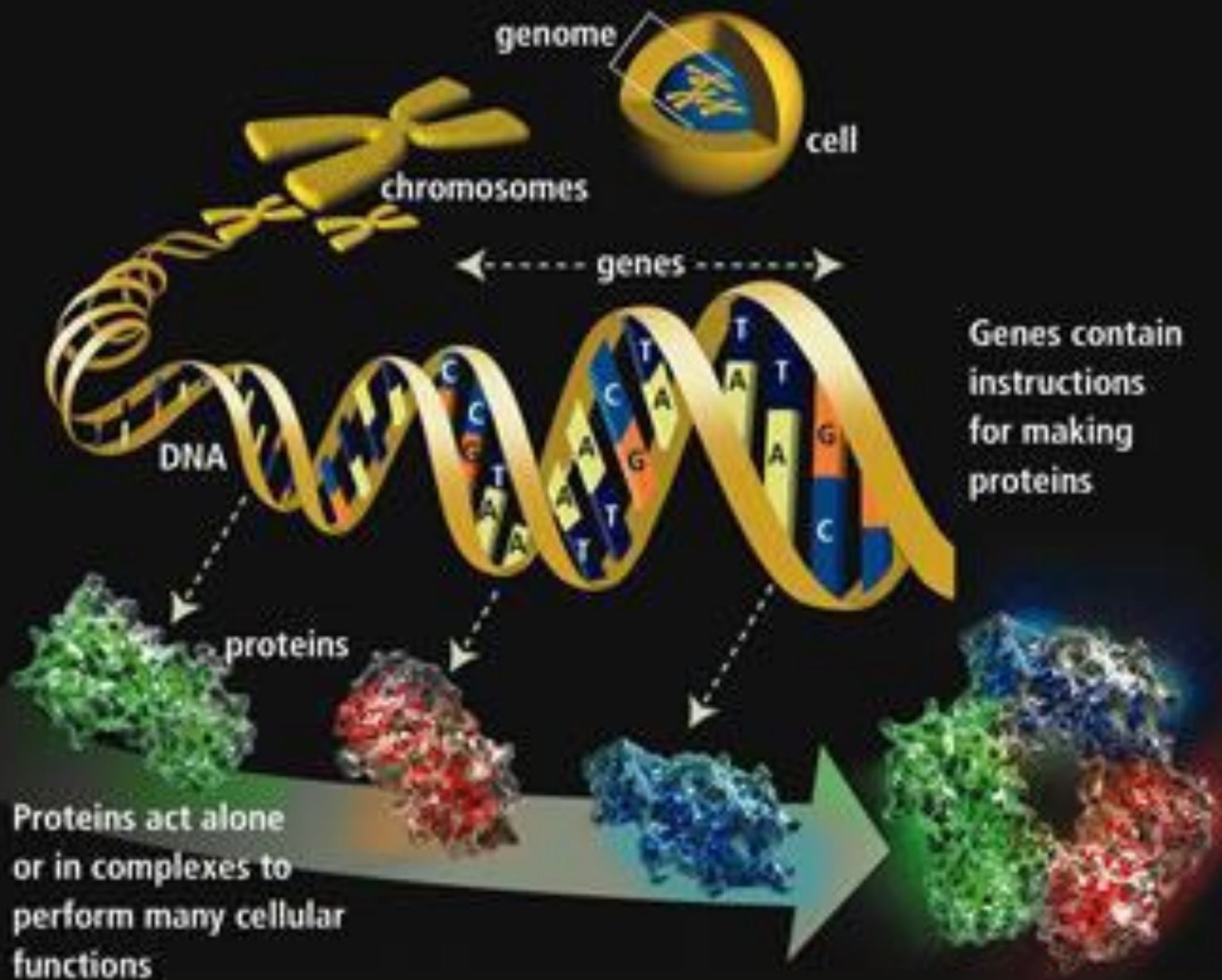


f 10 %



g 10 %







only
cerebral
white
matter