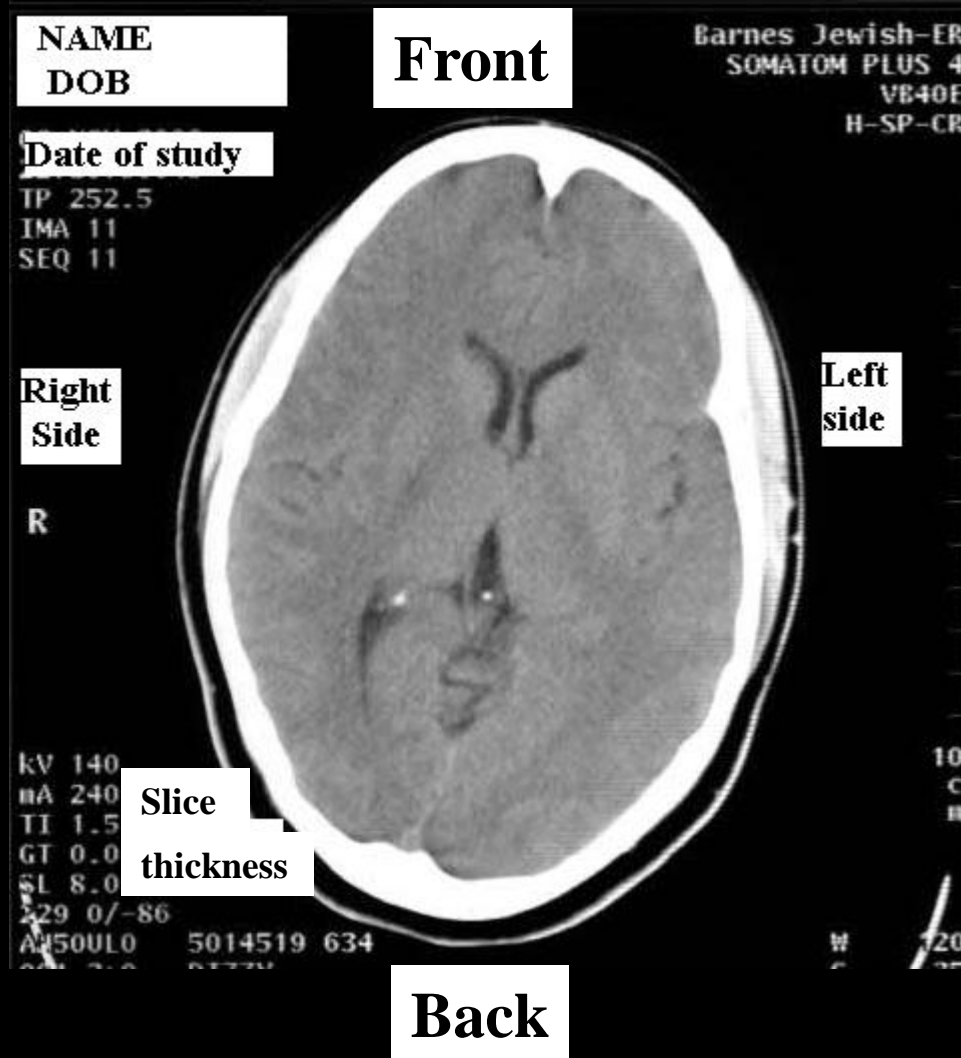


Intro to Head CT



Renee B. Van Stavern, MD
Neurology

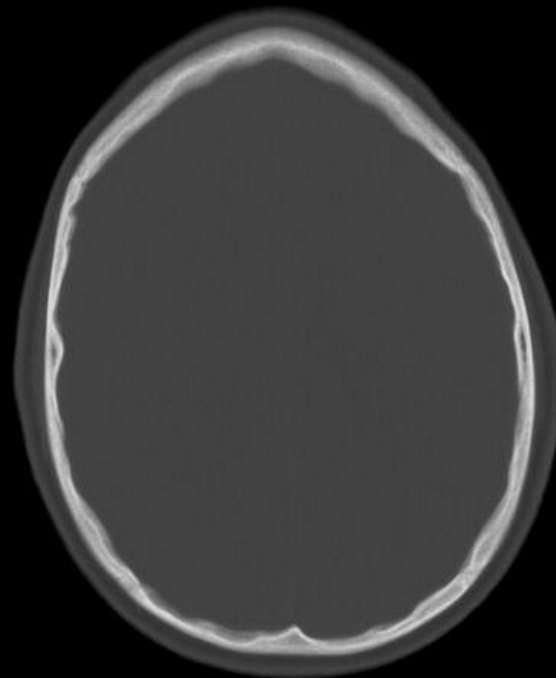
Normal head CT



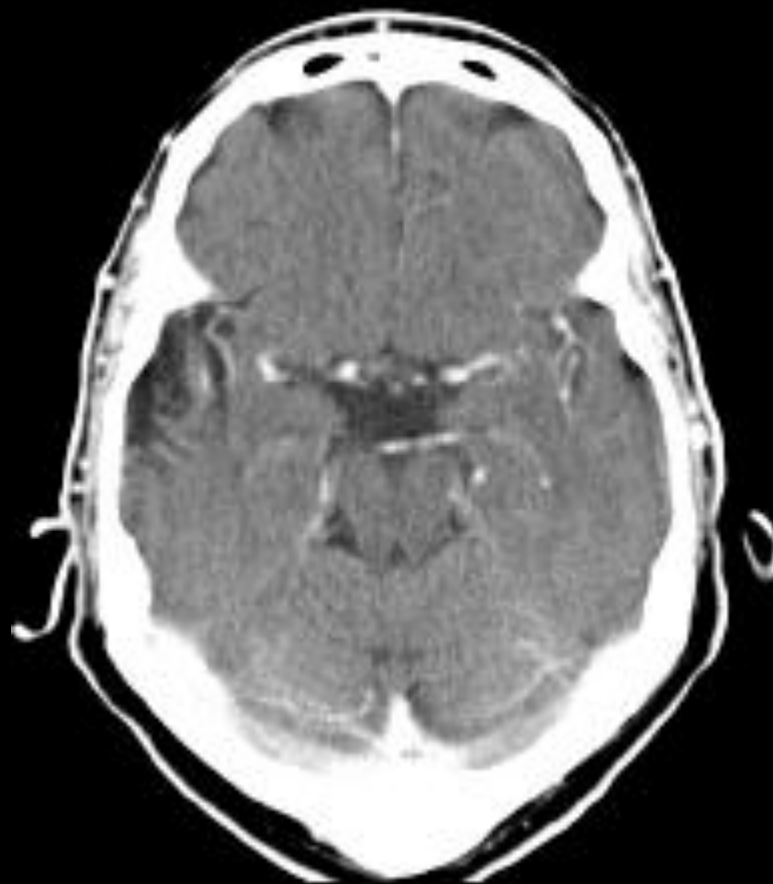
Attenuation

	Bone
	Muscle
	Hemorrhage
	Contrast
	Brain
	Grey matter
	White matter
	Edema
	CSF
	Fat
	Air

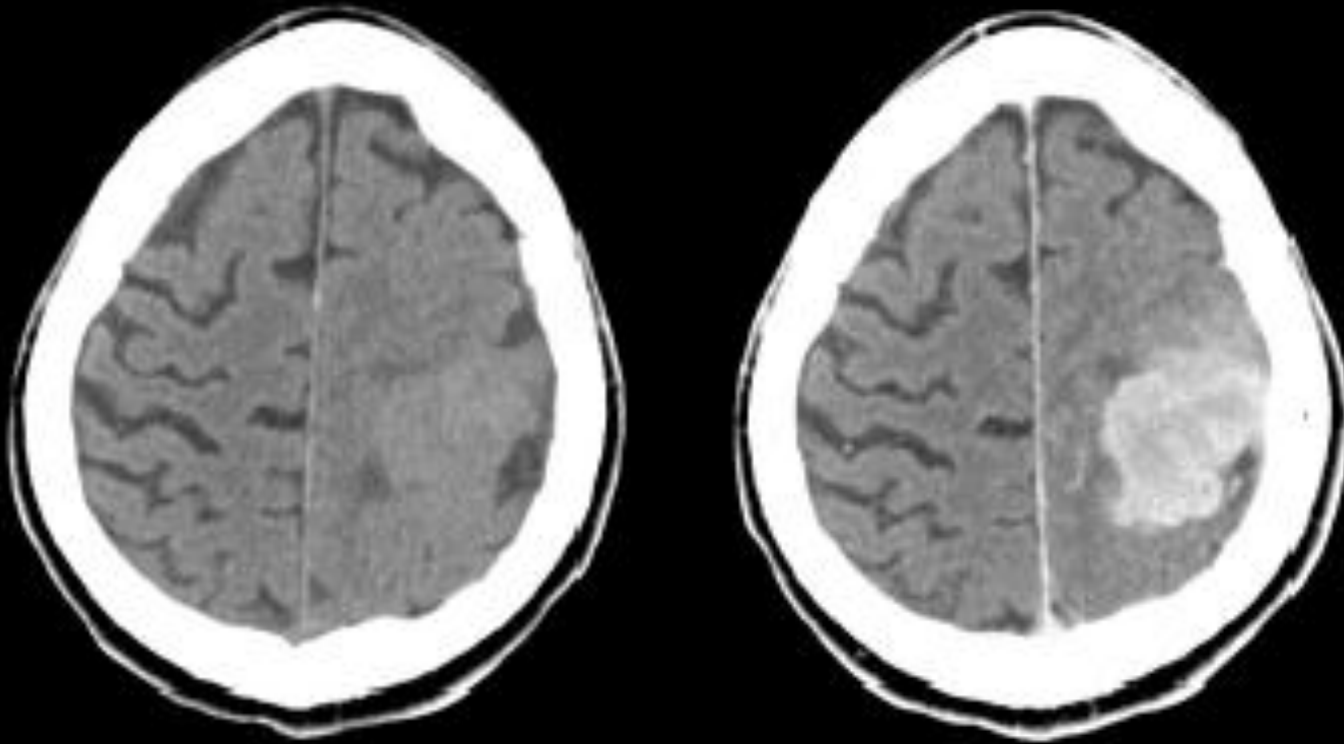
CT bone windows



CT Contrast



CT Contrast



Kindergarten Kop – It's NOT a tuma. B. Mendelson

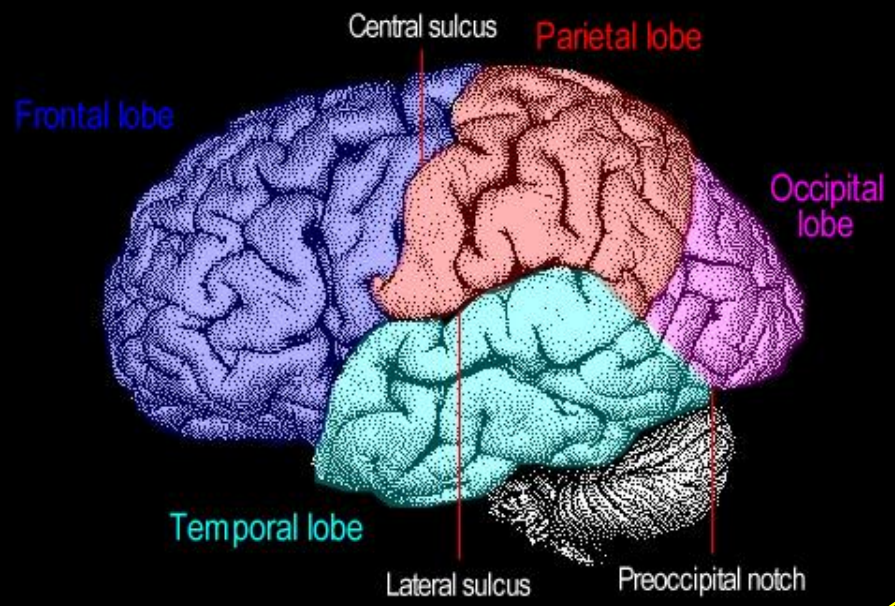
CT Advantages

- Fast
- Available
- (Relatively) inexpensive
- Sensitive for intracranial hemorrhage

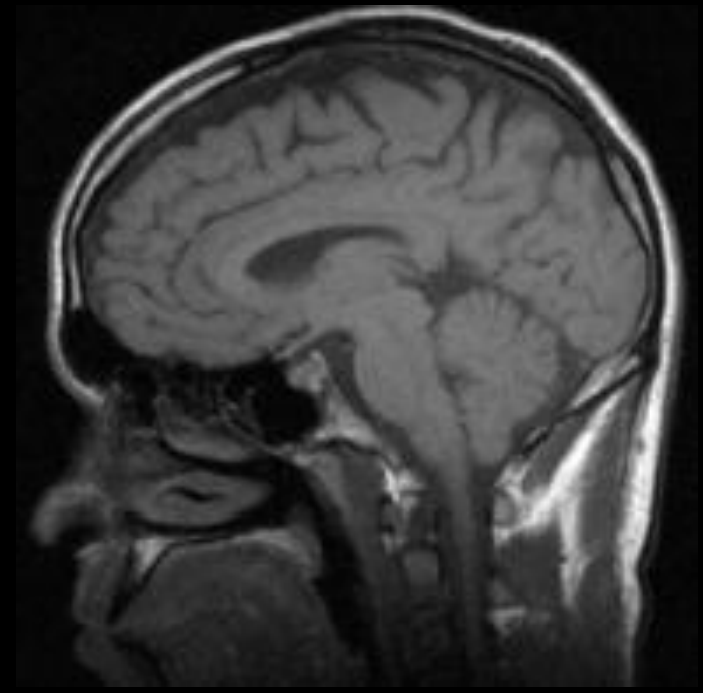
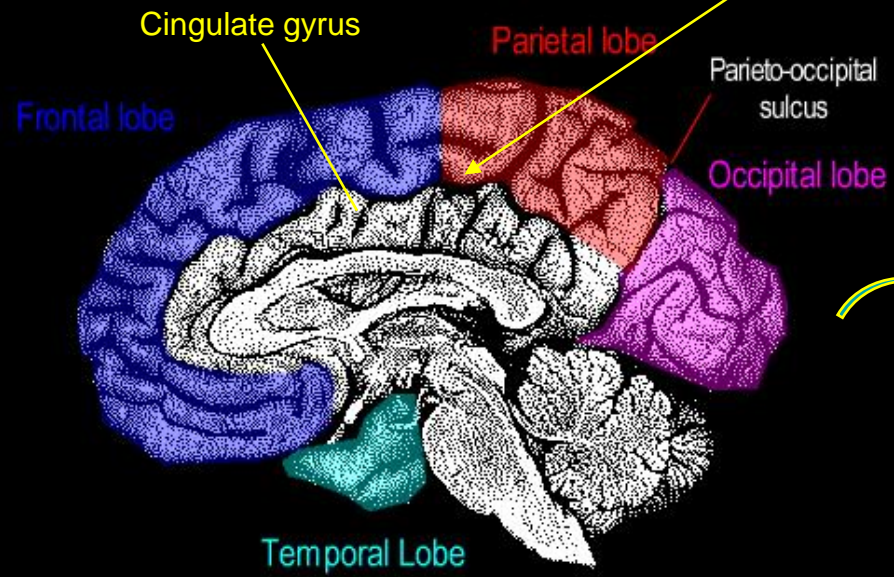
CT Limitations

- There is radiation
- Bone artifact obscures visualization, especially posterior fossa and spinal cord
- Not very sensitive to intraparenchymal lesions or brain edema
- Noncontrast CT misses many abnormalities
- Risk of allergic reaction to iodinated contrast media

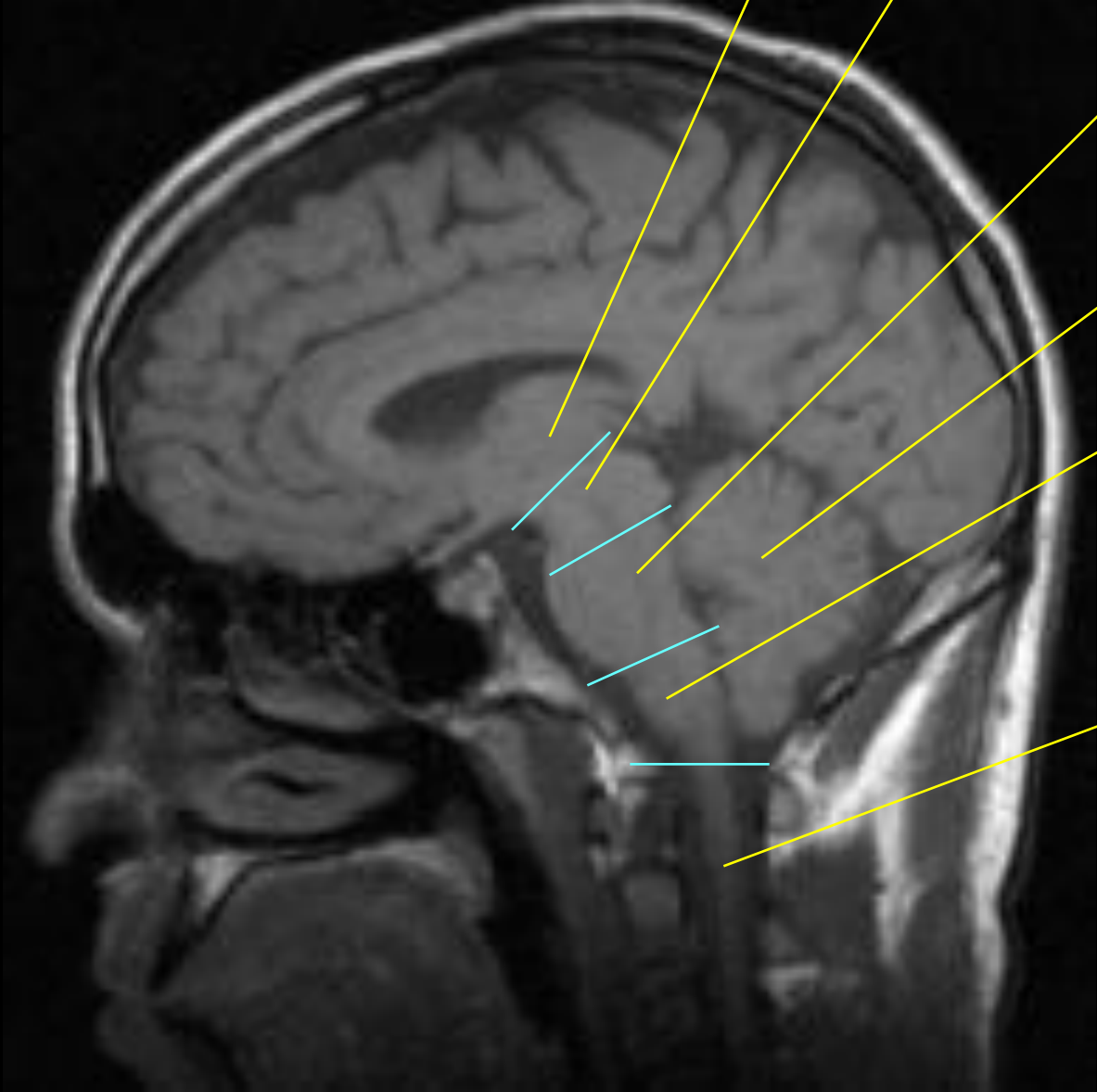
Brain Anatomy Review



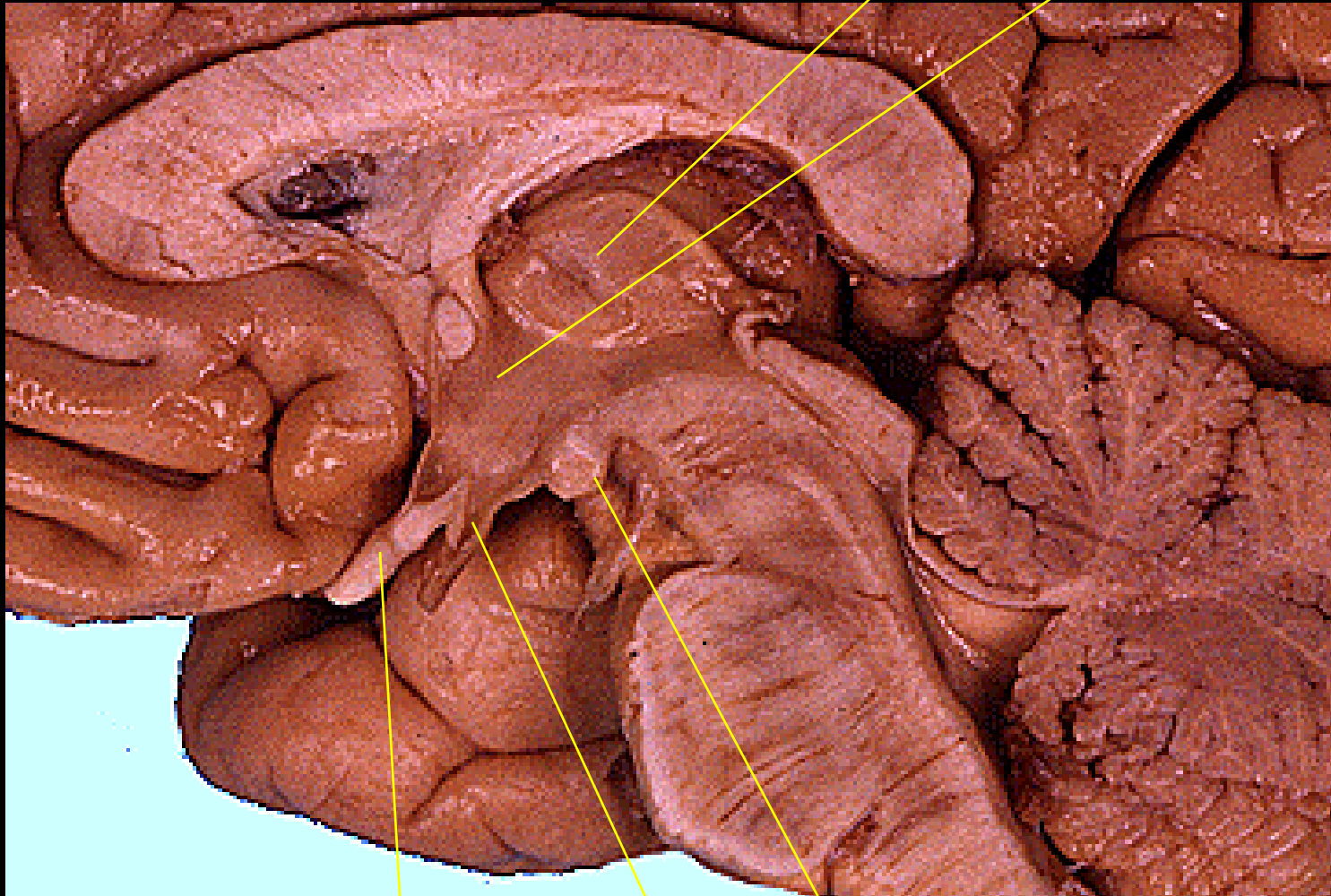
The anatomic origin of the foot fetish. K. Clark



Major brainstem divisions



Diencephalon



1

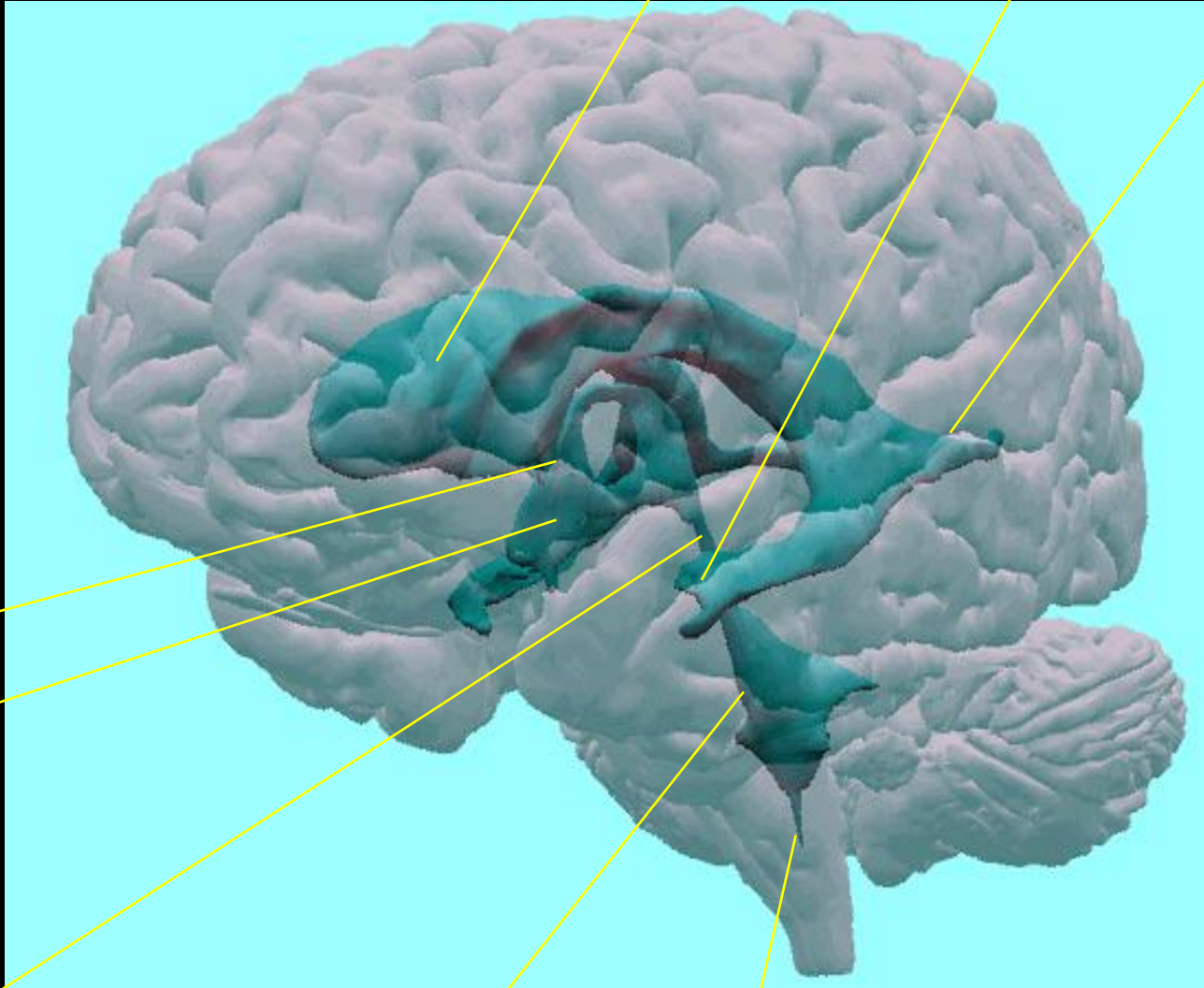
2

5

4

3

Ventricular system



1

2

3

4

5

6

7

8

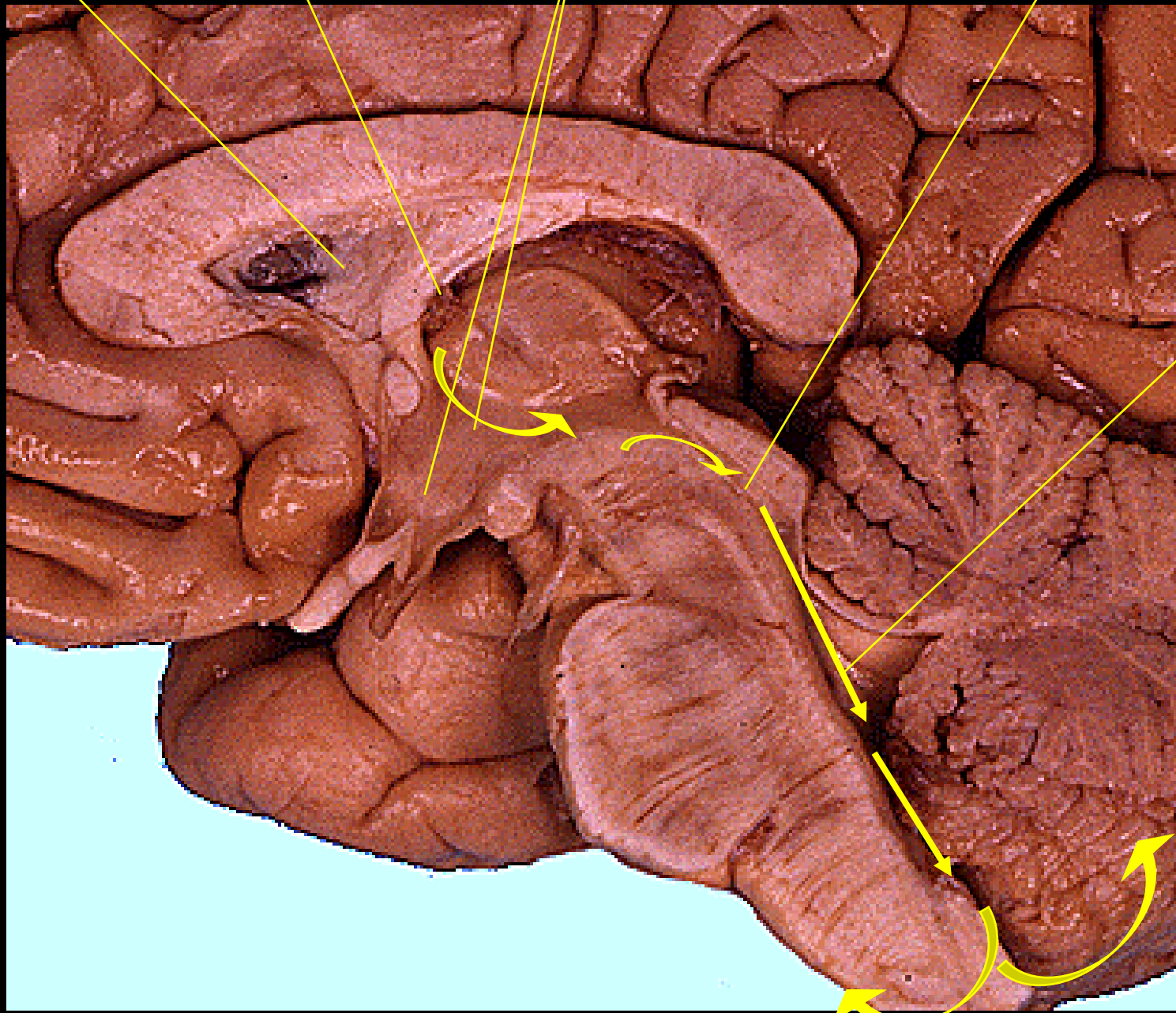
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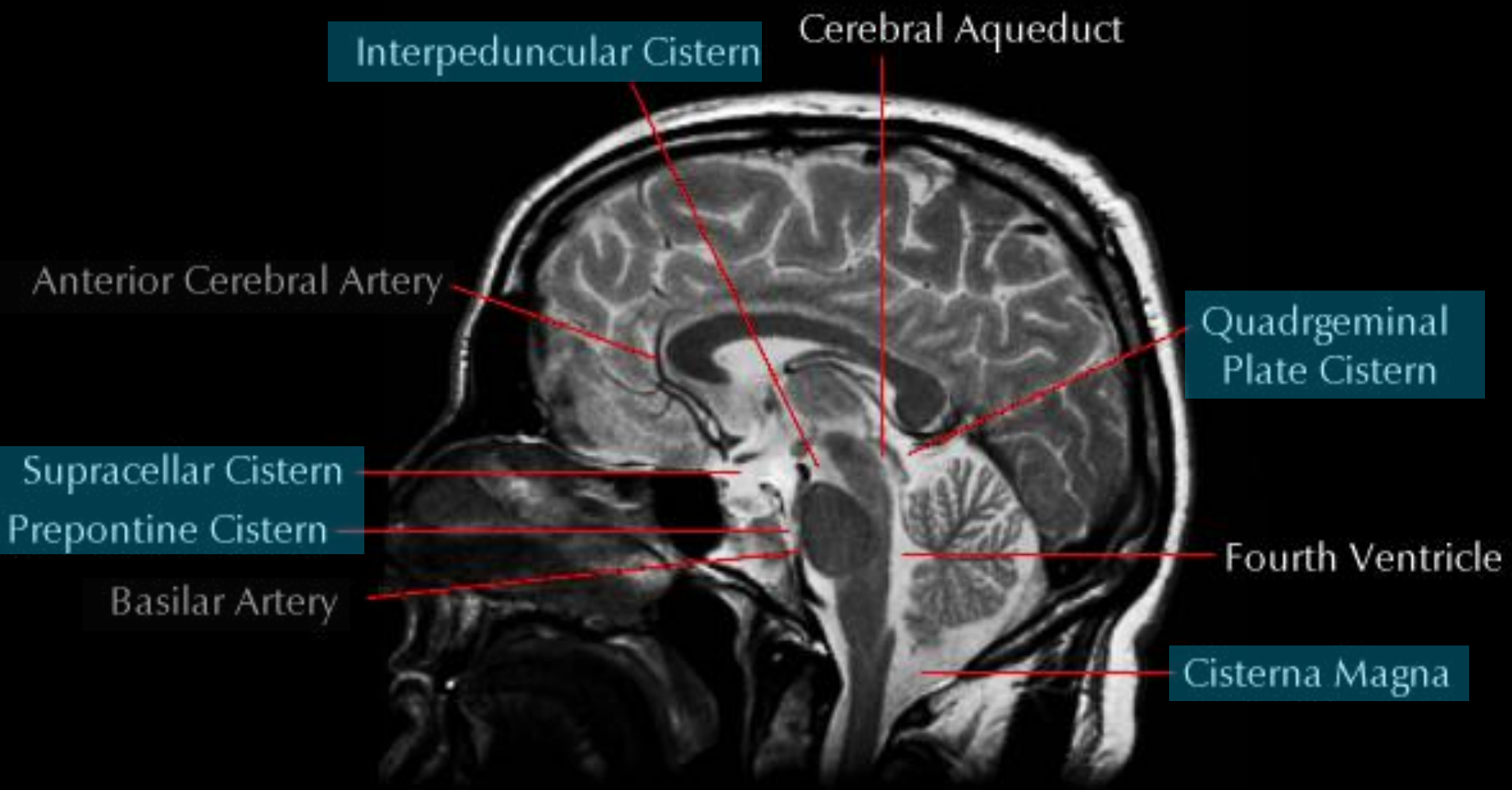
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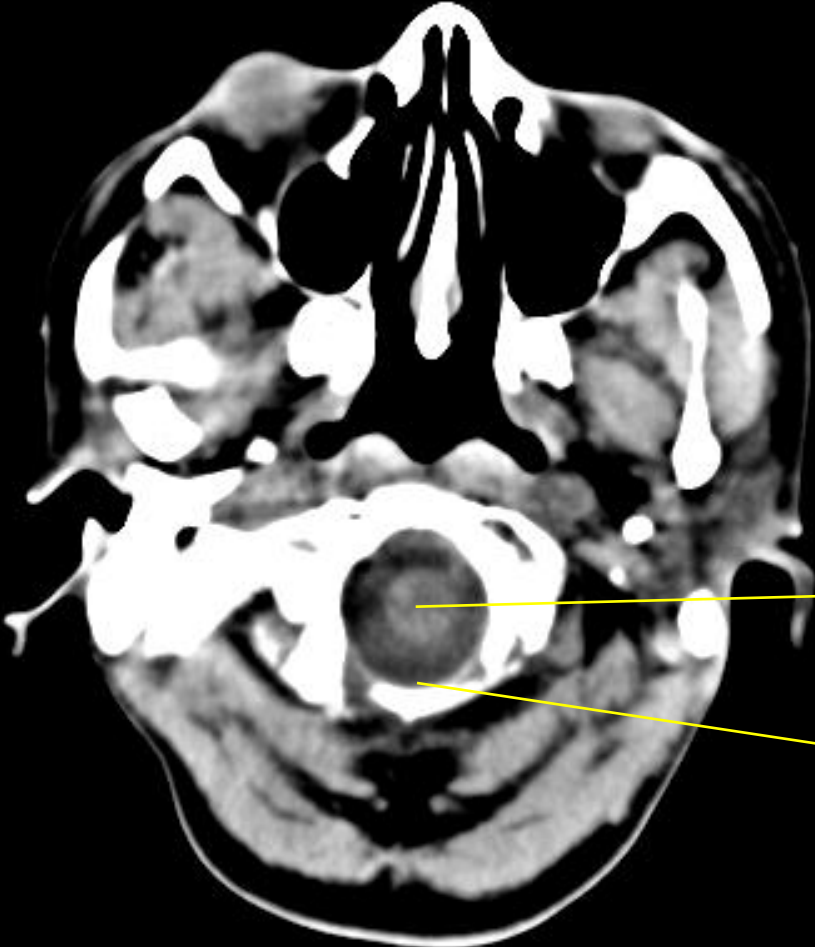
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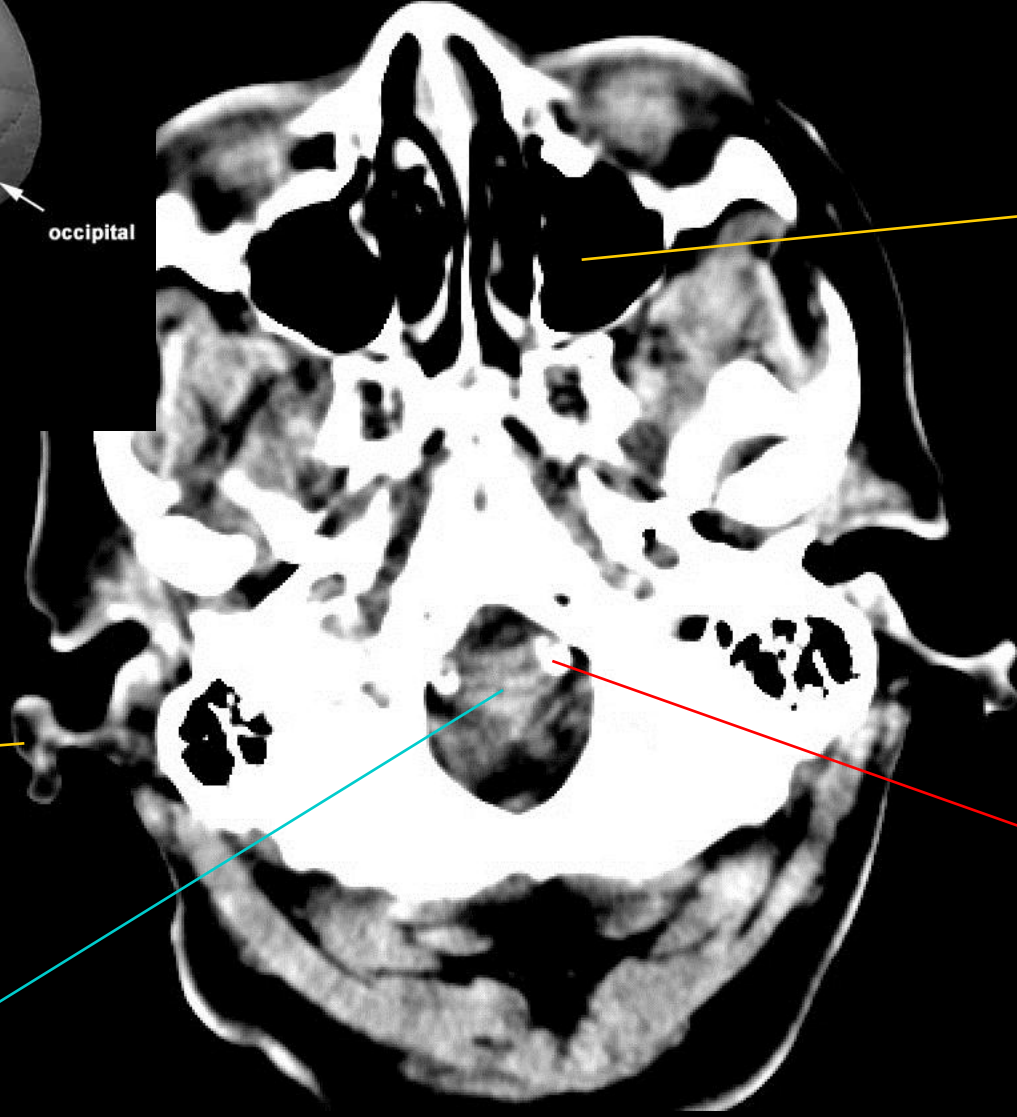
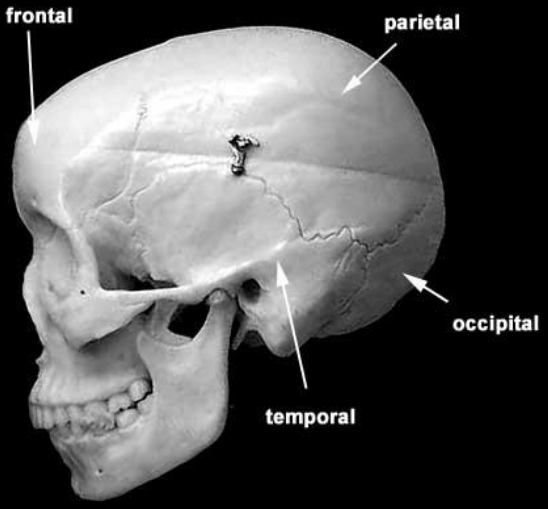


Normal anatomy



1

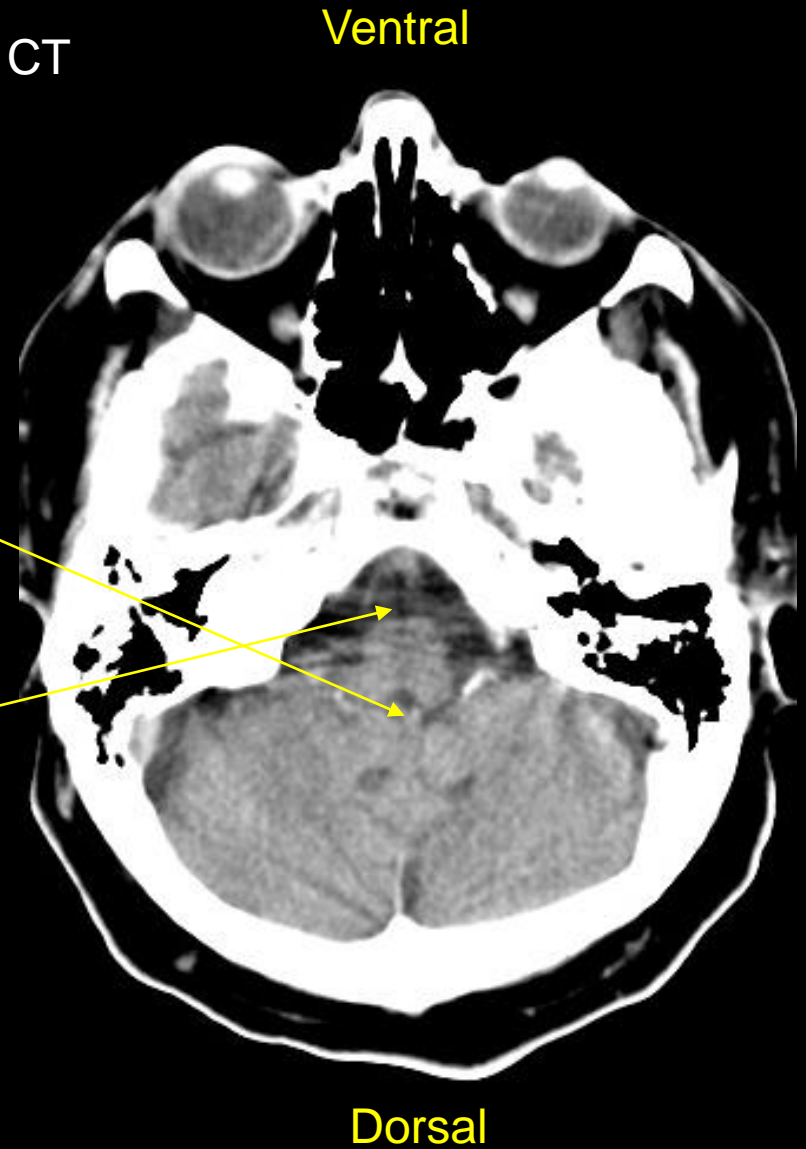
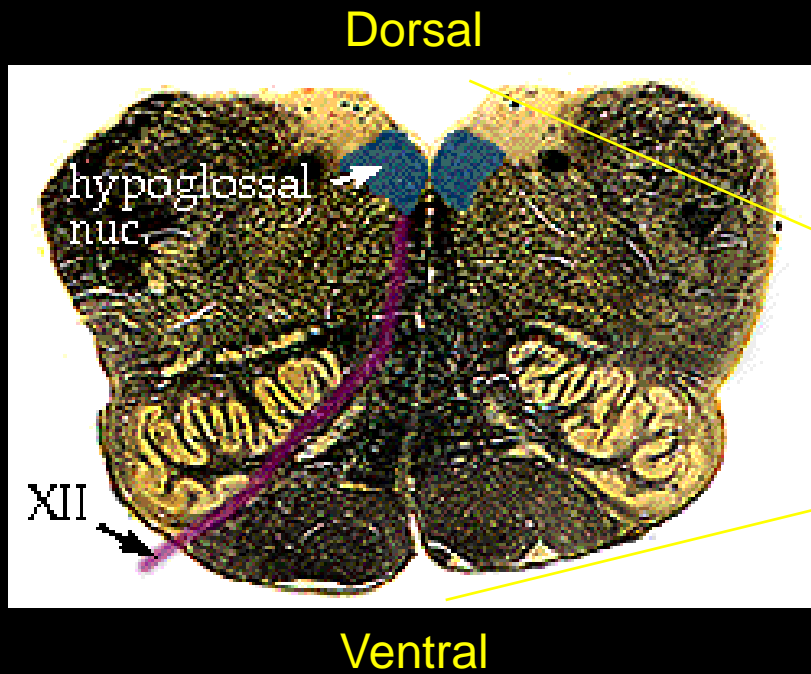
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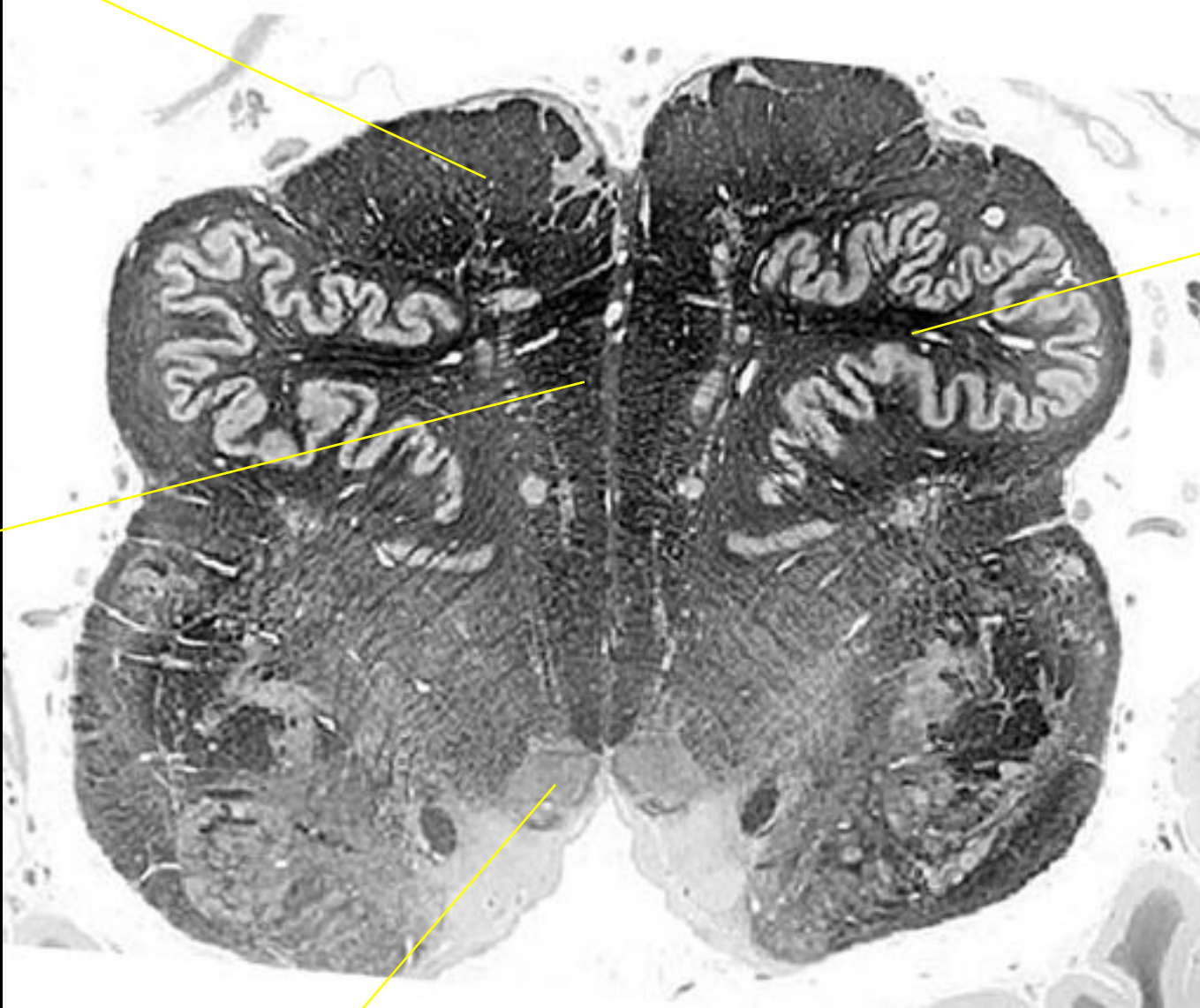


Note Brainstem Orientation!

Neuroanatomy Class

CT



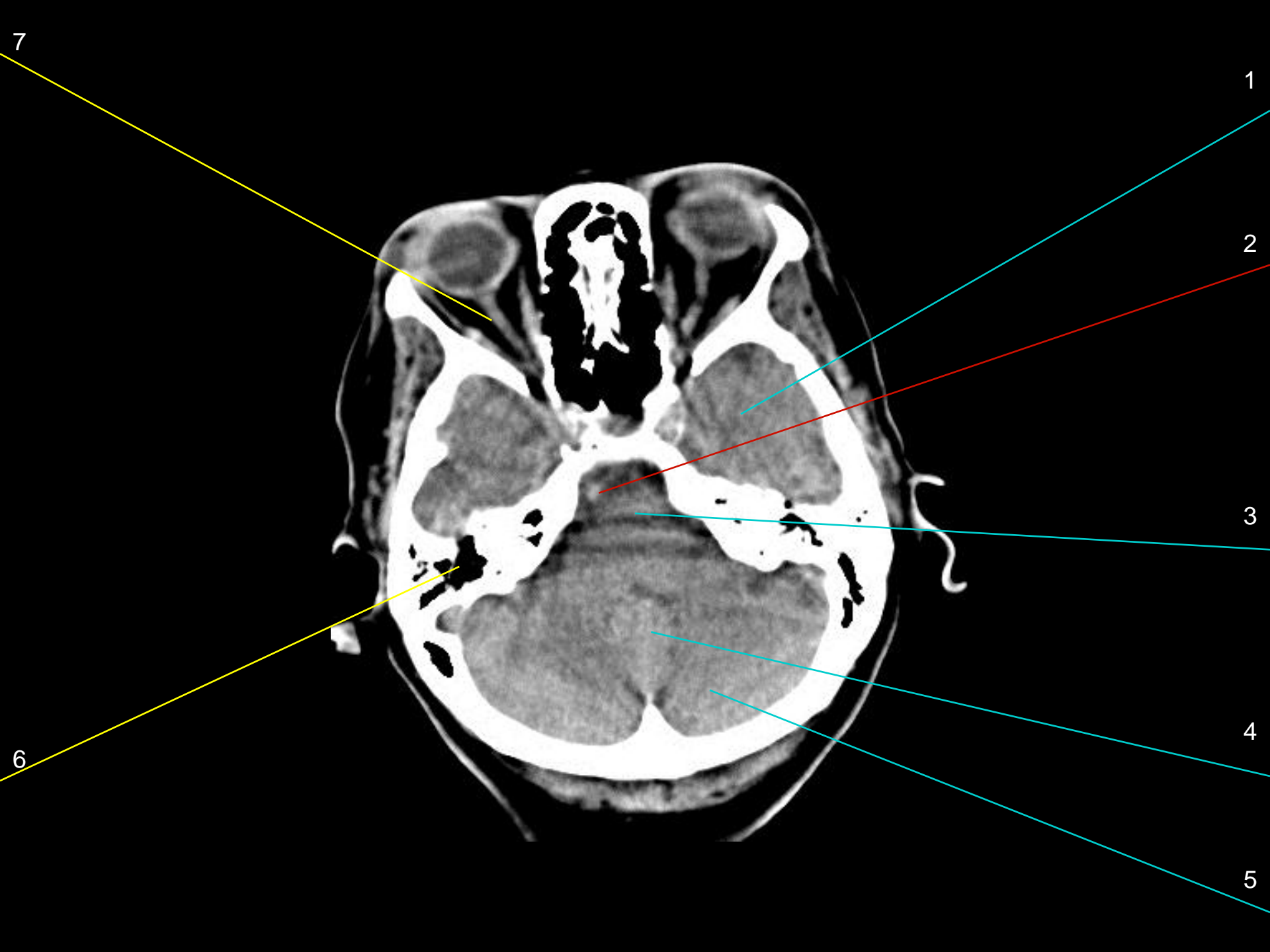


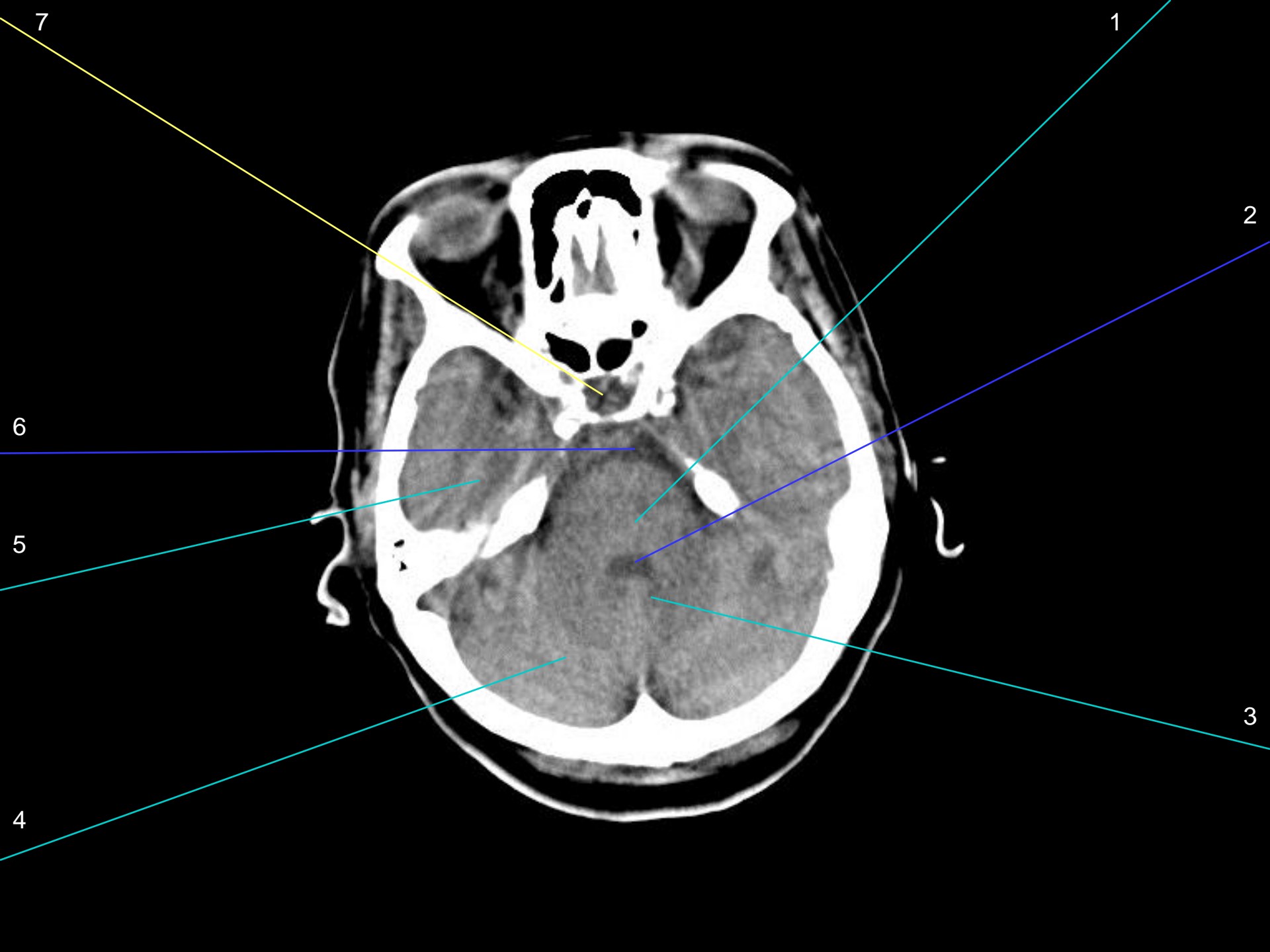
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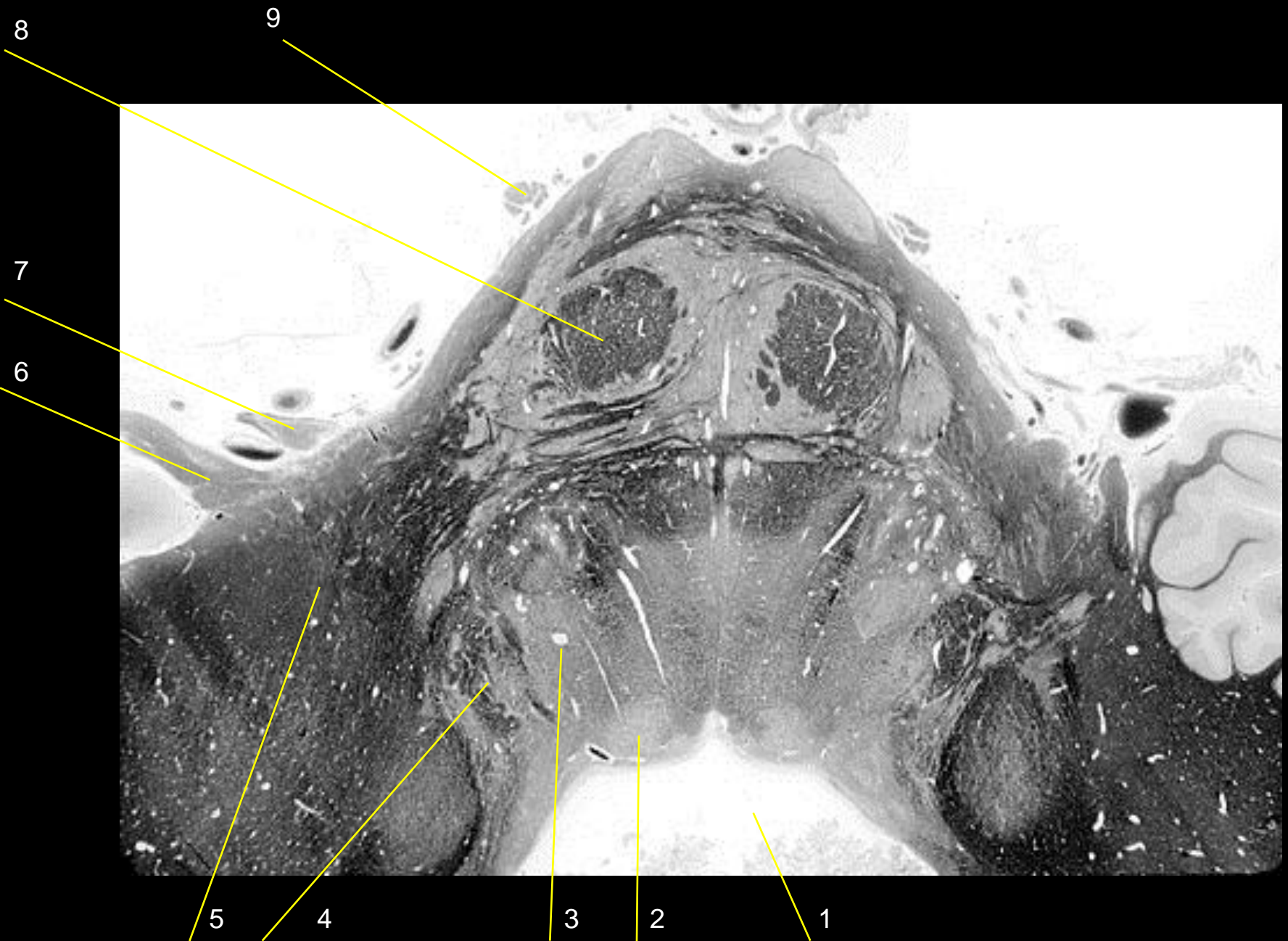
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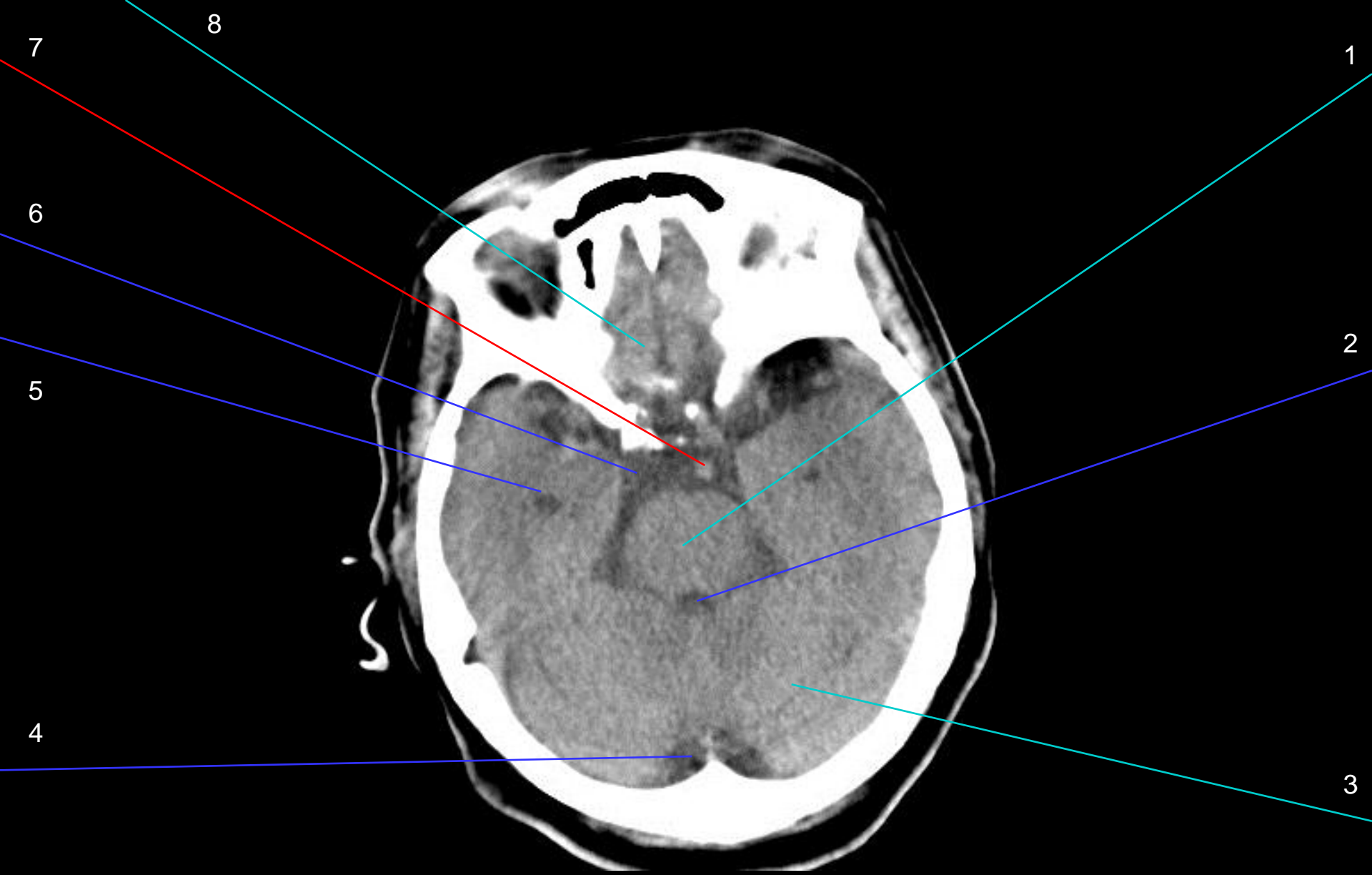
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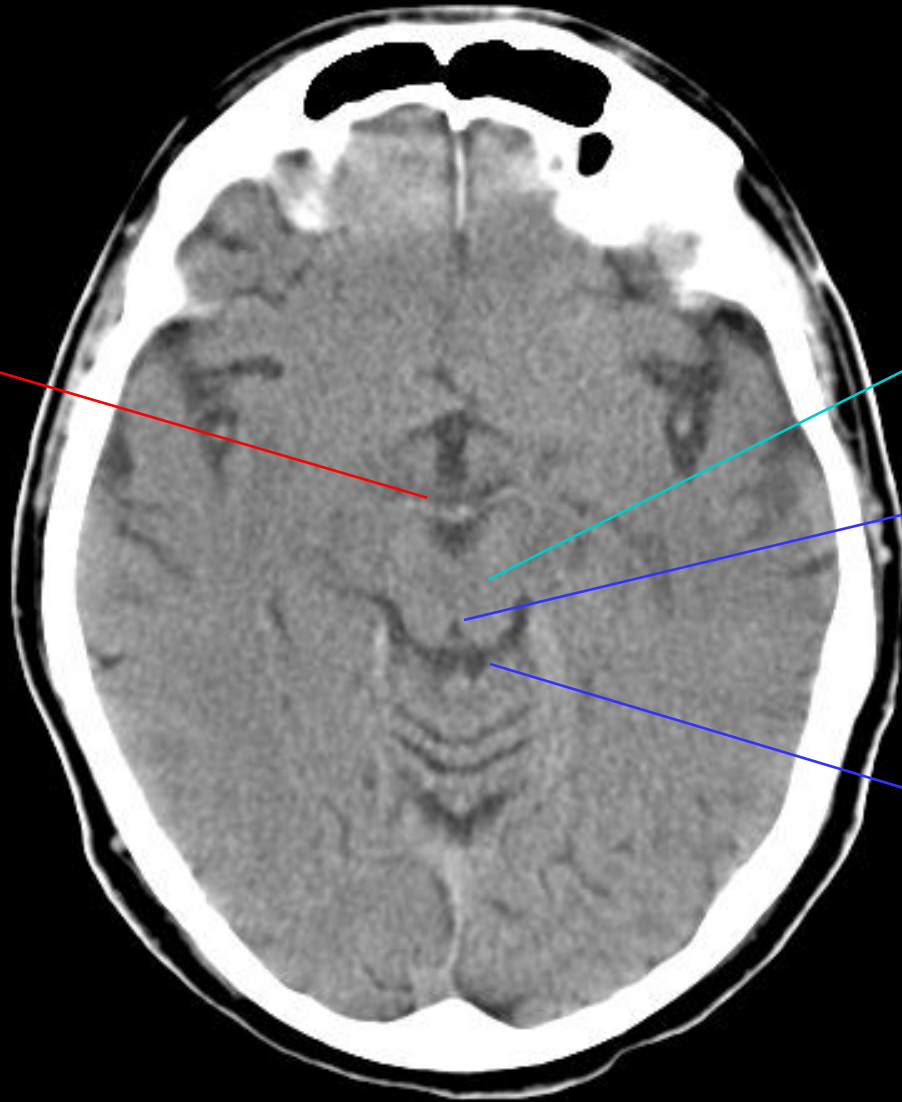
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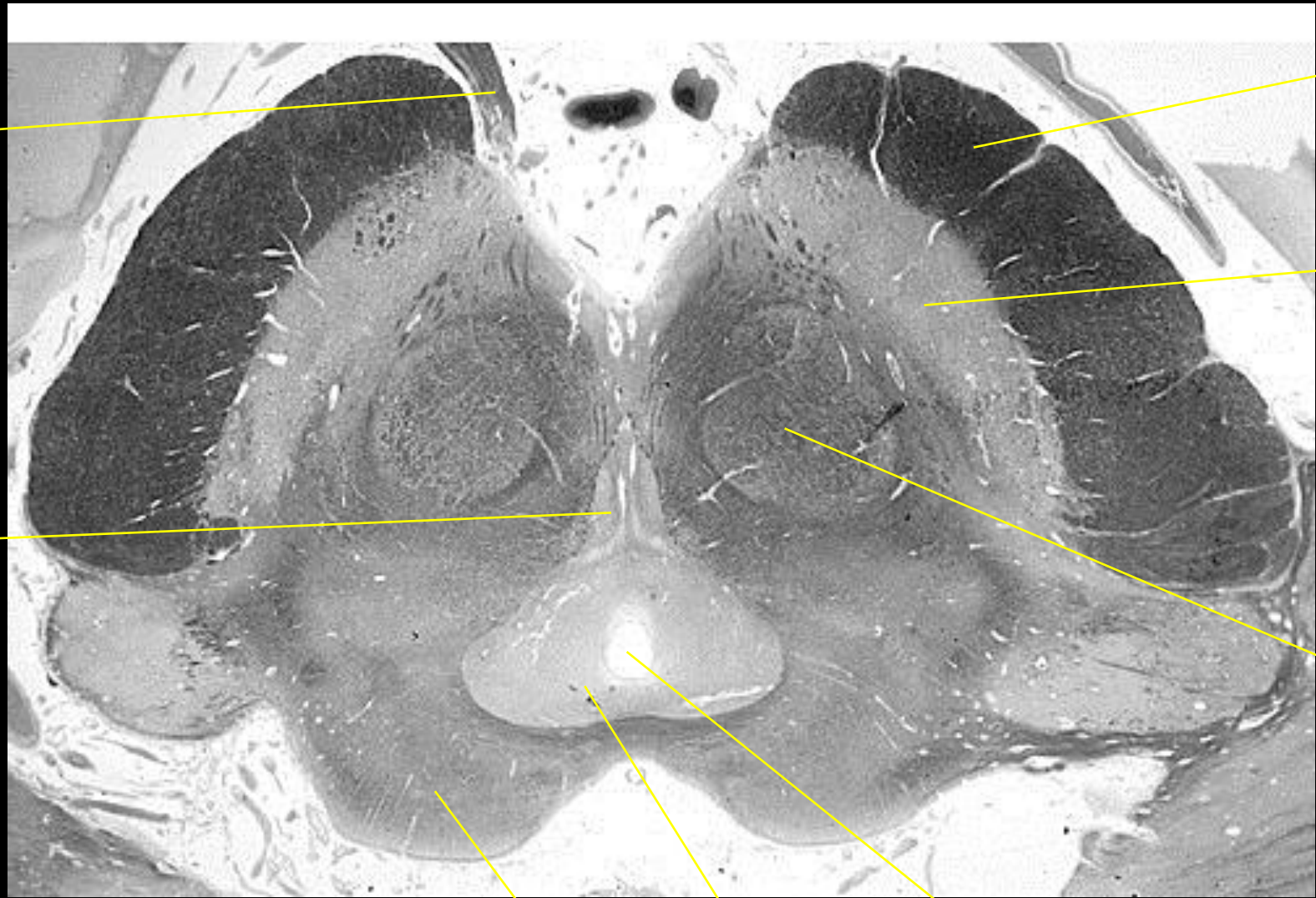


4

1

2

3



1

2

3

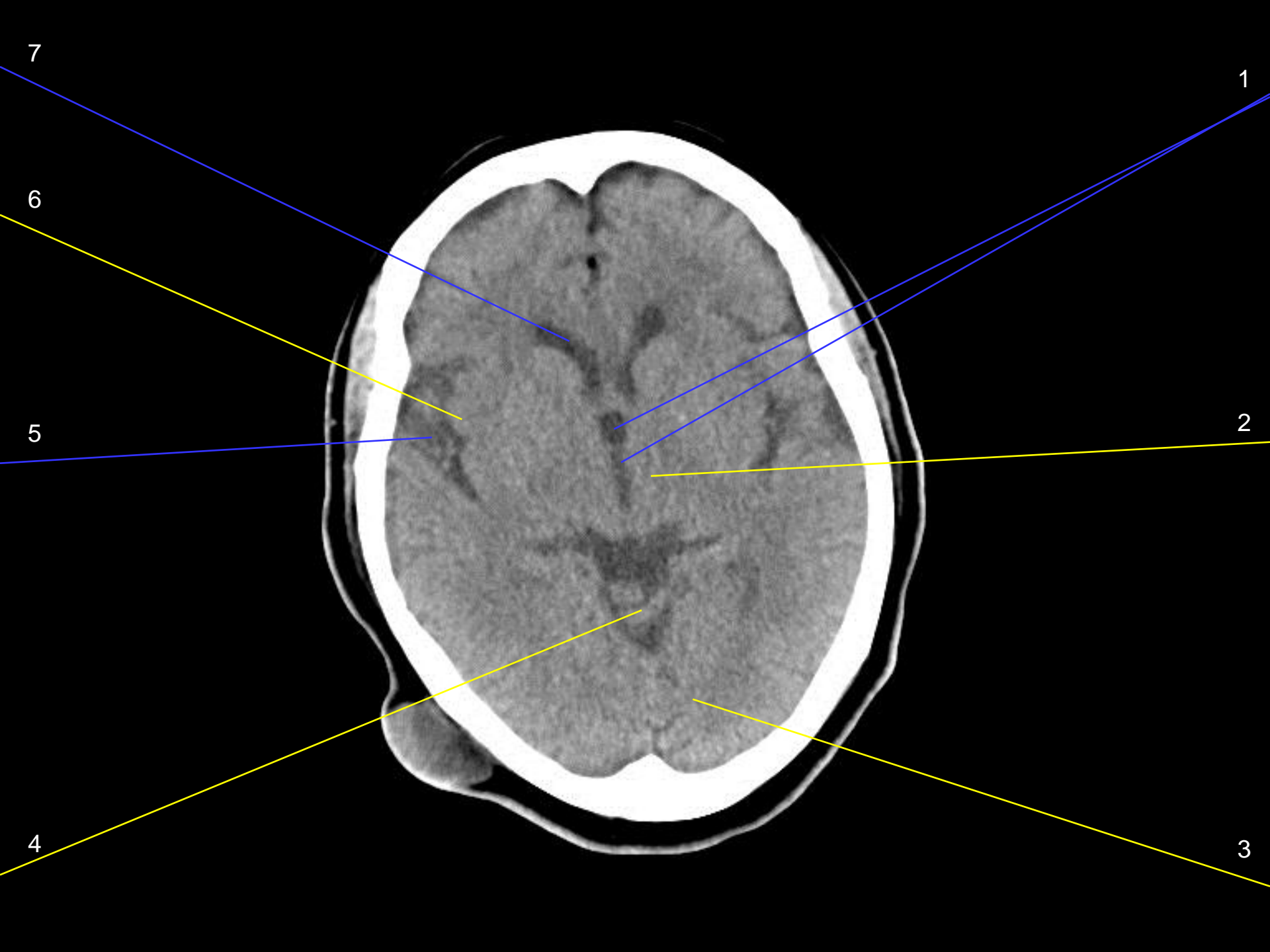
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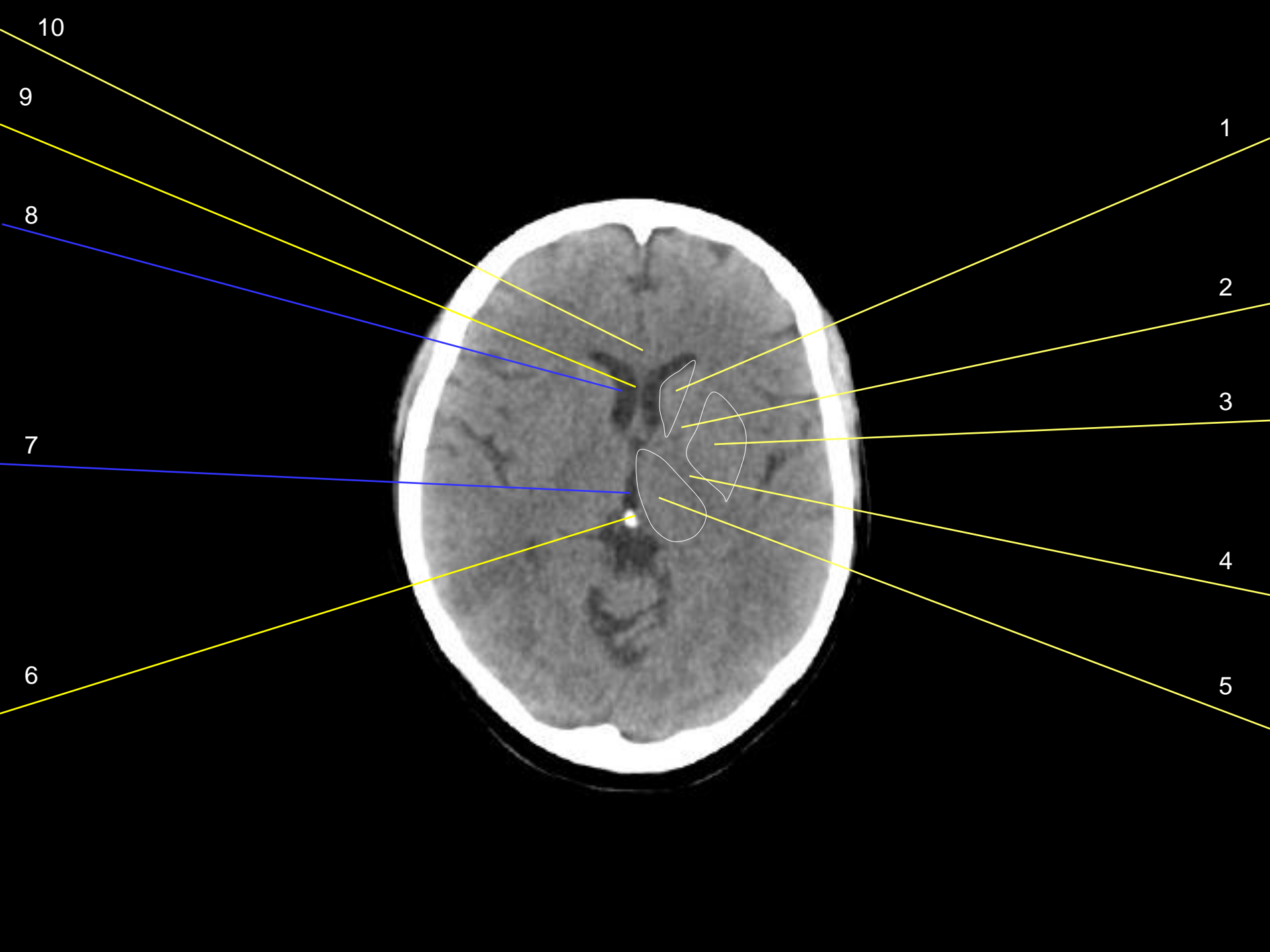
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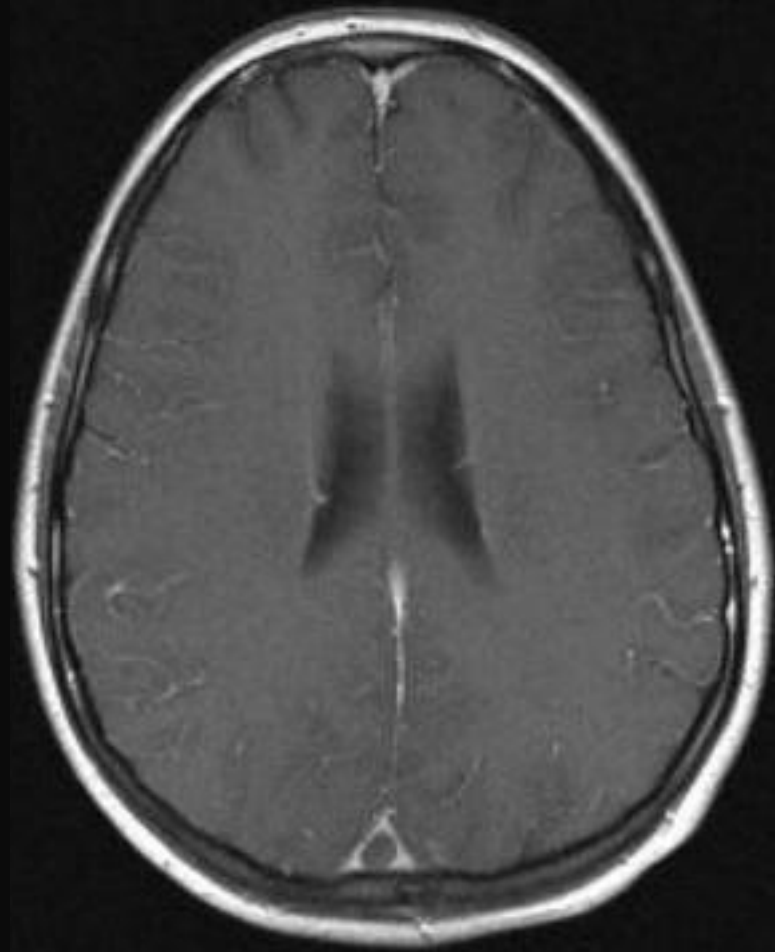
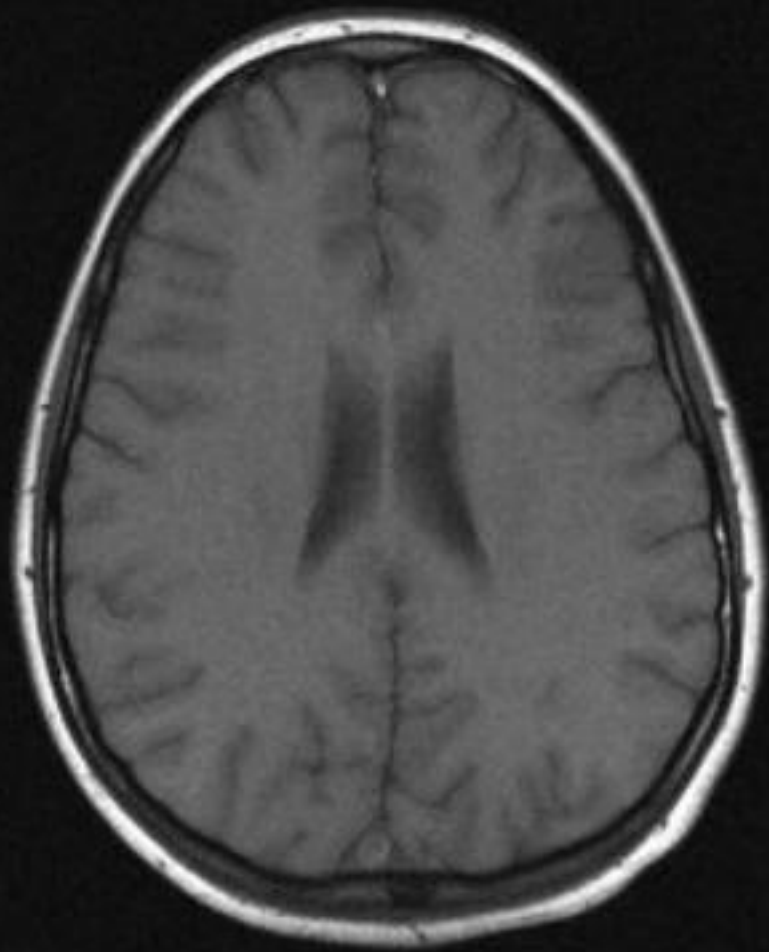
A calcified, ciliated, CSF-producing mucosal structure. C. Hou

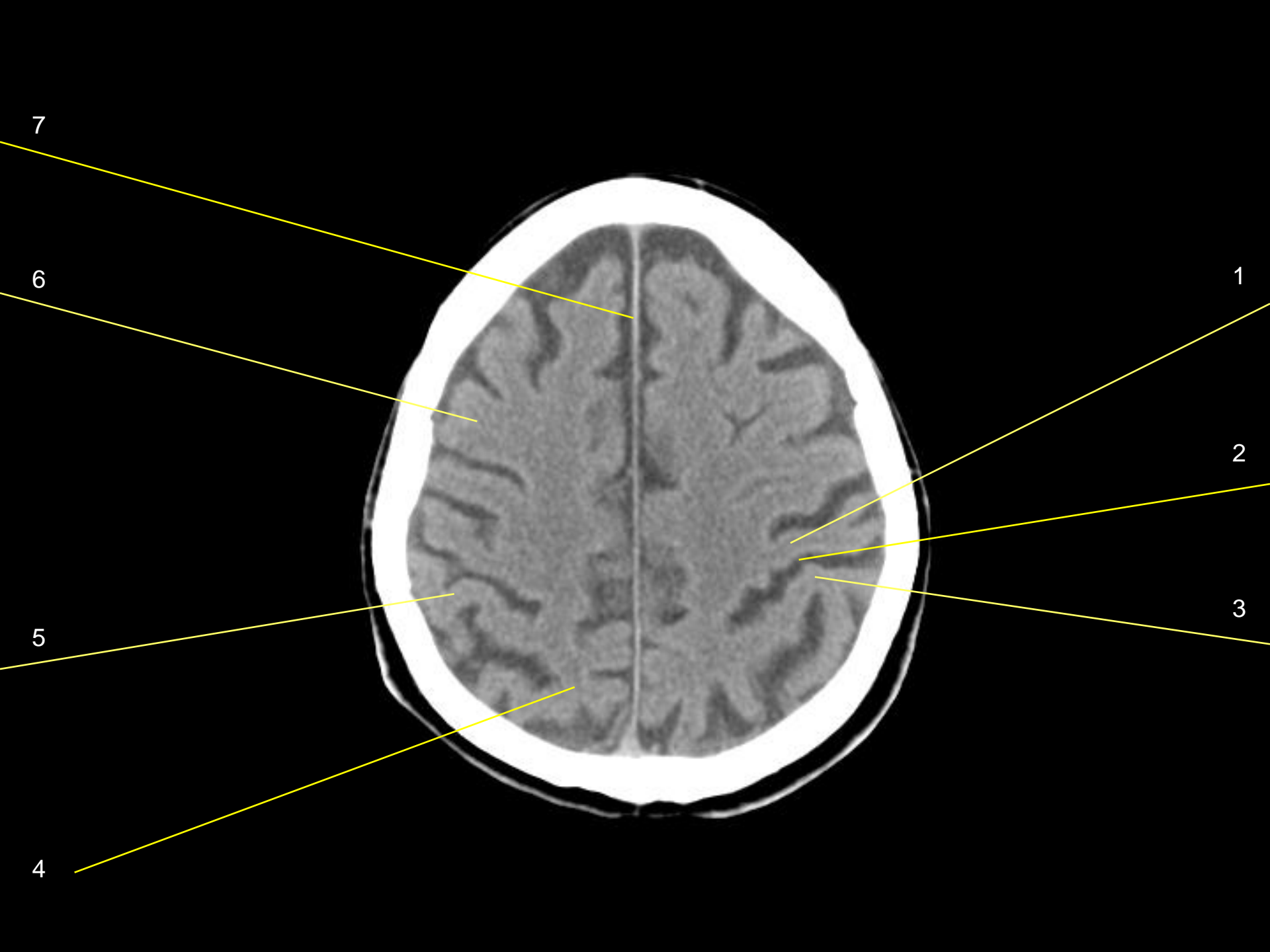
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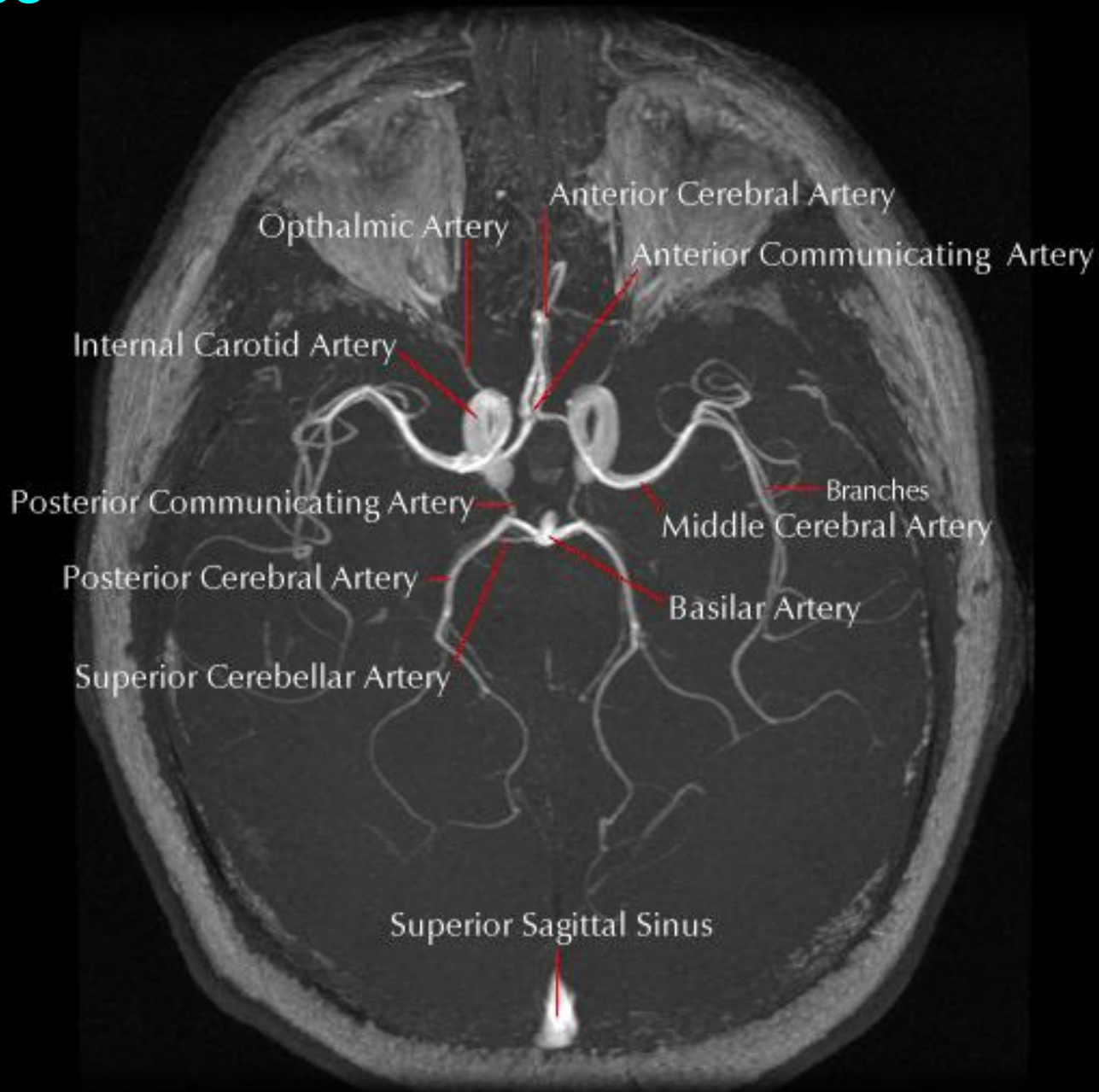
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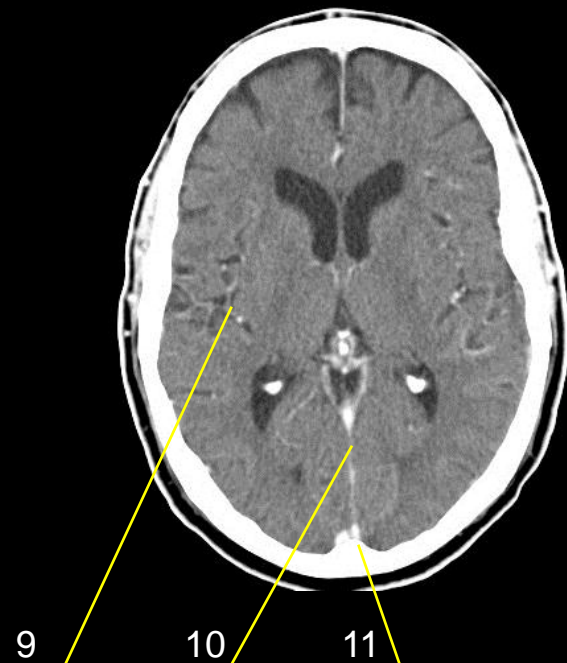
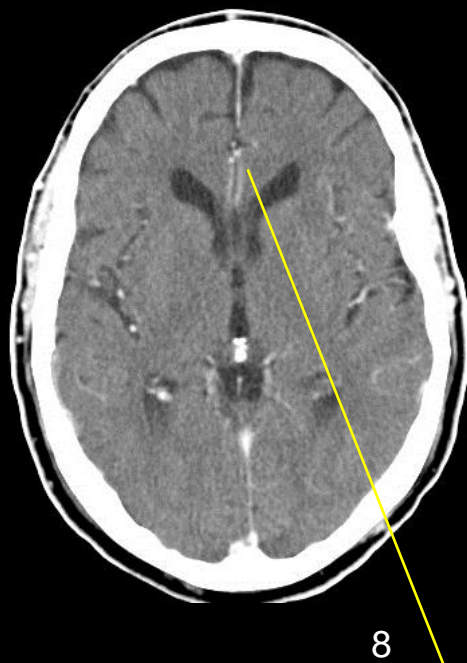
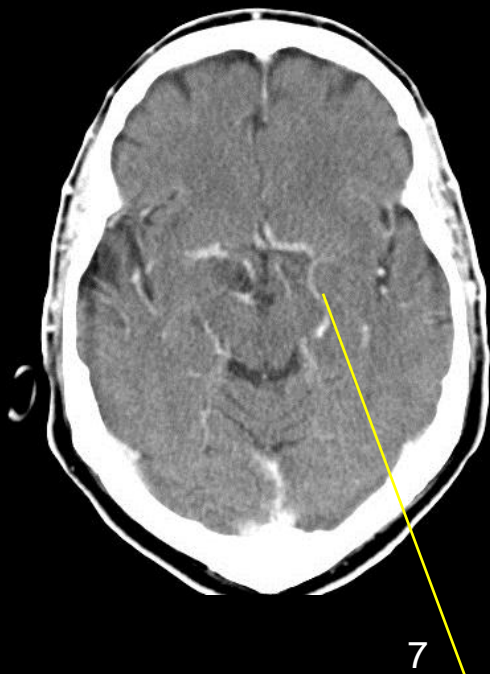
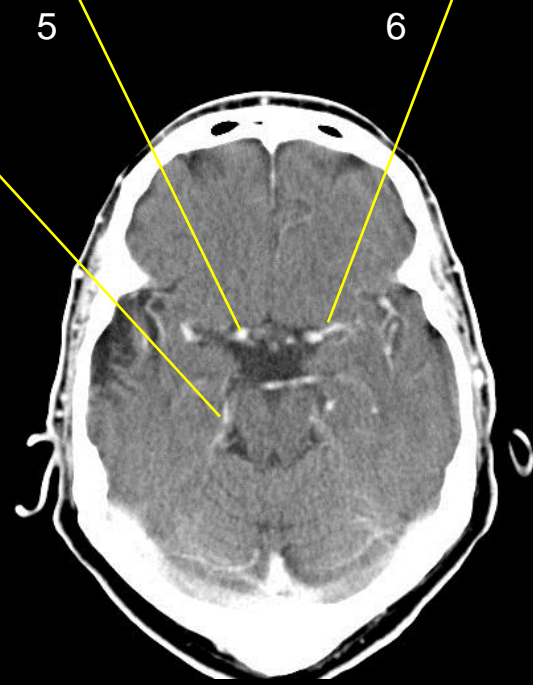
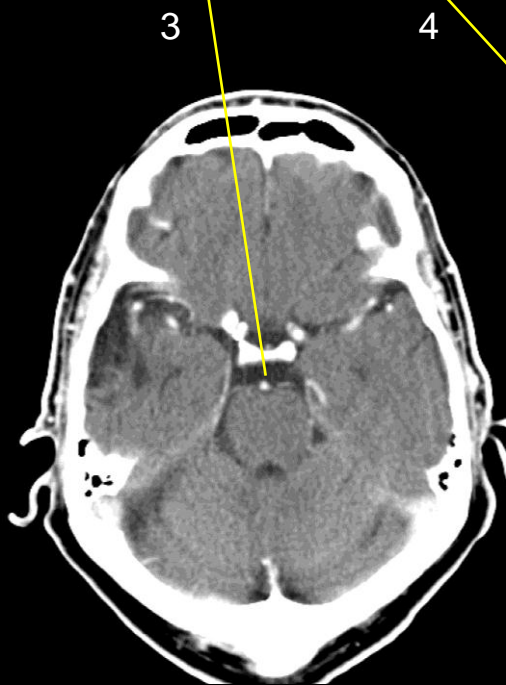
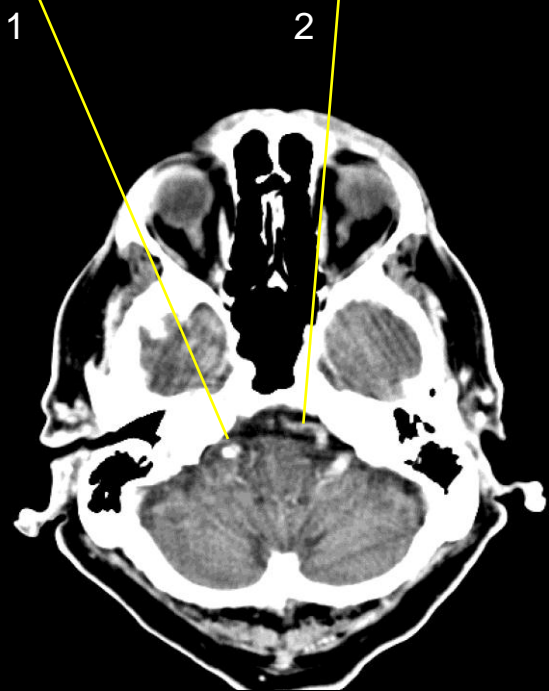
2





Arteries





Abnormal head CT

An order for reading scans

- Patient, type of scan, indication, level
- Quality of scan
- Cranial and extracranial structures
 - ◆ (White spaces)
- Ventricles, cisterns, and sulci
 - ◆ (Black spaces)
- Brain parenchyma
 - ◆ Hemorrhage
 - ◆ Lesions

Describe lesions

- Location
- Density
- Margins
- Effects
- Associated findings
- Temporal progression

- Differential diagnosis

Increased CT brain attenuation

- Hemorrhage (acute)
- Calcium
- Contrast
- Metal

Decreased CT brain attenuation

- Ischemia
- Infection
- Neoplasm
- Trauma
- Edema
- Hemorrhage (old)