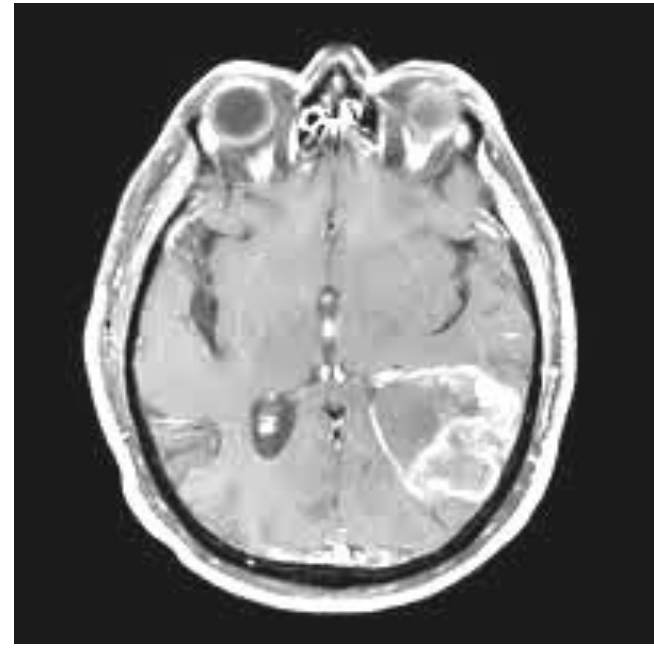
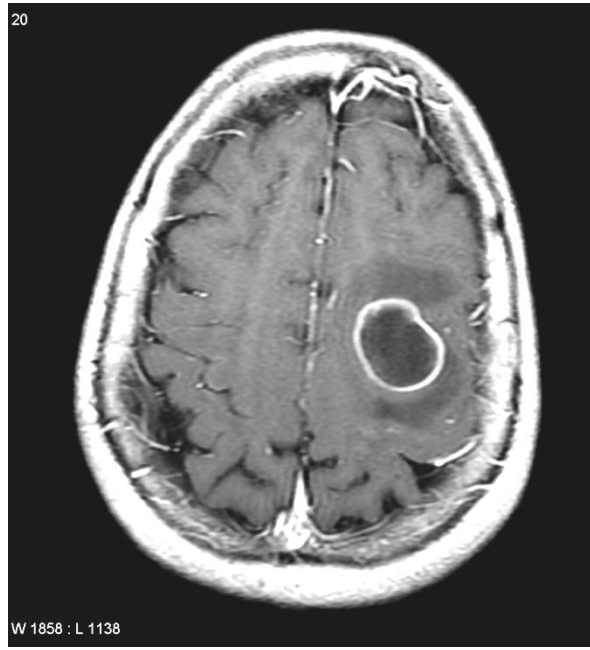
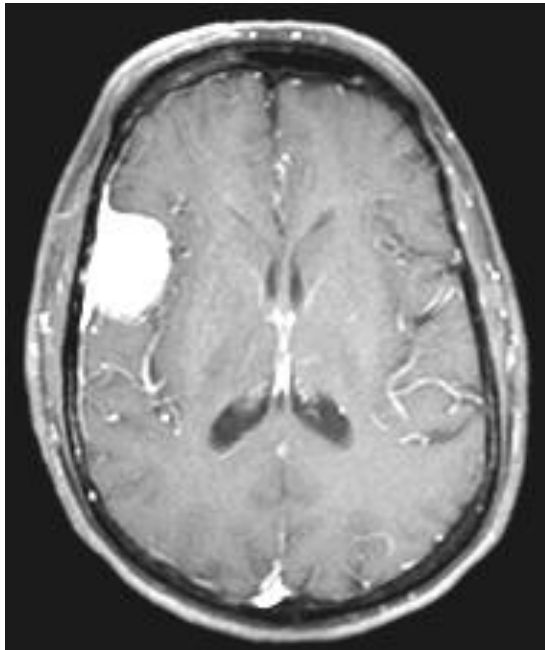


Neuro Exam

- General: vitals & appearance
- Consciousness, orientation, Cognition
- Memory
- Speech
- Meningeal Irritation
- Cranial Nerves
- Motor (Power, Tone, Reflexes)
- Sensory
- Cerebellar examination
- Gait

Brain Tumors



Key Points

- Increased ICP (signs/symptoms/treatment)
- CT & MRI 101
- Most common brain tumors
- Treatment Options
- Do you want to be a neurosurgeon!

TUMOURS OF NEUROEPITHELIAL TISSUE

Astrocytic tumours

Pilocytic astrocytoma
Piloxyoid astrocytoma
Subependymal giant cell astrocytoma
Pleomorphic xanthoastrocytoma
Diffuse astrocytoma
Fibrillary astrocytoma
Gemistocytic astrocytoma
Protoplasmic astrocytoma
Anaplastic astrocytoma
Glioblastoma
Giant cell glioblastoma
Gliosarcoma
Gliomatosis cerebri

Oligodendroglial tumours

Oligodendroglioma
Anaplastic oligodendroglioma

Oligoastrocytic tumours

Oligoastrocytoma
Anaplastic oligoastrocytoma

Ependymal tumours

Subependymoma
Myxopapillary ependymoma
Ependymoma
Cellular
Papillary
Clear cell
Tanycytic
Anaplastic ependymoma

Choroid plexus tumours

Choroid plexus papilloma
Atypical choroid plexus papilloma
Choroid plexus carcinoma

Other neuroepithelial tumours

Astroblastoma
Chordoid glioma of the third ventricle
Angiocentric glioma

Neuronal and mixed neuronal-glioma tumours

Dysplastic gangliocytoma of cerebellum
(Lhermitte-Duclos)
Desmoplastic infantile astrocytoma/
ganglioglioma
Dysembryoplastic neuroepithelial tumour
Gangliocytoma
Ganglioglioma
Anaplastic ganglioglioma
Central neurocytoma
Extraventricular neurocytoma
Cerebellar liponeurocytoma
Papillary glioneuronal tumour
Rosette-forming glioneuronal tumour
of the fourth ventricle
Paranglioma

Tumours of the pineal region

Pineocytoma
Pineal parenchymal tumour of
intermediate differentiation
Pineoblastoma
Papillary tumour of the pineal region

Embryonal tumours

Medulloblastoma
Desmoplastic/nodular medulloblastoma
Medulloblastoma with extensive
nodularity
Anaplastic medulloblastoma
Large cell medulloblastoma
CNS primitive neuroectodermal tumour
CNS Neuroblastoma
CNS Ganglioneuroblastoma
Medulloepithelioma
Ependymblastoma
Atypical teratoid / rhabdoid tumour

TUMOURS OF CRANIAL AND PARASPINAL NERVES

Schwannoma (neurilemoma, neurinoma)
Cellular
Plexiform
Melanotic

Neurofibroma
Plexiform

Perineurioma
Perineurioma, NOS
Malignant perineurioma

Malignant peripheral
nerve sheath tumour (MPNST)
Epithelioid MPNST
MPNST with mesenchymal differentiation
Melanotic MPNST
MPNST with glandular differentiation

TUMOURS OF THE MENINGES

Tumours of meningeothelial cells

Meningioma
Meningothelial
Fibrous (fibroblastic)
Transitional (mixed)
Psammomatous
Angiomatous
Microcystic
Secretory
Lymphoplasmacyte-rich
Metaplastic
Chordoid
Clear cell
Atypical
Papillary
Rhabdoid
Anaplastic (malignant)

Mesenchymal tumours

Lipoma
Angiolipoma
Hibernoma
Liposarcoma
Solitary fibrous tumour
Fibrosarcoma
Malignant fibrous histiocytoma
Leiomyoma
Leiomyosarcoma
Rhabdomyoma
Rhabdomyosarcoma
Chondroma
Chondrosarcoma
Osteoma
Osteosarcoma
Osteochondroma
Haemangioma
Epithelioid haemangioendothelioma

Haemangiopericytoma
Anaplastic haemangiopericytoma
Angiosarcoma
Kaposi sarcoma
Ewing sarcoma - PNET

Primary melanocytic lesions

Diffuse melanocytosis
Melanocytoma
Malignant melanoma
Meningeal melanomatosis

Other neoplasms related to the meninges

Haemangioblastoma

LYMPHOMAS AND HAEMATOPOIETIC NEOPLASMS

Malignant lymphomas
Plasmacytoma
Granulocytic sarcoma

GERM CELL TUMOURS

Germinoma
Embryonal carcinoma
Yolk sac tumour
Choriocarcinoma
Teratoma
Mature
Immature
Teratoma with malignant transformation
Mixed germ cell tumour

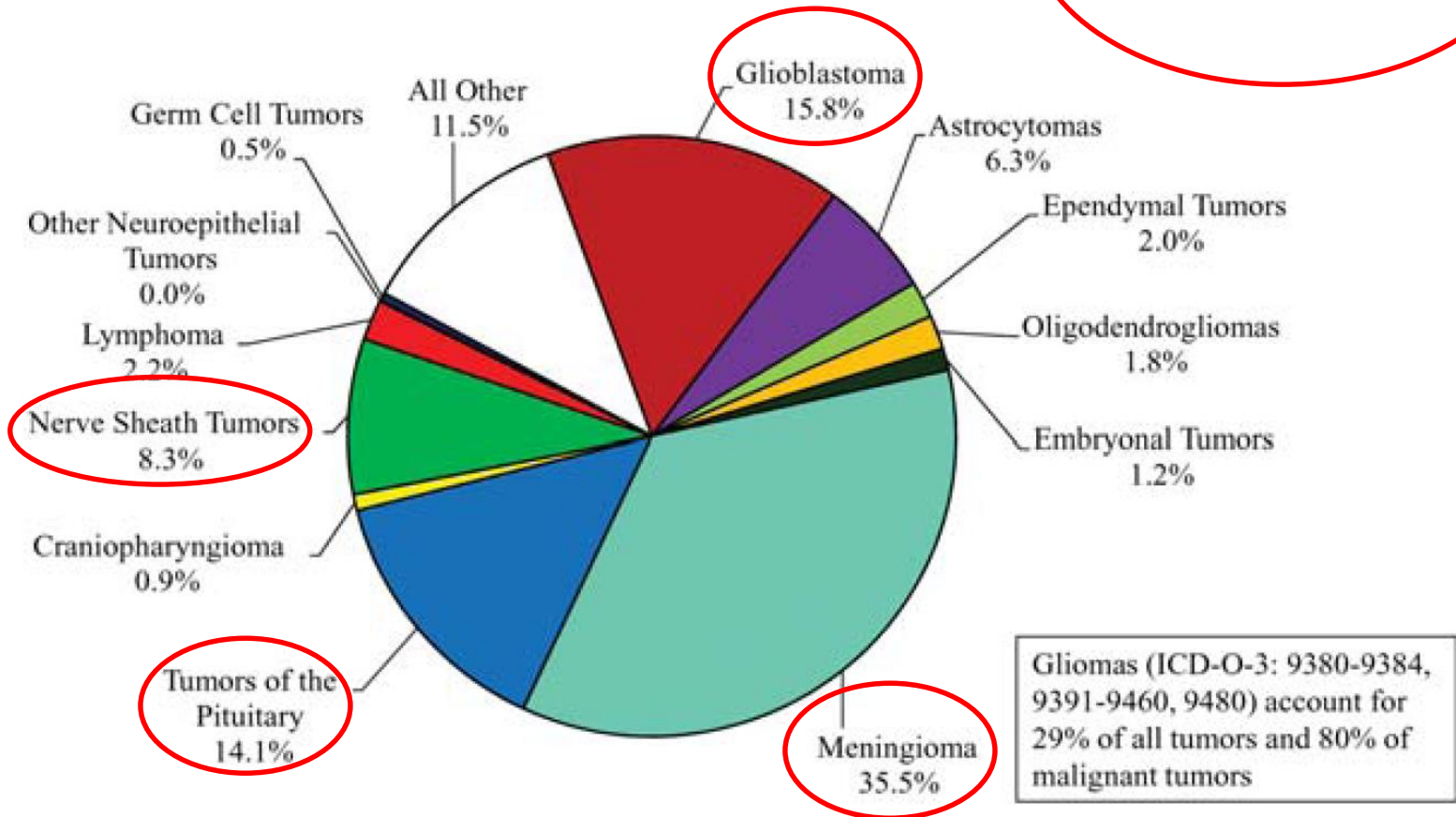
TUMOURS OF THE SELLAR REGION

Craniopharyngioma
Adamantinomatous
Papillary
Granular cell tumour
Pituicytoma
Spindle cell oncocytoma
of the adenohypophysis

METASTATIC TUMOURS

Metastasis

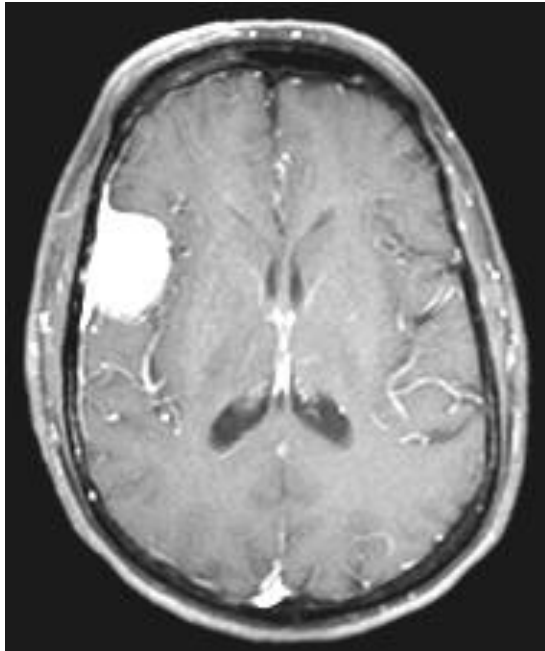
1ry



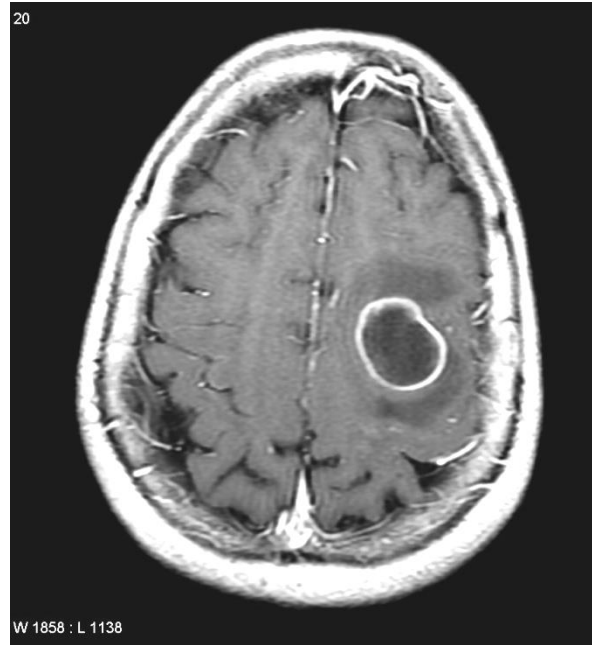
CBTRUS Statistical Report

Radiology

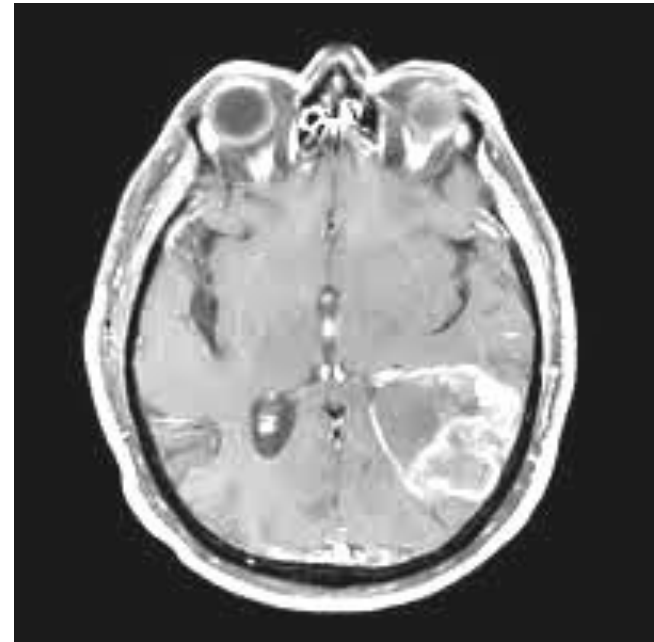
Meningioma



Metastasis



Glioma

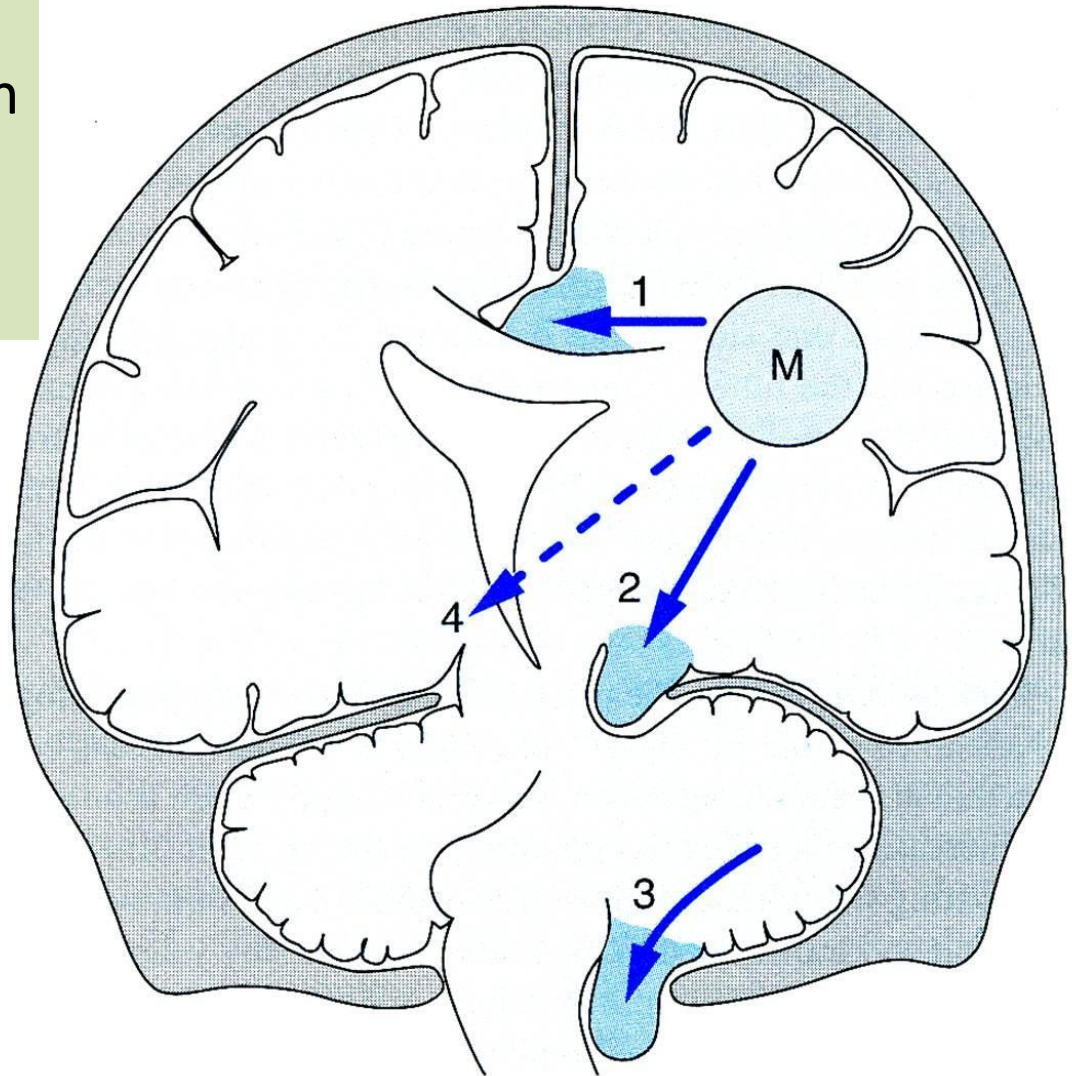


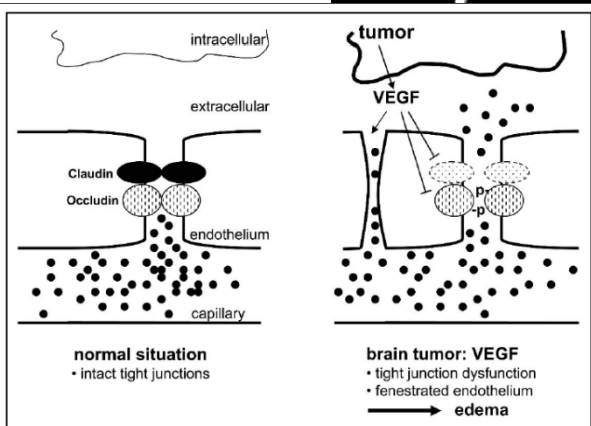
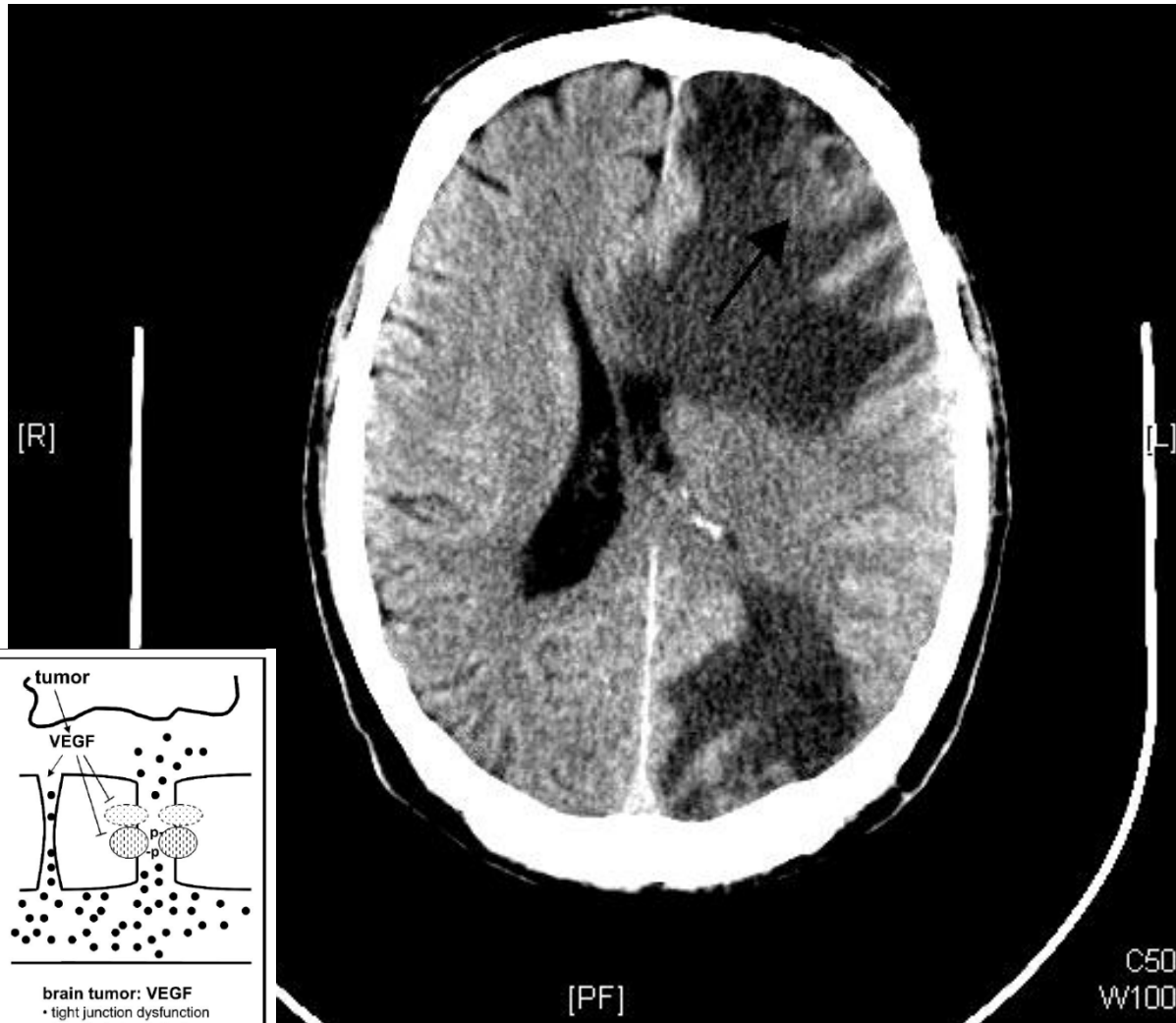
3

1- Local compression

2- Mass effect & Herniation

3- High ICP





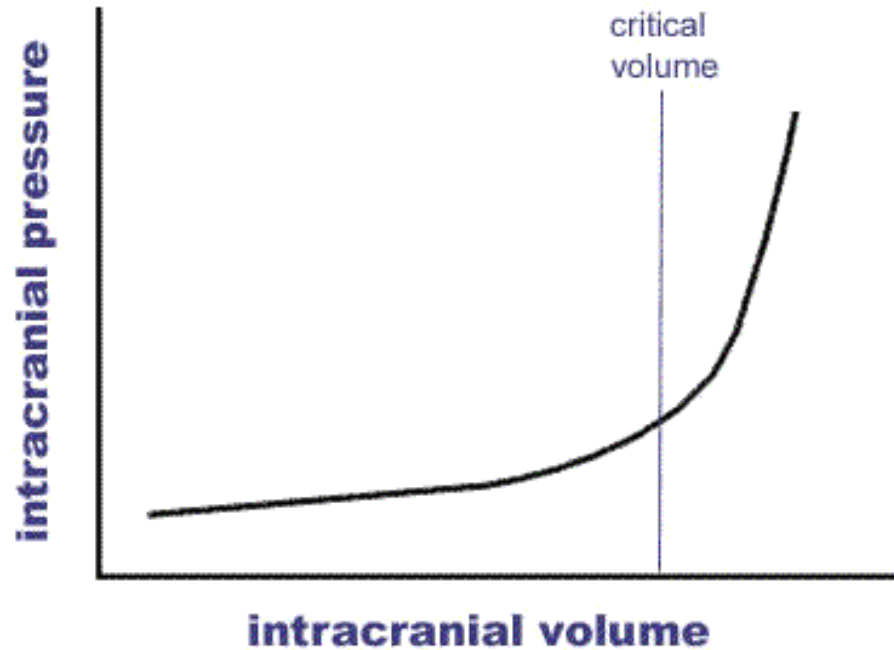
The management of brain edema in brain tumors

Evert C.A. Kaal and Charles J. Veitch

Current Opinion In Oncology 2004, 16:593-600

1/7/2020

<http://pzwvl.be/upload/fckeditor/file/De%20Mantel/literatuur/kaal.pdf>



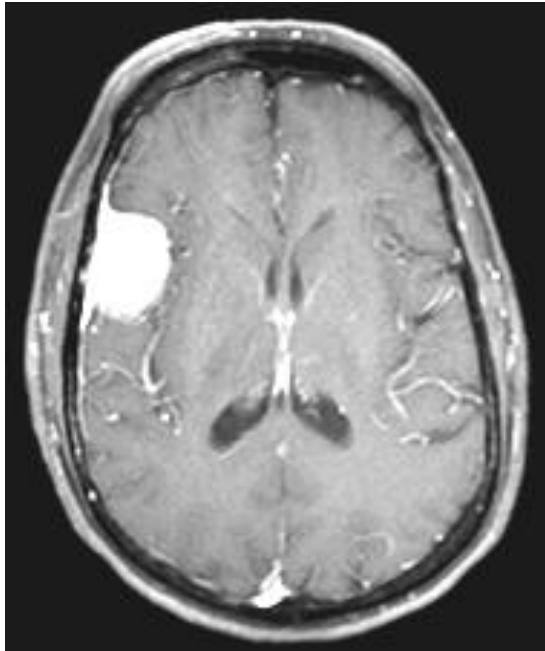
Glial tissue 44 %	Neuronal Tissue 36 %
Blood 10%	CSF 10%

“compliance reflects the ability of the intracranial system to compensate for increases in volume without subsequent increases in ICP.

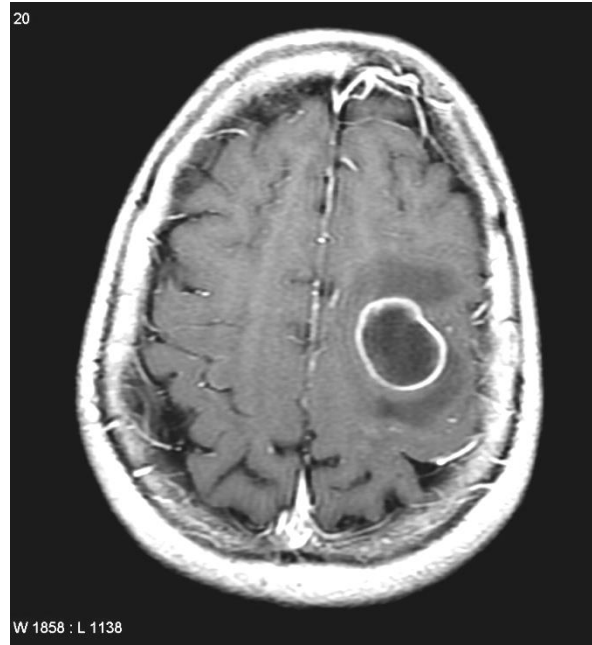
C.J Kirkness et al, 2000, 32,5 271

Not the same!

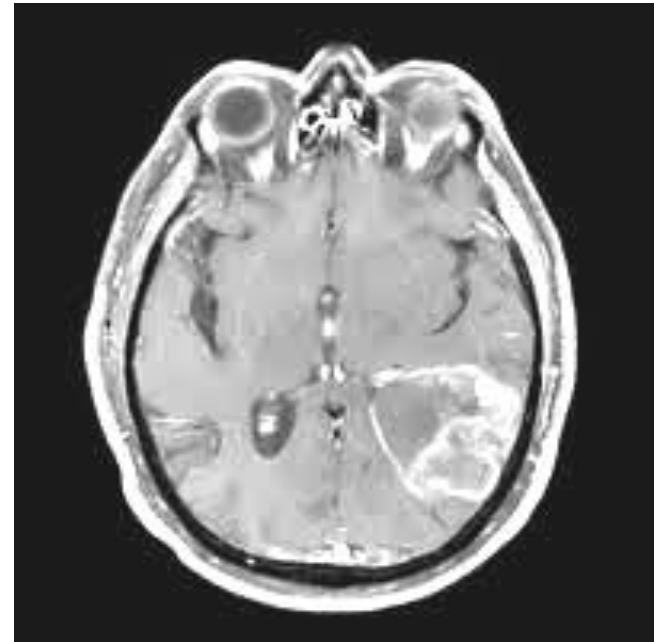
Meningioma

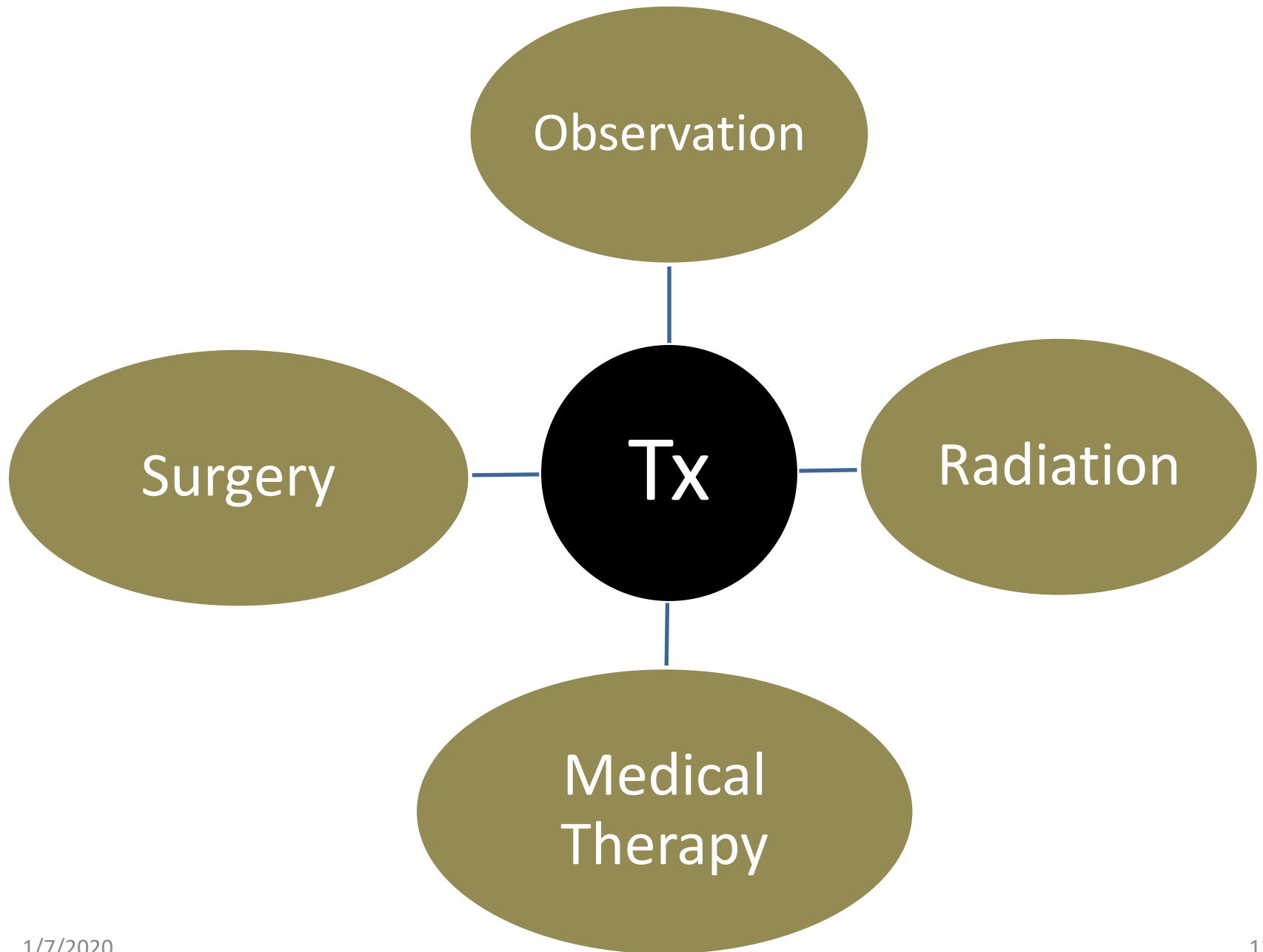


Metastasis



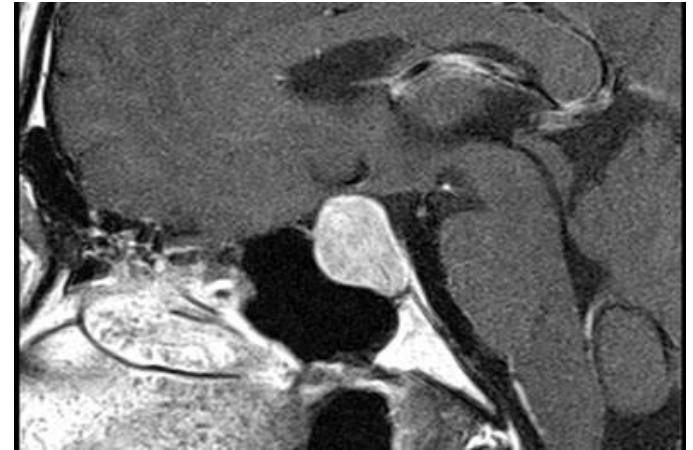
Glioma





Surgery?

- **Improve functional status**
 - Pressure
 - High ICP
 - Obstructive hydrocephalus
 - Seizures
 - Hormonally active
- **Prevention**
- **Improve survival**
- **Diagnostic**



Illustrative Cases

84 year-old lady

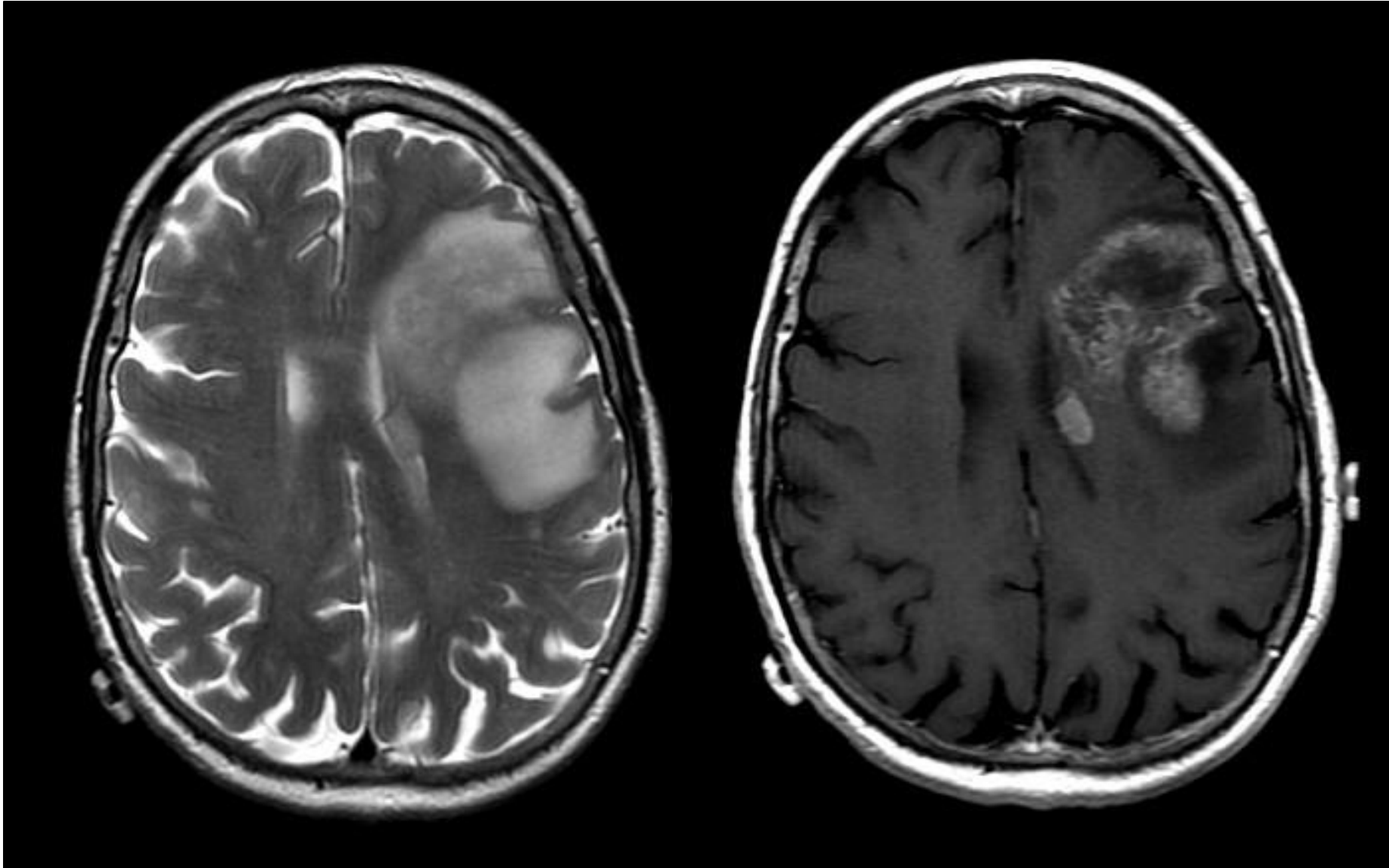
CC One week progressive speech difficulty & confusion

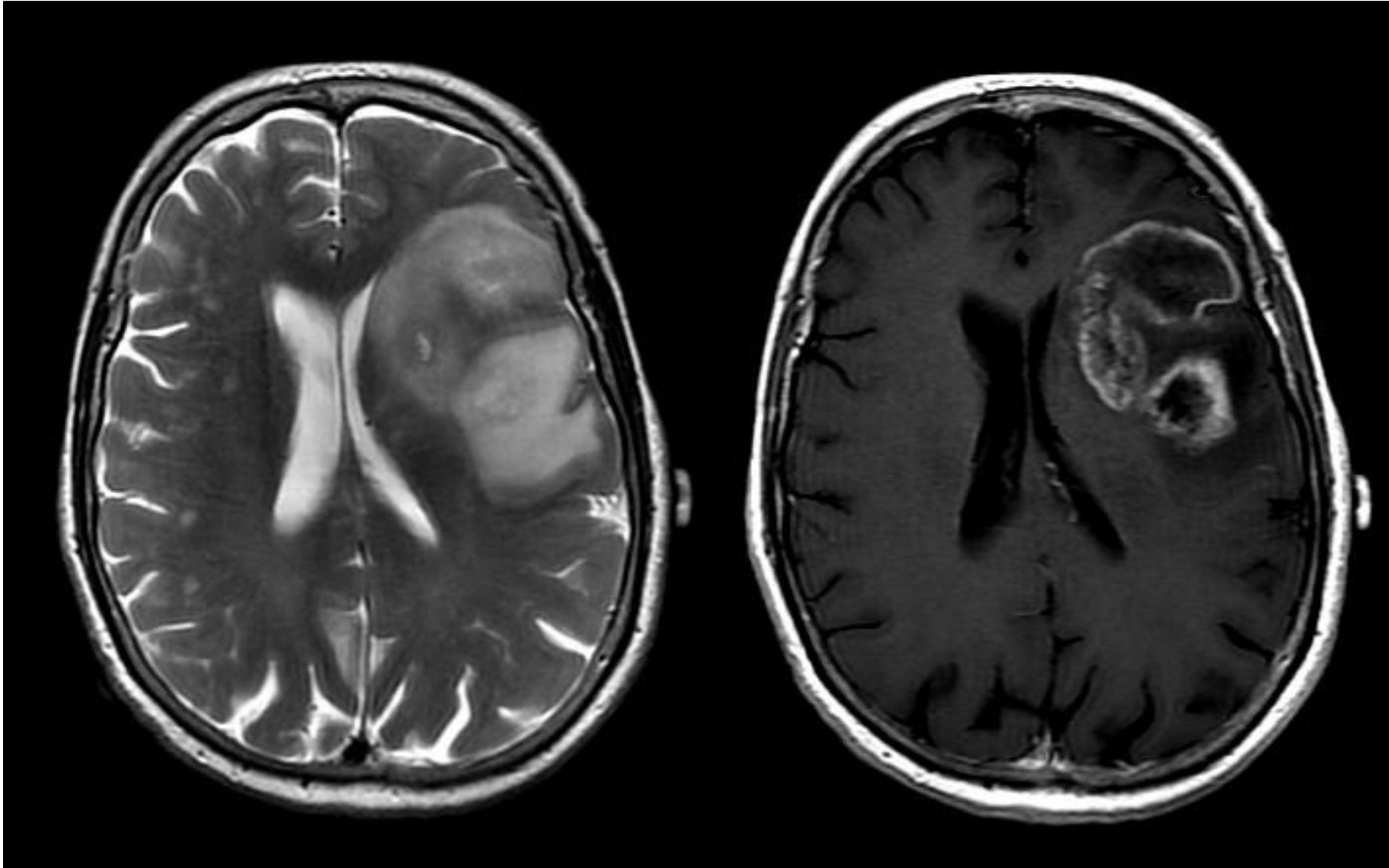
PMH Hypercholesterolemia on Lipitor

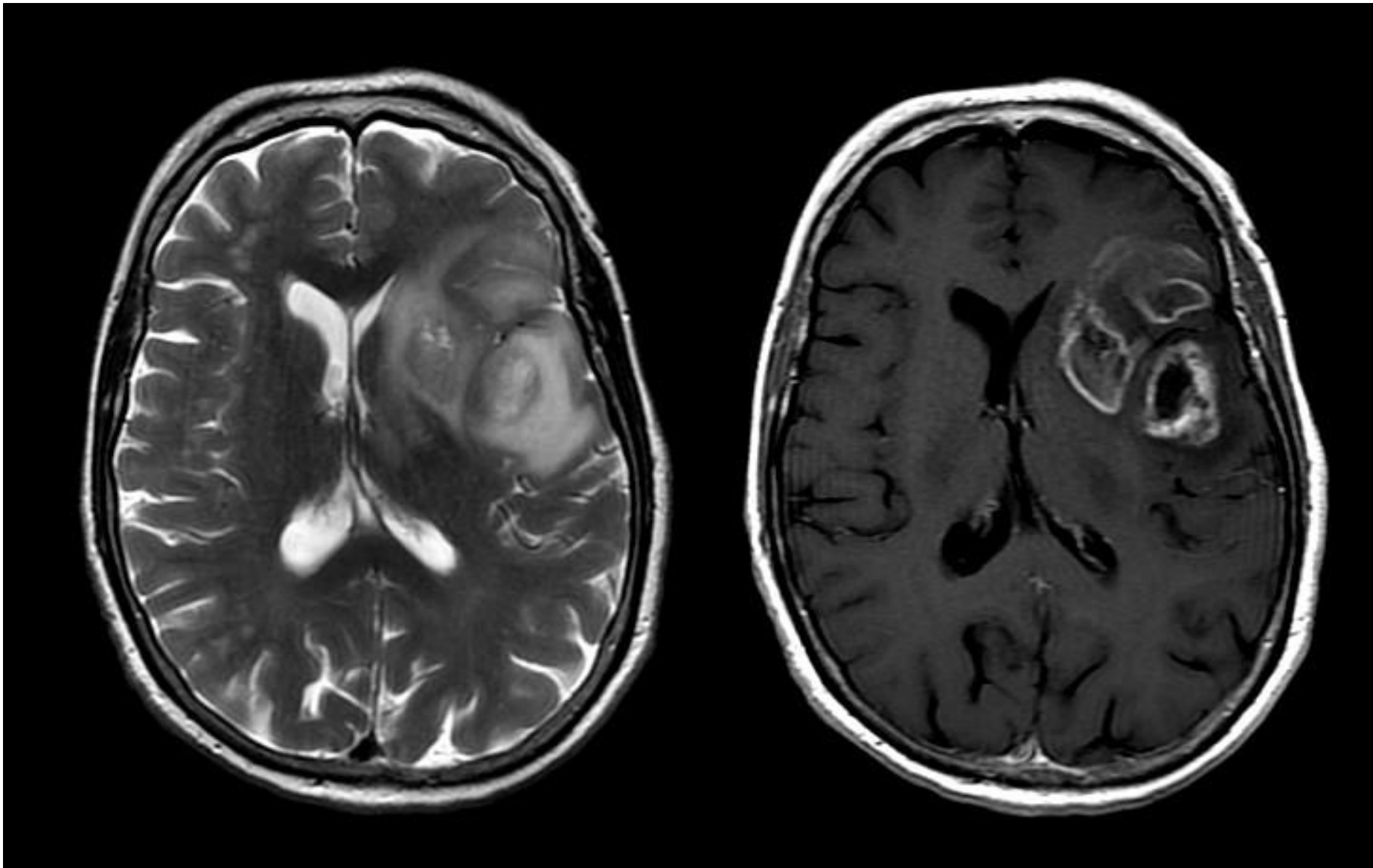
Exam -Expressive Dysphasia
-Right-sided facial droop

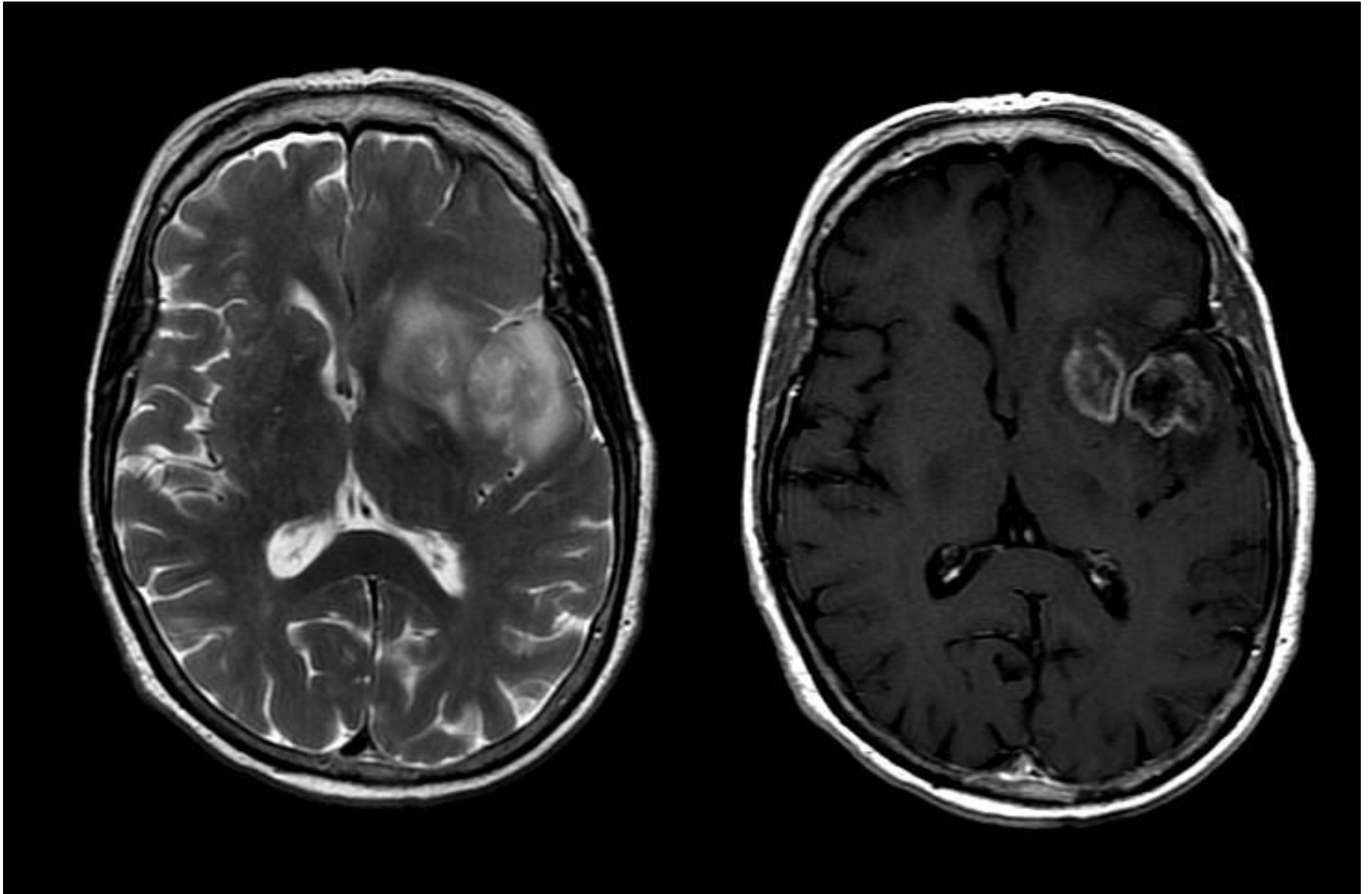


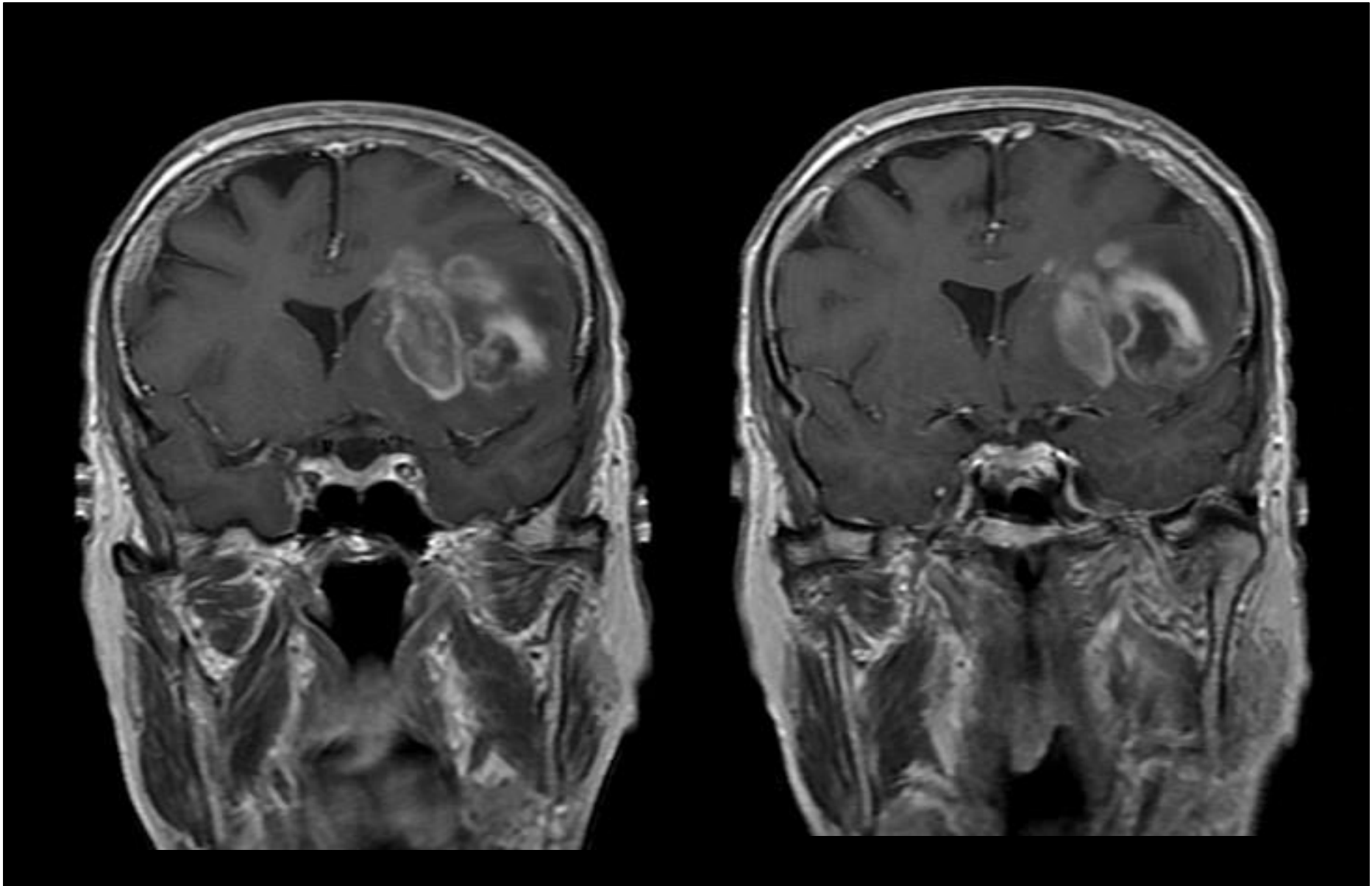


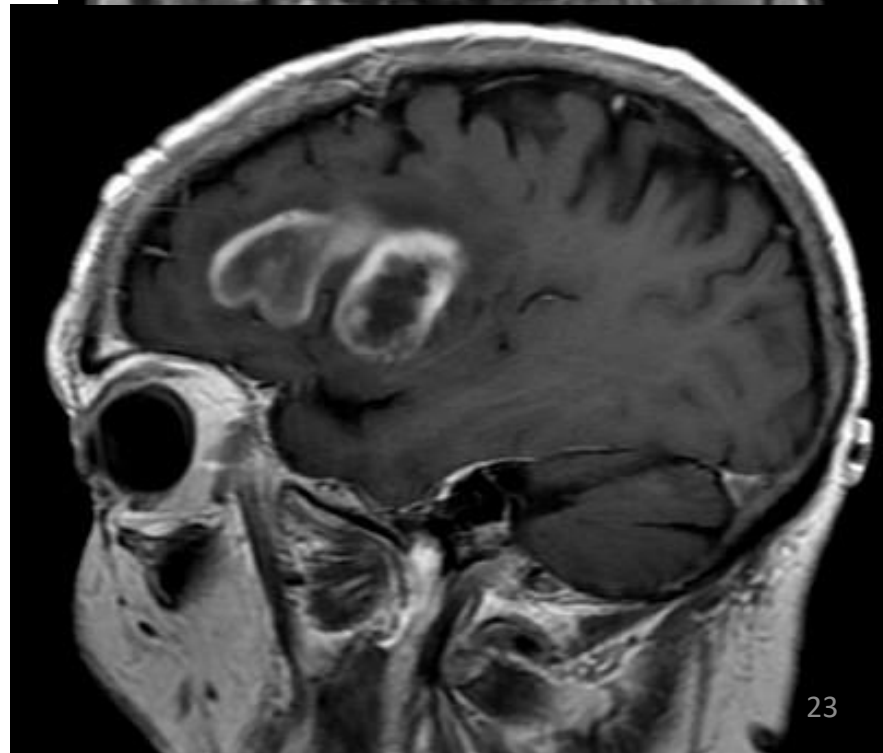
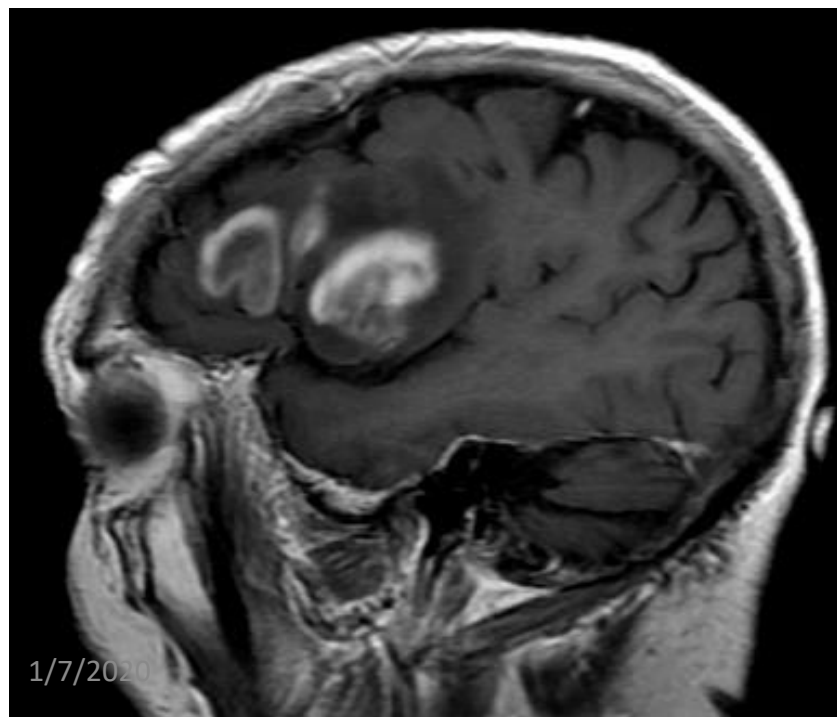
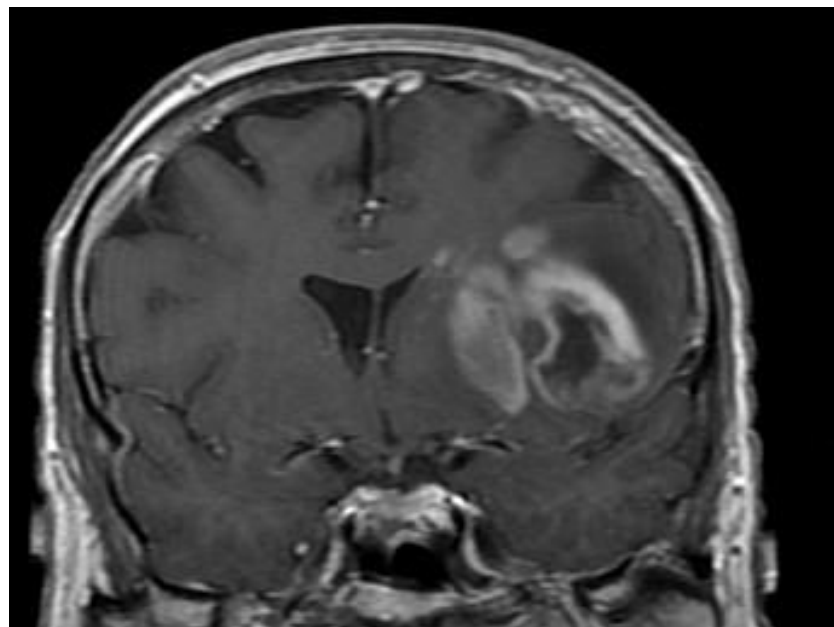
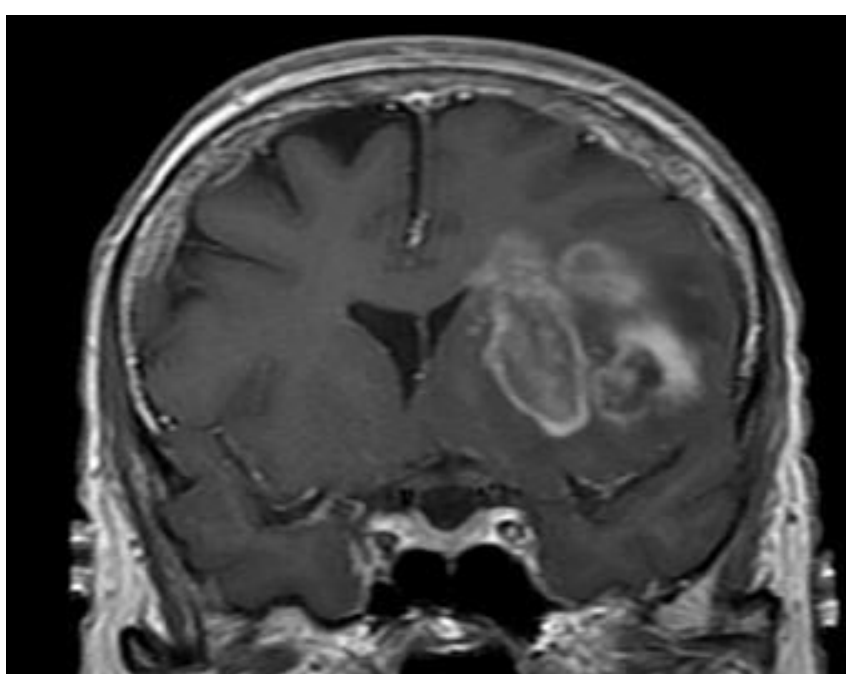




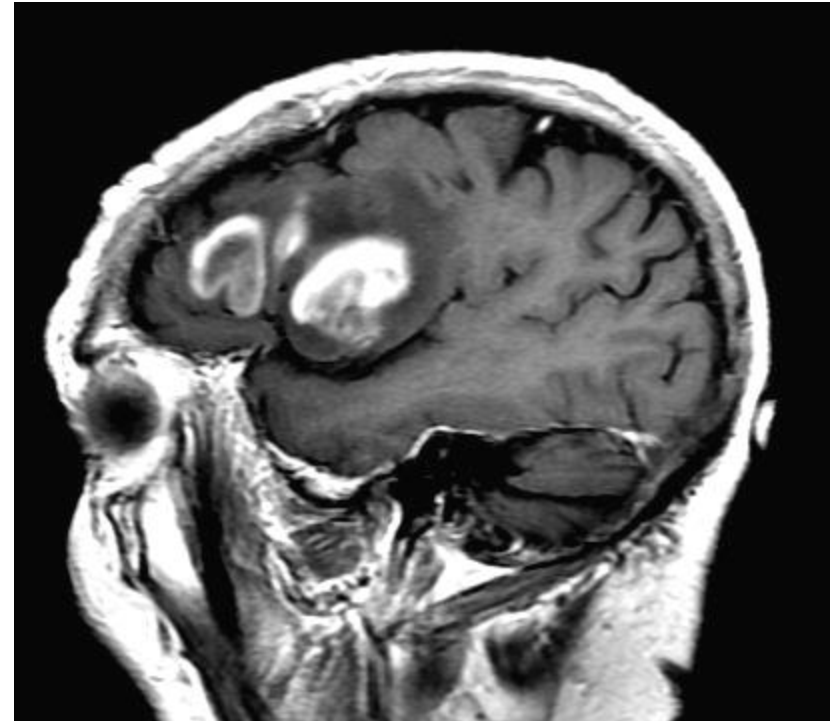
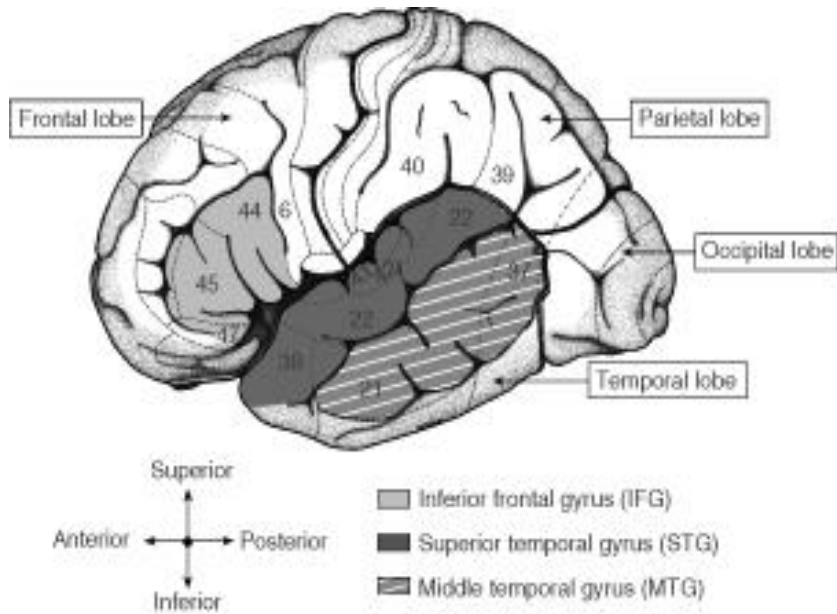








This Pt presented with expressive dysphasia, family thought she is depressed for a week.

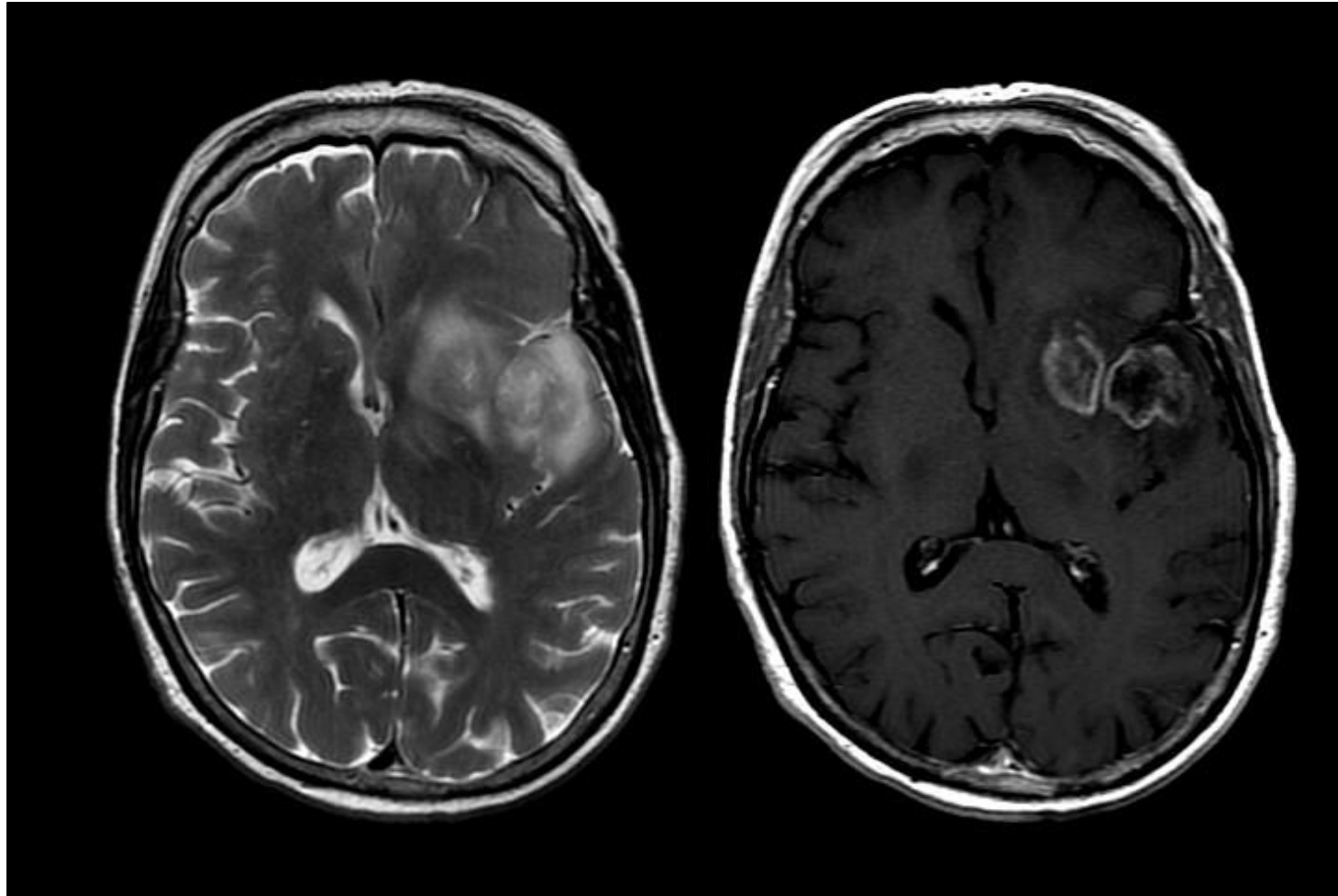


Broca's area located around pars opercularis (44) and pars triangularis (45)

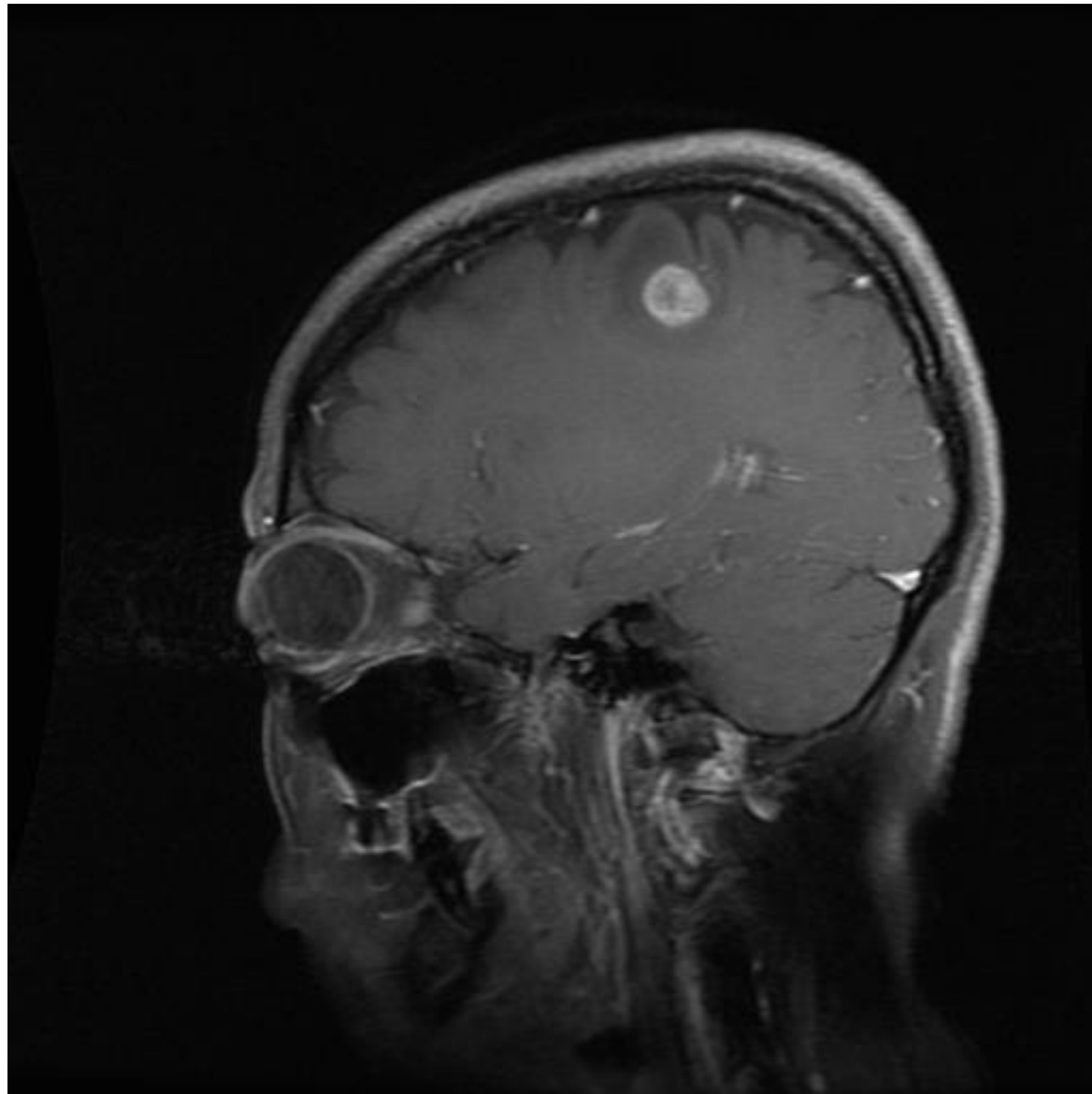
What do you want to do?

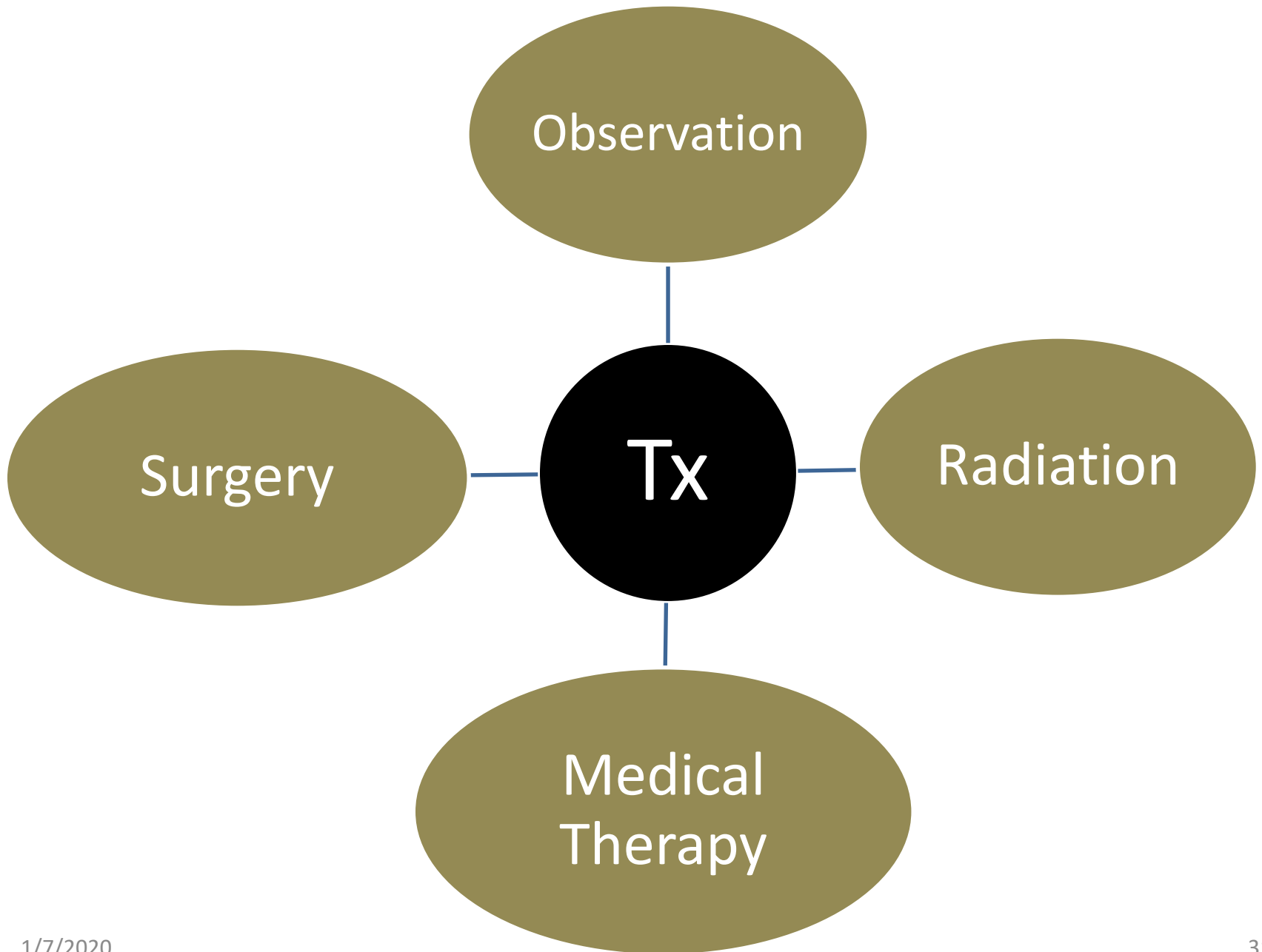
- Nothing
- Biopsy
- Biopsy/radiation
- Biopsy/radio-chemotherapy
- Partial debulking /radio-chemotherapy
- Awake (more aggressive)/radio-chemotherapy

Surgery → DO NO HARM



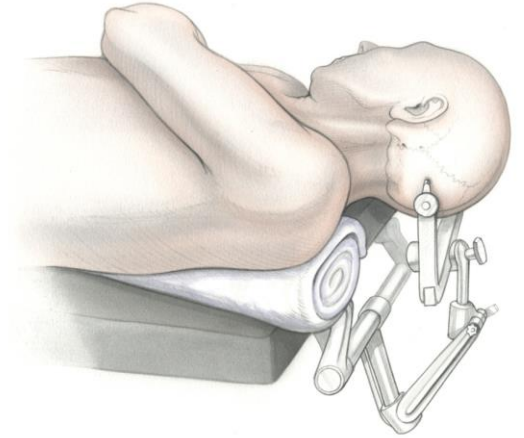
Metastasis





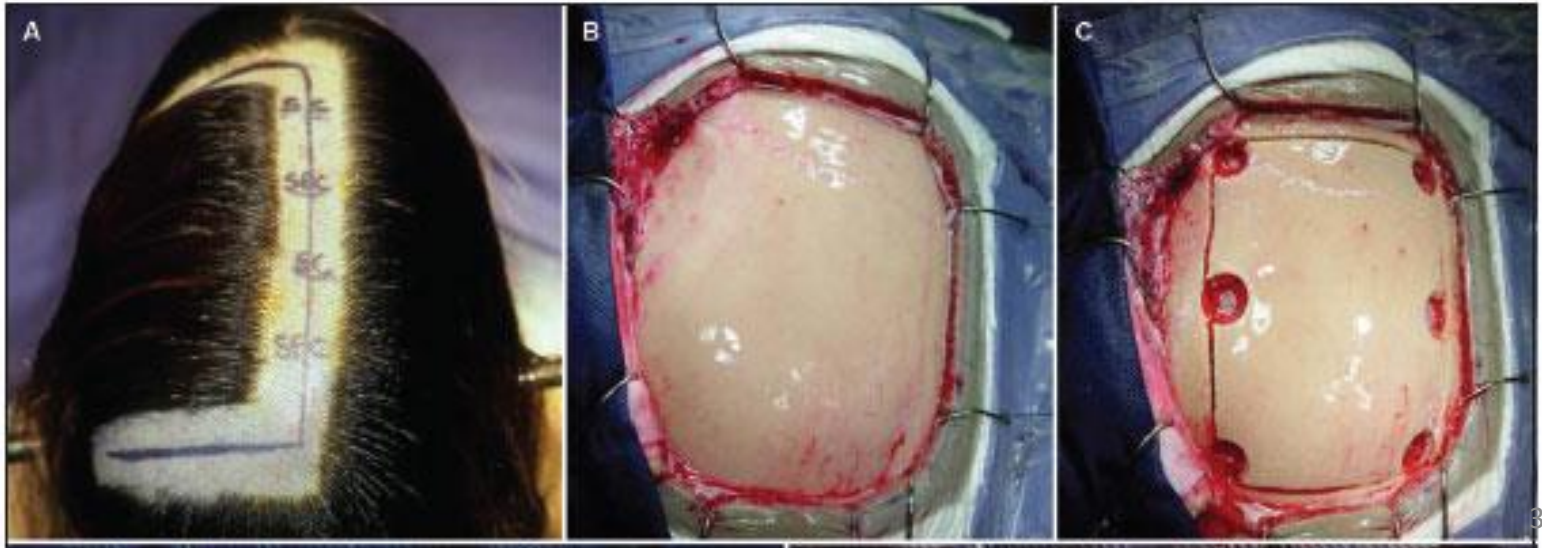
Operative Room

- Intubation
- Position
- Neuronavigation
- Plan the incision
- Monitoring
- Skin → Bone → Dura



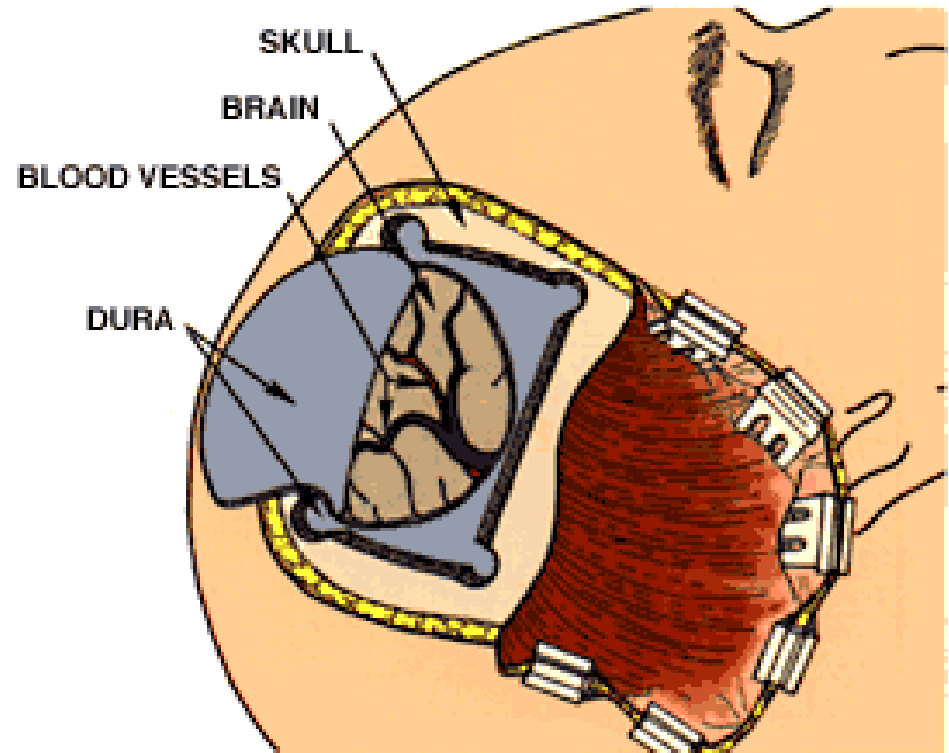
Operative Room

- Intubation
- Position
- Neuronavigation
- Plan the incision
- Monitoring
- Skin → Bone → Dura



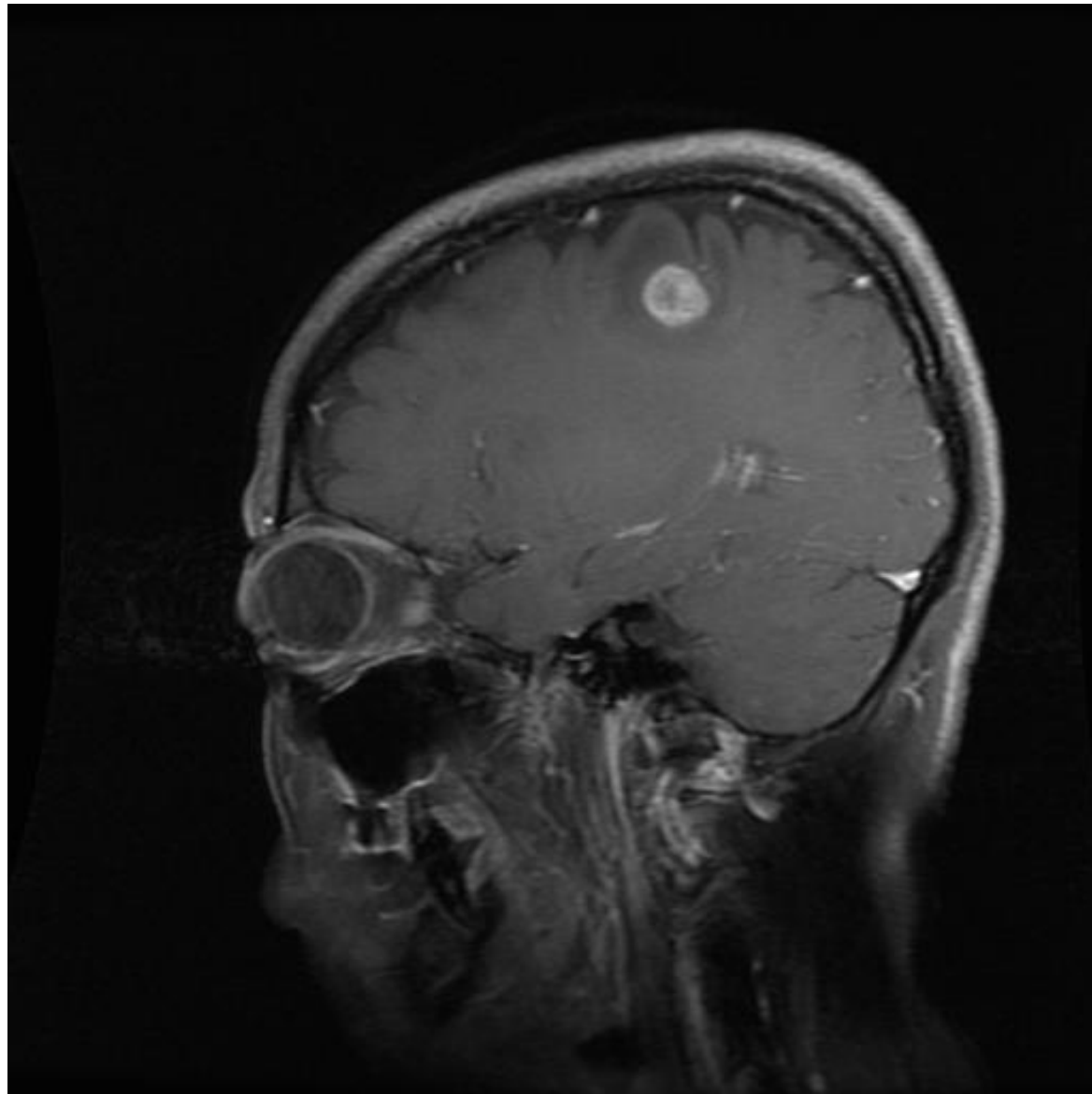
Operative Room

- Intubation
- Position
- Neuronavigation
- Plan the incision
- Monitoring
- Skin → Bone → Dura

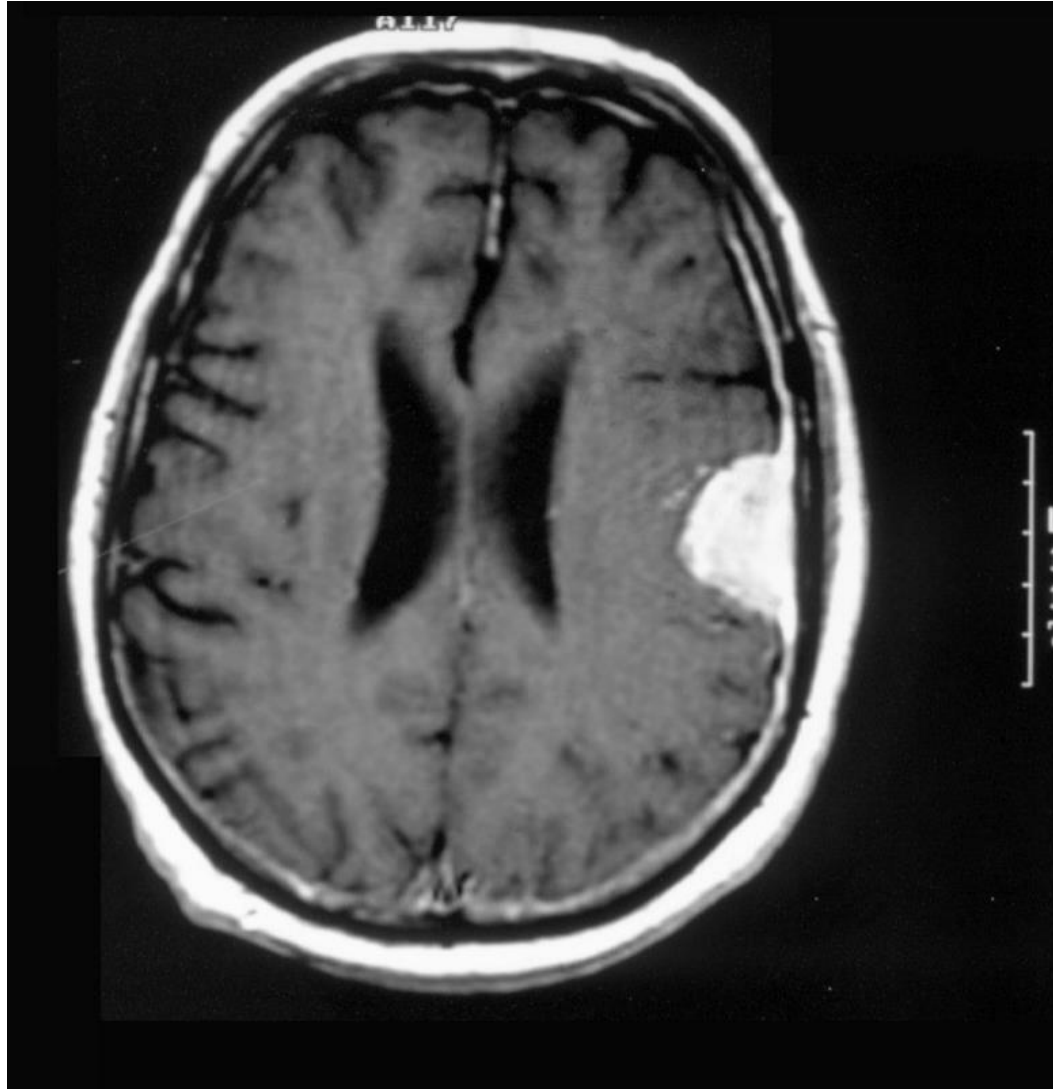


Dura is cut and reflected back, exposing brain

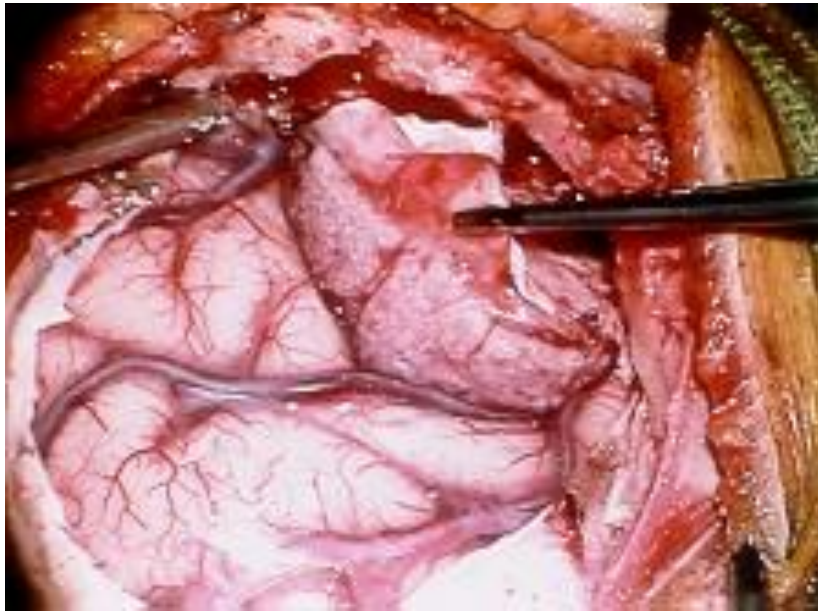
<http://www.youtube.com/watch?v=O9UzGLVUKmk>



Meningioma



<http://www.mashpedia.com/videoplayer.php?q=m7Ksx08OjHI>



Key Points

- Increased ICP (signs/symptoms/treatment)
- CT & MRI 101
- Most common brain tumors
- Treatment Options
- Do you want to be a neurosurgeon!