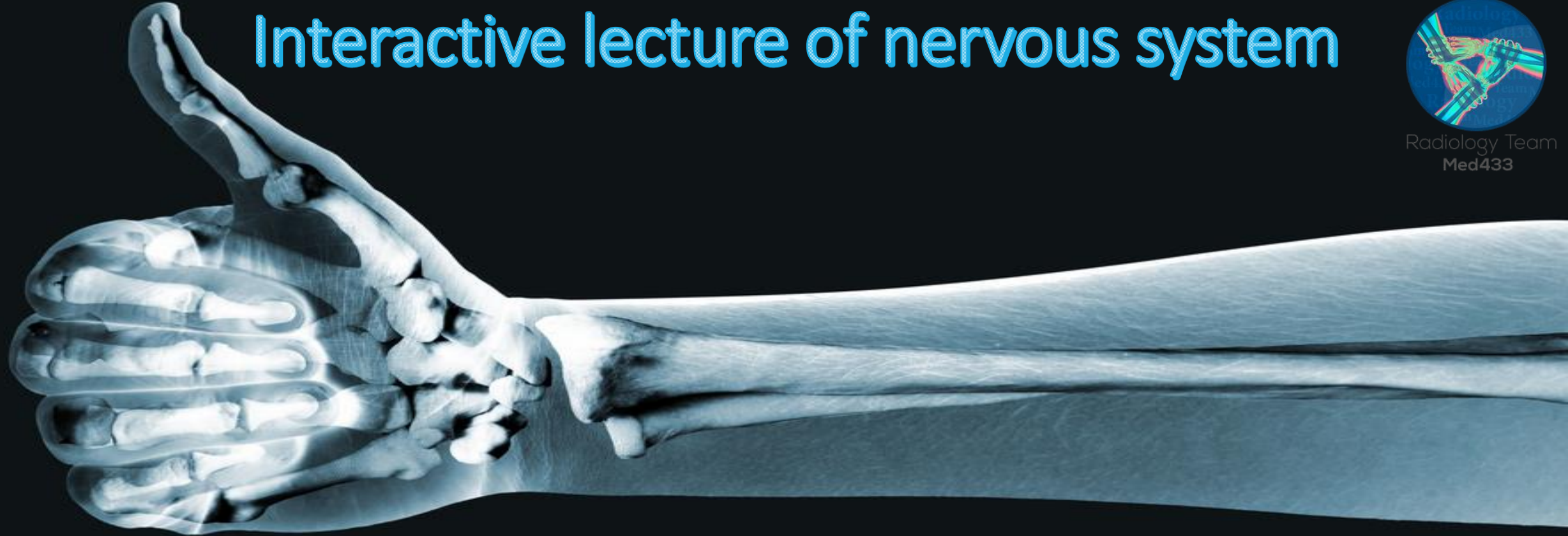


Lecture 11:

# Interactive lecture of nervous system



Radiology Team  
Med433

● Slides

● Explanation

● Notes

● Additions

● Important

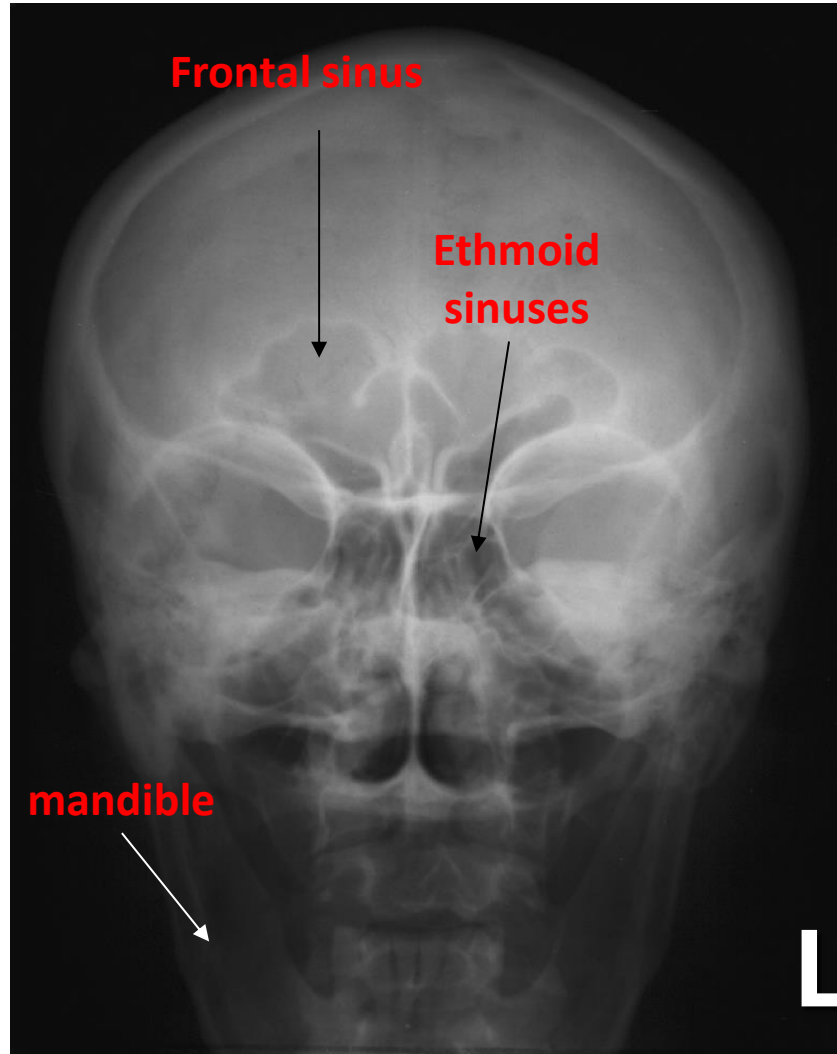
# Objectives

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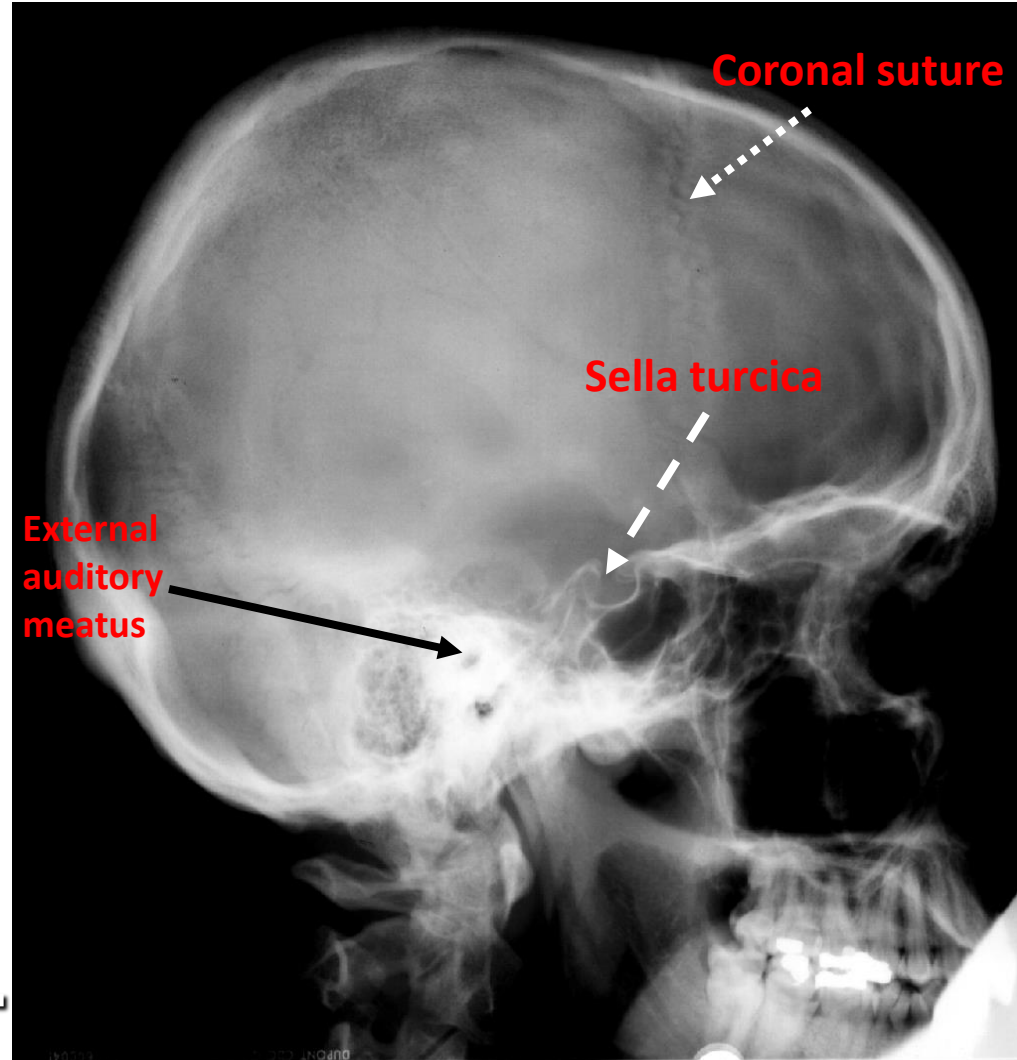
Not given



# Name the structures



SKULL PA VIEW



Skull X-RAY LAT. VIEW

Q: Which is true on this brain CT regarding anatomy:



- A. Anterior Horn of the Lateral Ventricle
- B. Caudate Nucleus
- C. Anterior Limb of the Internal Capsule
- D. Putamen and Globus Pallidus
- E. Posterior Limb of the Internal Capsule
- F. Third Ventricle
- G. Quadrigeminal Plate Cistern
- H. Cerebellar Vermis
- I. Occipital Lobe

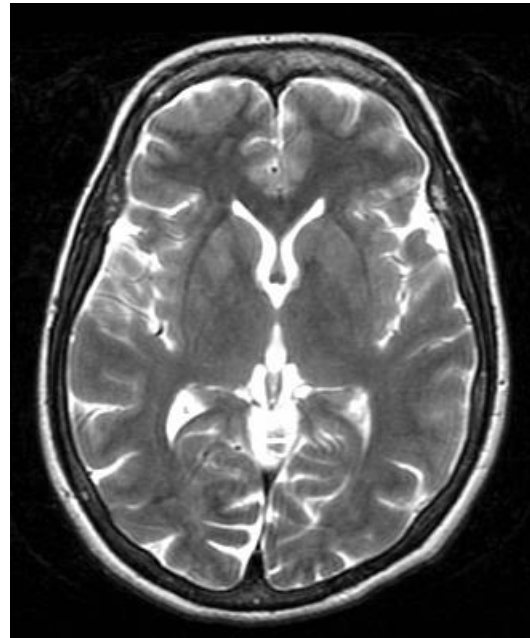
Q: Which is true in CT?

- A. Bone is black (not white)
- B. CSF is black
- C. Gray matter is darker than white matter (the opposite is correct)
- D. Gray and white matter can not be differentiated (no we can, this happens in brain edema)

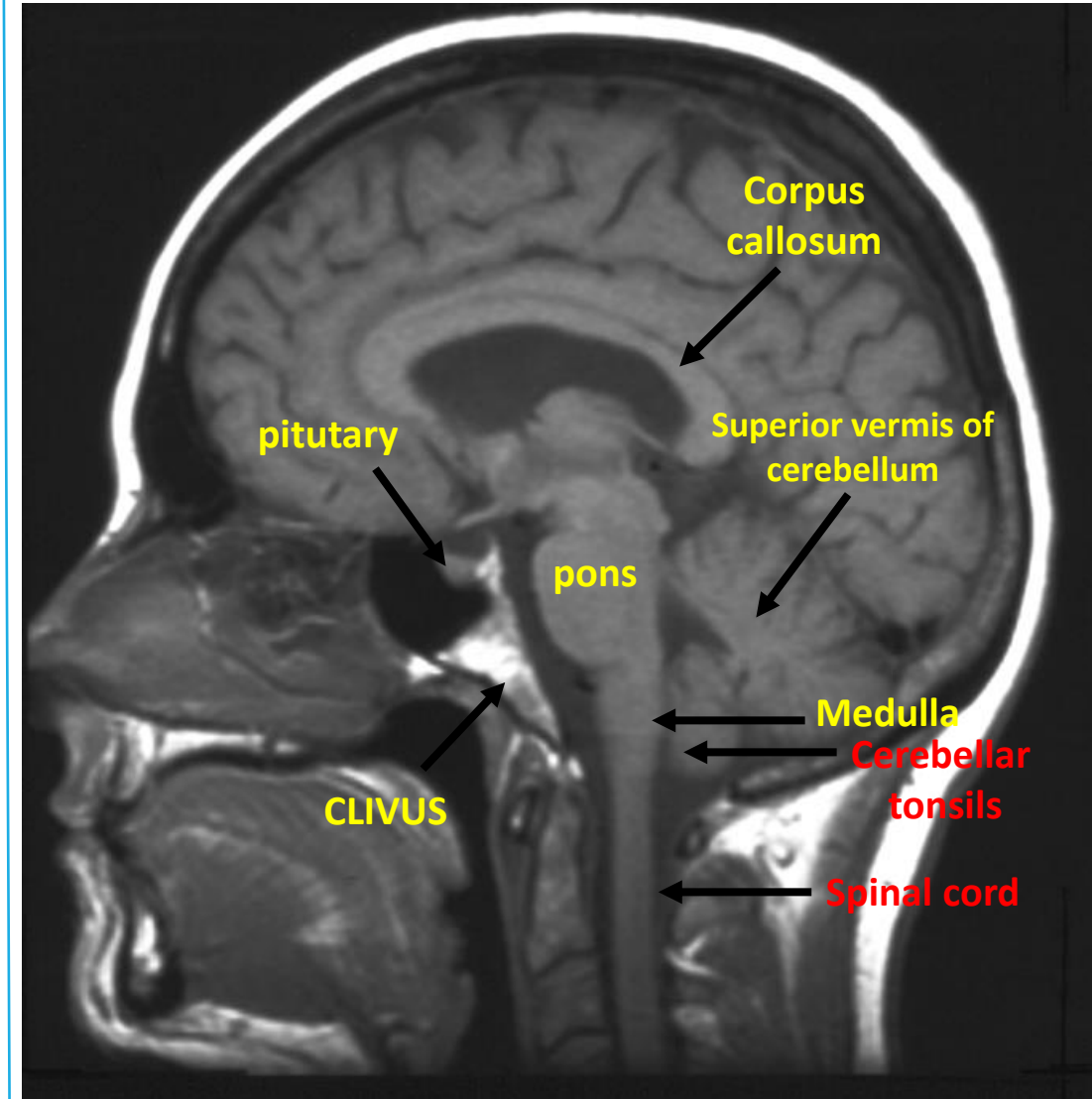
CT



MRI T2



## Name the structures



The Characteristic signal intensity of brain structures in **different MRI sequences**:

	Grey matter	White matter	CSF
T1WI	Grey	light	Dark
T2WI	Light	Dark	White
FLAIR	Light	Dark	Dark

The Characteristic signal density of brain structures in **CT**:

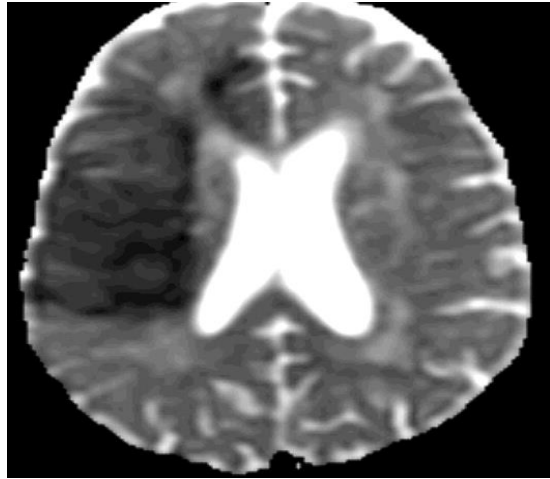
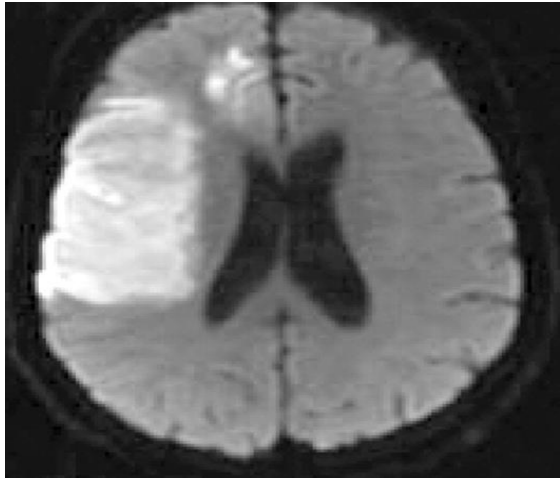
	Grey matter	White matter	CSF
	Light	Dark	Dark

- Cerebellar tonsils : commonly involved in case of brain herniation.
- On x ray: we can only see pituitary fossa but not the gland itself.

# MRI Diffusion

**Q : MRI diffusion (DWI) is particularly helpful in assessment of:**

- A. Early brain infarction.
- B. Brain abscess.
- C. Certain types of brain tumor.
- D. Hydrocephalus ? (NO)



DWI

ADC map

**Q: Contraindication of MRI include all the following EXCEPT:**

- A. cardiac pacemaker
- B. cochlear implants
- C. metal close to the eye
- D. neurostimulators
- E. pregnancy (3rd trimester) -only 1<sup>st</sup> trimester-

If the Q was MRI diffusion is particularly helpful in assessment all of the following except : answer is hydrocephalus

Q: Which of the following is true?



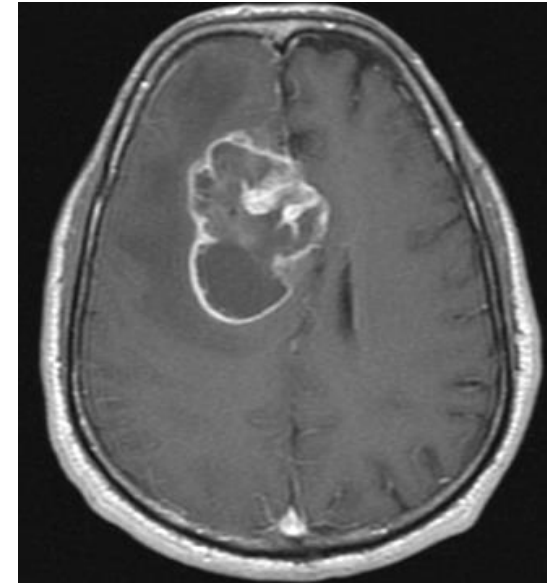
- A. This is CTA study
- B. **This is MRA study**
- C. This can only be done with contrast
- D. This is good to diagnose cerebral venous thrombosis (no because its about arteries not veins)

- MRA vs CTA: bone is white in CTA.
- MRA can be done with or without contrast.

Q: An MRI showed intra-axial lesion that is necrotic, irregular, strongly enhancing, and crossing midline.

This lesion is most likely:

- A. Meningioma. (its extra-axial)
- B. Infarction. (its not necrotizing and enhancing)
- C. Multiple sclerosis. (it is multiple small lesion)
- D. **Glioblastoma multiform.**



### Glioblastoma Multiforme (GBM)

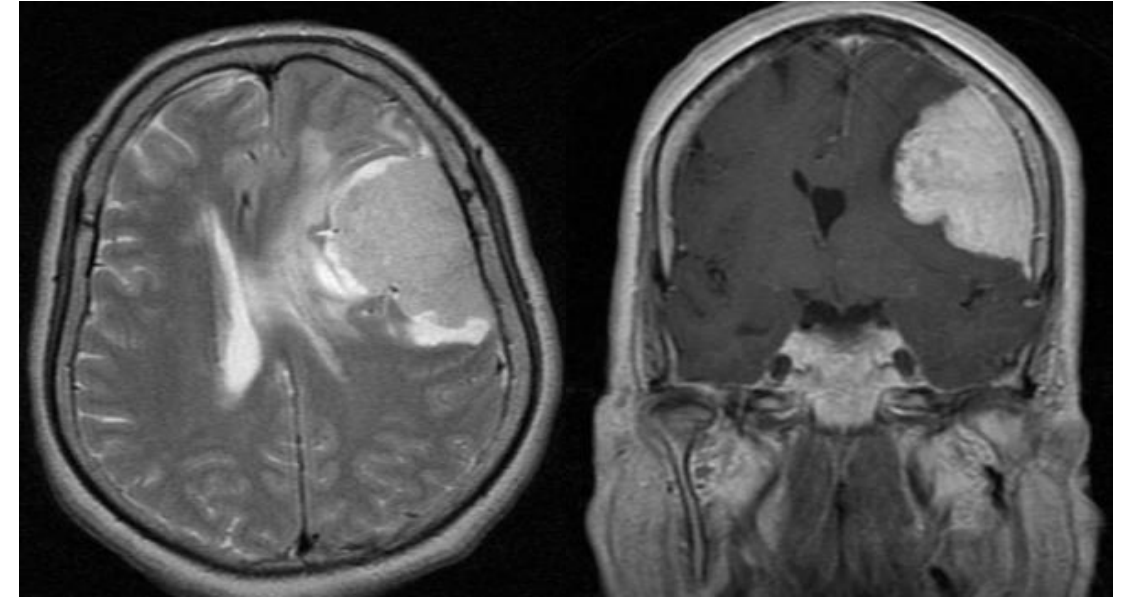
- Heterogeneous complex mass (solid with necrotic core)
- **Thick irregular nodular peripheral enhancement**

Q: The lesion on this CT is:



- A. Meningioma.
- B. Abscess. (round, smooth, thin, regular, ring enhancement)
- C. Multiple sclerosis.
- D. Glioblastoma multiforme.

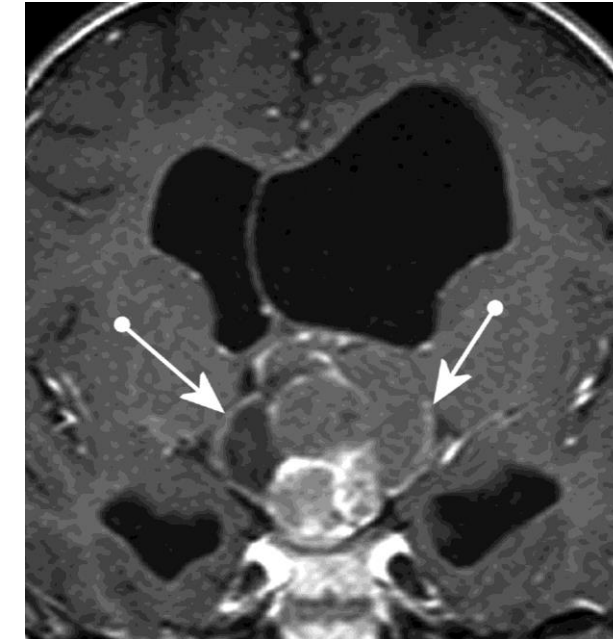
Q: The lesion on this MRI is:



- A. Meningioma. (extra-axial).
- B. Infarction. (intra-axial)
- C. Metastasis. (multiple lesion)
- D. Abscess. (intra-axial)



Q: The lesion on this MRI is:

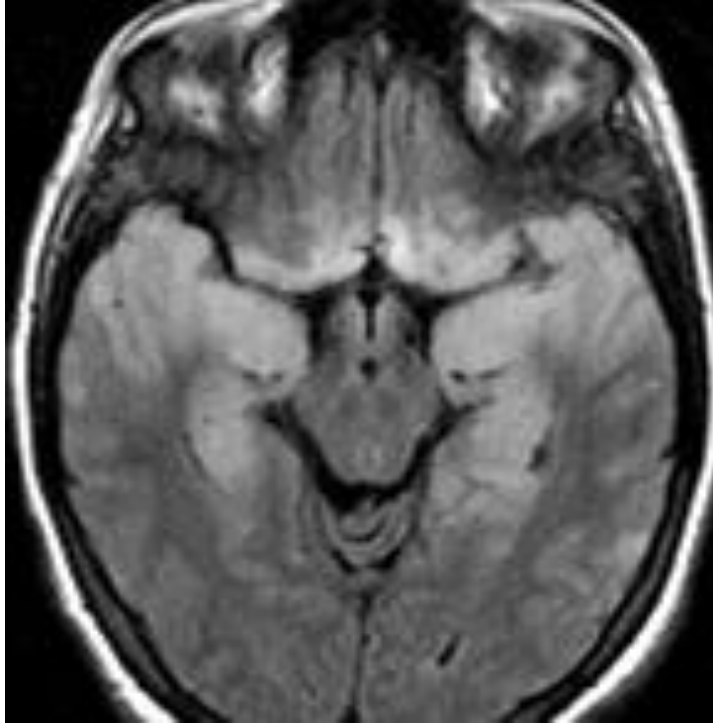


- A. Pituitary adenoma
- B. Craniopharyngioma (multi-cystic)
- C. Meningioma
- D. Glioblastoma multiforme

**multiple  
Metastatic lesion**

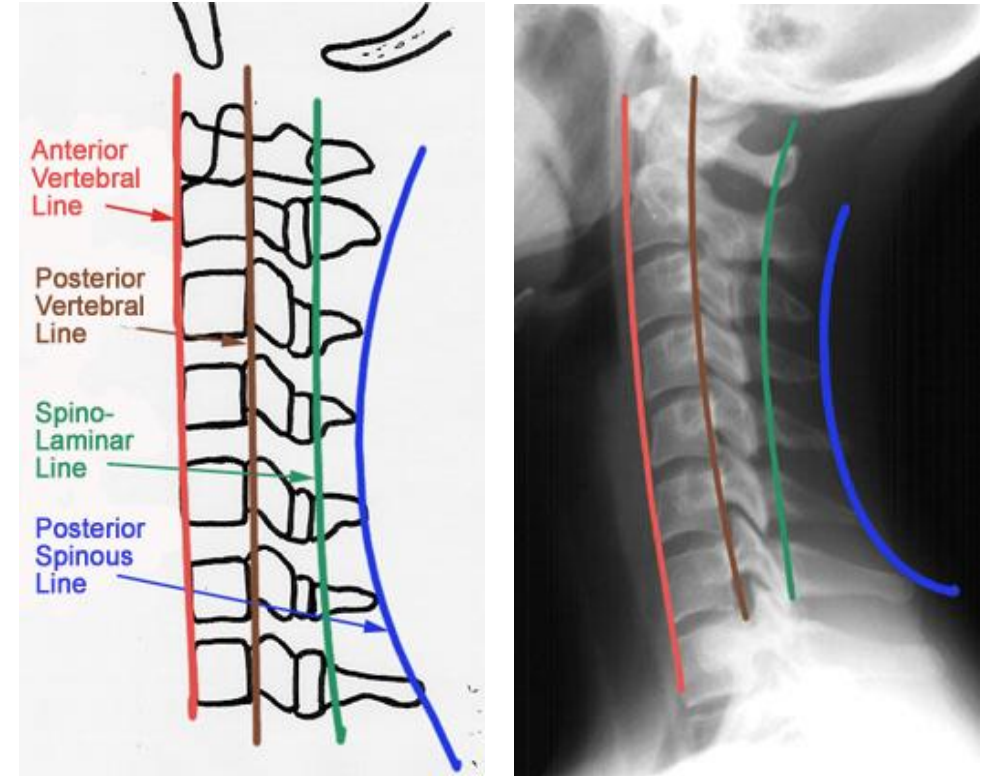


Q: The abnormalities on this MRI are due to:



- A. Multiple sclerosis (multiple small lesion)
- B. Meningitis
- C. Brain tumor
- D. Encephalitis

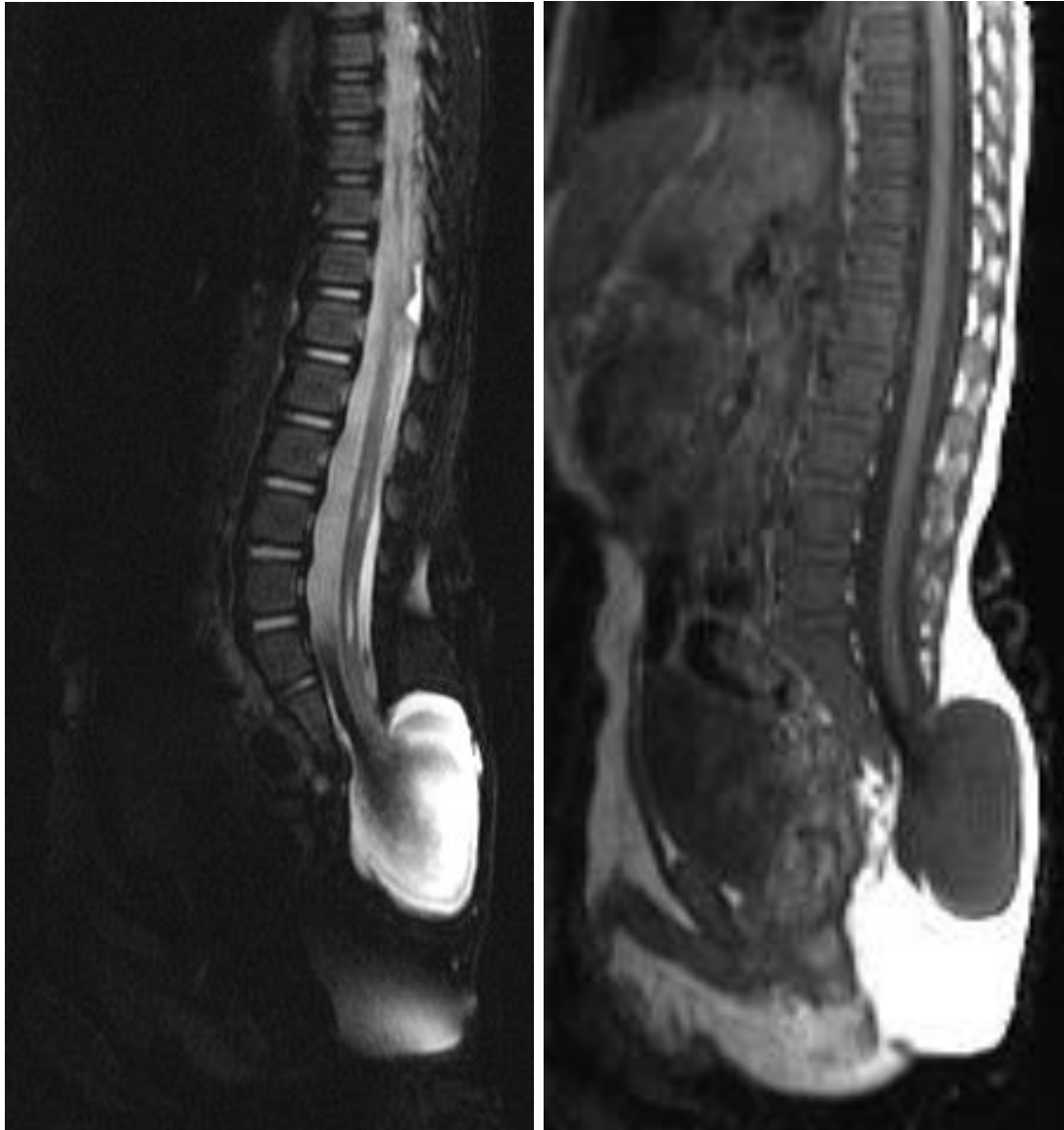
Q: Which of the following is true about the lines of the cervical spine?



- A. Red is intervertebral line
- B. Brown is posterior spinous line
- C. Green is spinolaminar line
- D. Blue is posterior vertebral line

T2

T1



Q: This MRI of the spine shows:

- A. **Meningocele**
- B. Extradural tumor
- C. Discitis
- D. Vertebral fusion



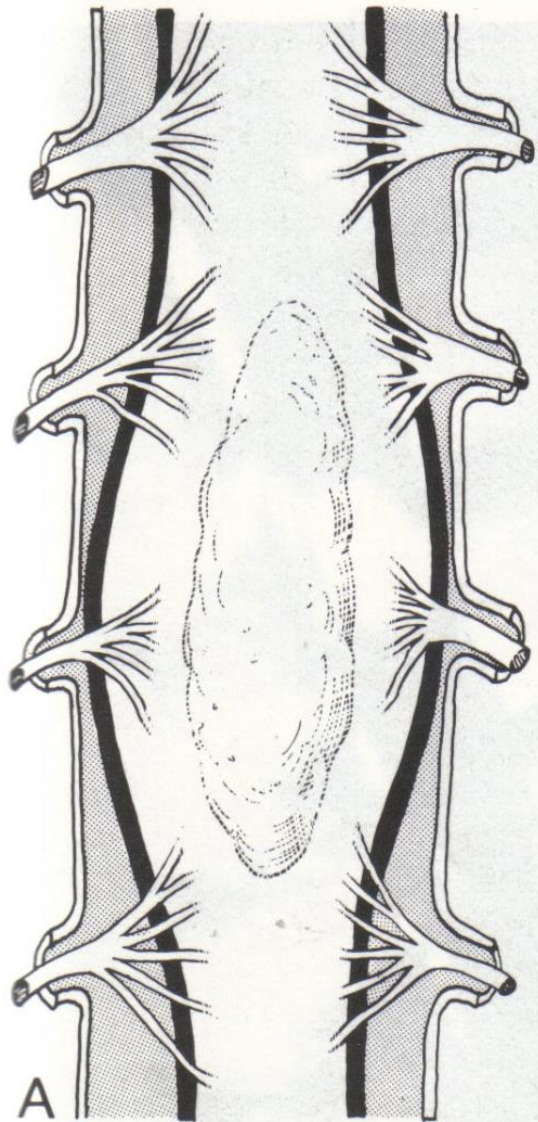
**T1**  
**Intra dural intra medullary**



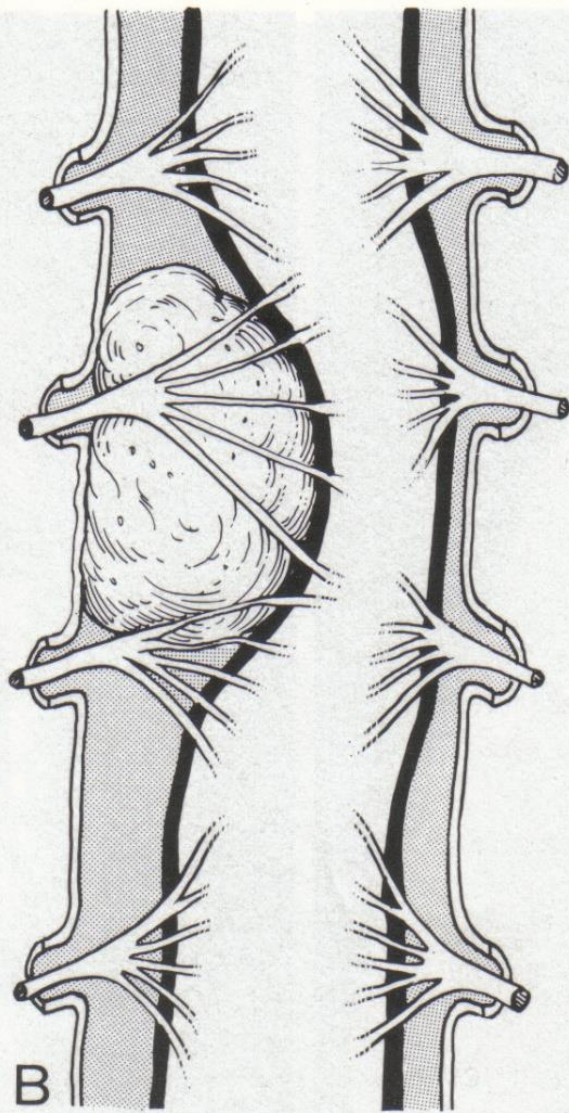
**T2**  
**Intra dural extra medullary**



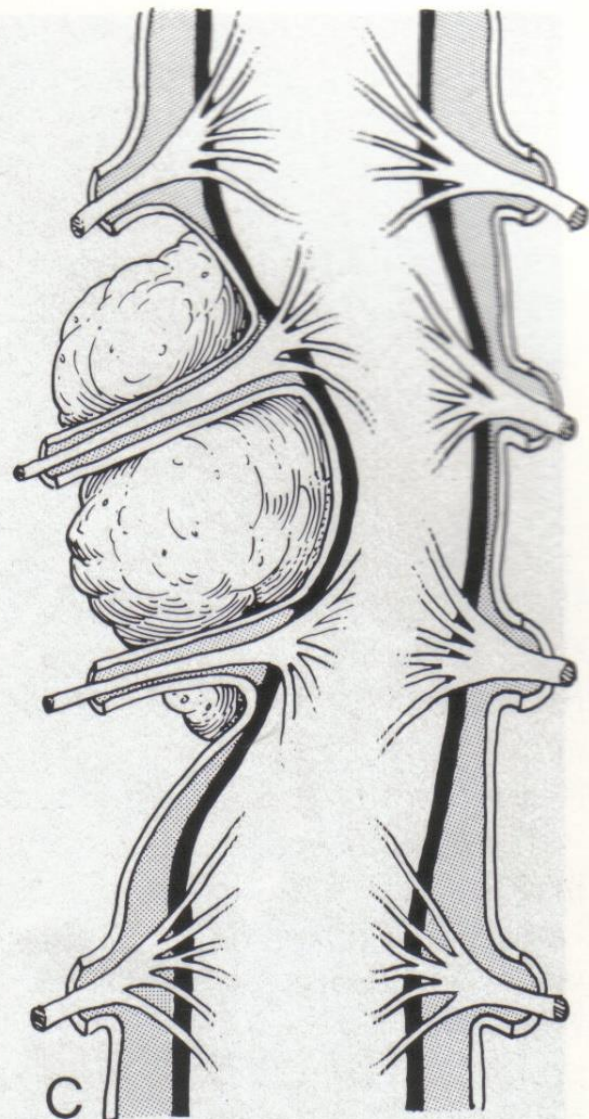
**EXTRA dural extra medullary**  
**(Epi dural)**



**Intra dural intra medullary**



**Intra dural extra medullary**



**EXTRA dural extra medullary  
(Epi dural)**

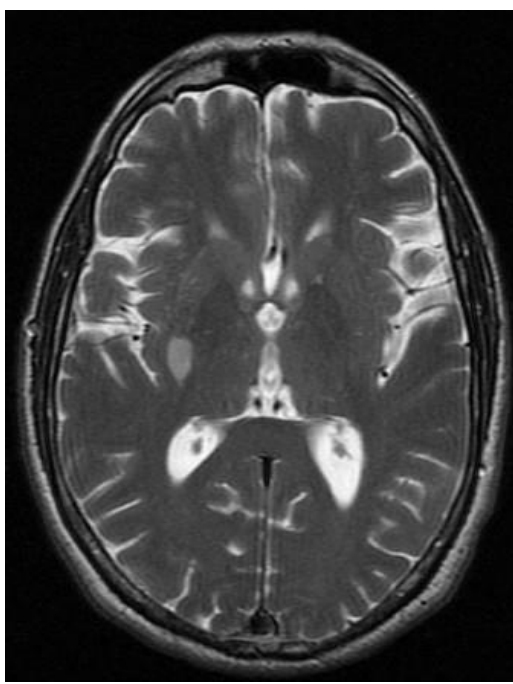
**Q: What is the difference?**



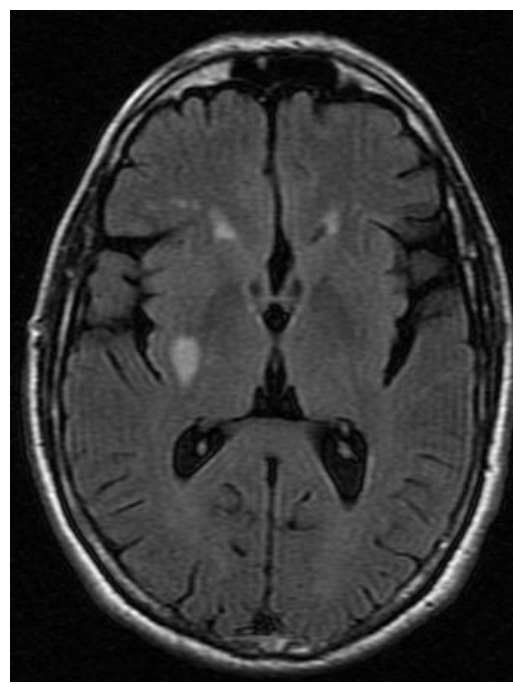
**Normal**



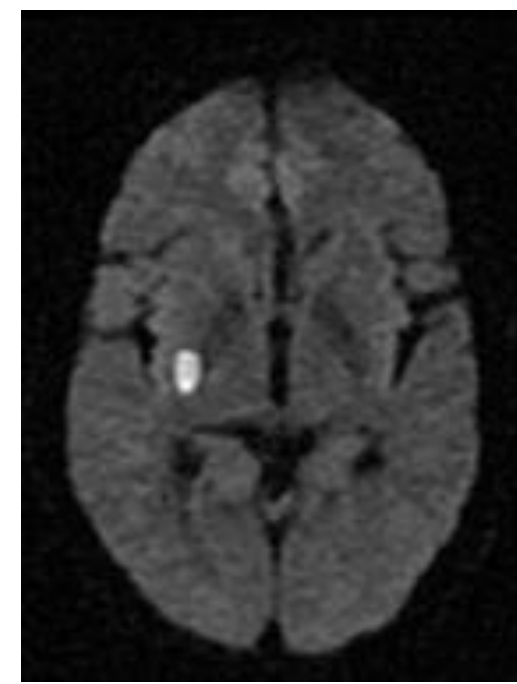
**Cervical spondylosis**



T2WI



FLAIR



DWI

(This MRI shows an infarction in the right basal ganglia)

Q: The infarction is:

- A. Acute (recent) –because it is bright in all MRI sequences-
- B. Chronic (old) –in DWI and flair will be dark, and bright in T2
- C. Hemorrhagic
- D. In PCA territory

Q: This patient is most likely to have:

- A. Left monoplegia
- B. Left hemiplegia
- C. Diplegia
- D. No symptoms

Q: This CT shows:



Normal calcification

- A. Subdural hematoma
- B. Subarachnoid hemorrhage
- C. Intraventricular hemorrhage
- D. **All of the above**

Q: The hematoma pointed by the arrow is:



- A. **Acute epidural**
- B. Chronic epidural
- C. Acute subdural
- D. Chronic subdural
- E. None of the above



Q: This CT shows:



- A. Acute PCA (posterior cerebral artery) infarct + intraventricular hemorrhage
- B. Chronic ACA infarct
- C. Subarachnoid bleeding
- D. Meningioma
- E. Abscess

# Thank You!

We hope you found this helpful and informative.

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