

NEUROANATOMY REVIEW

BASICS CONCEPTS

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UNIVERSITY OF NAIROBI

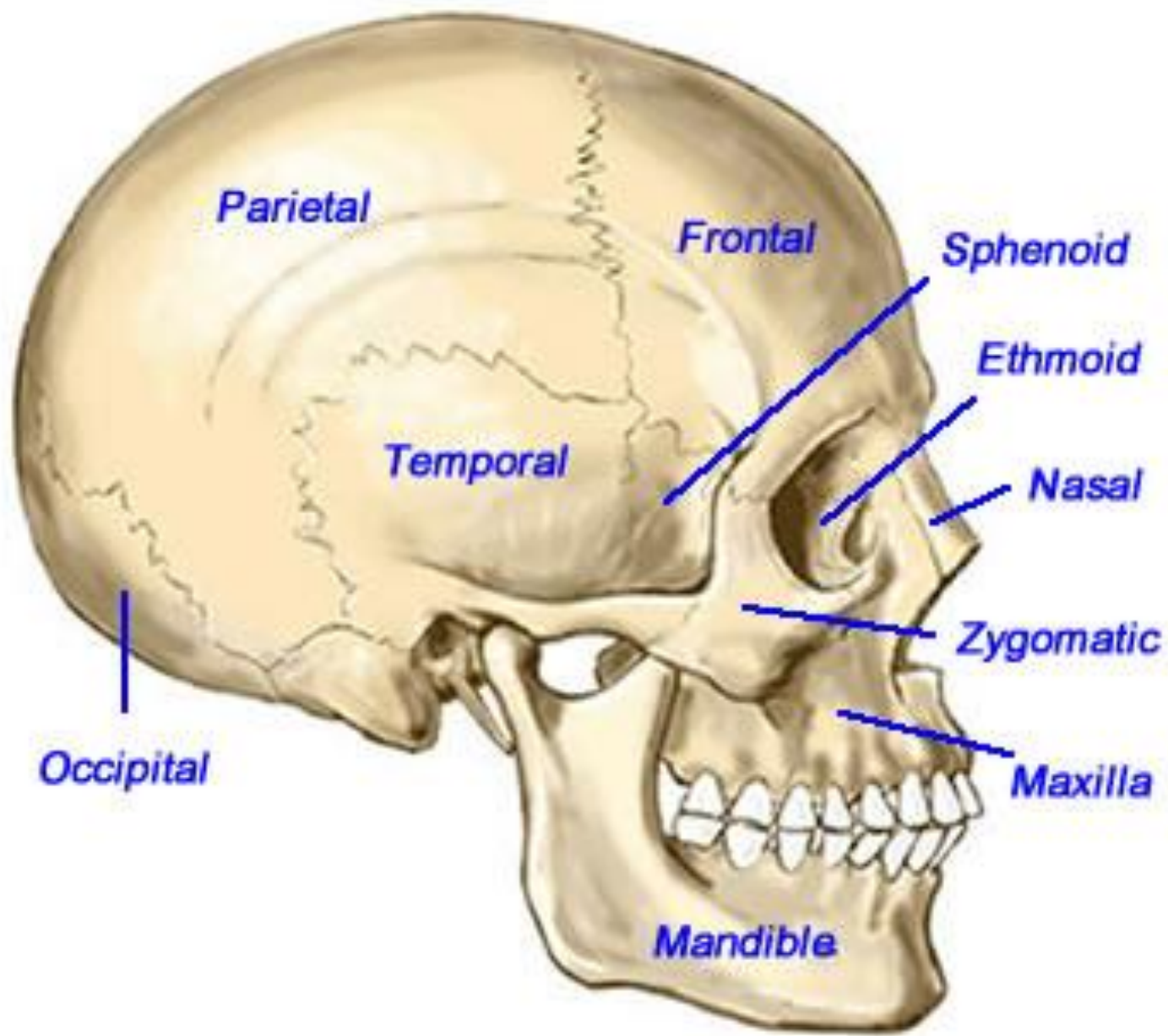


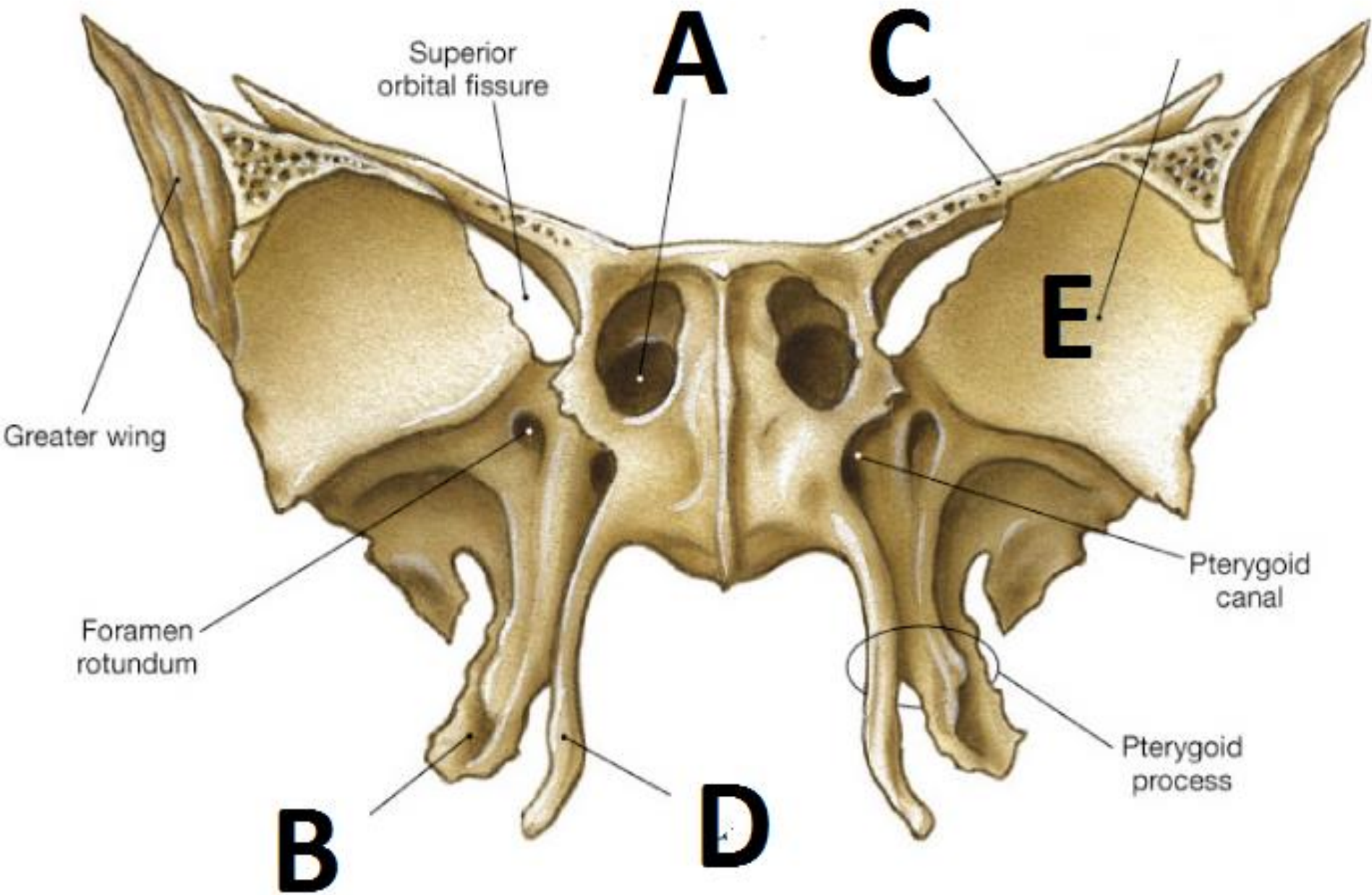
SCOPE

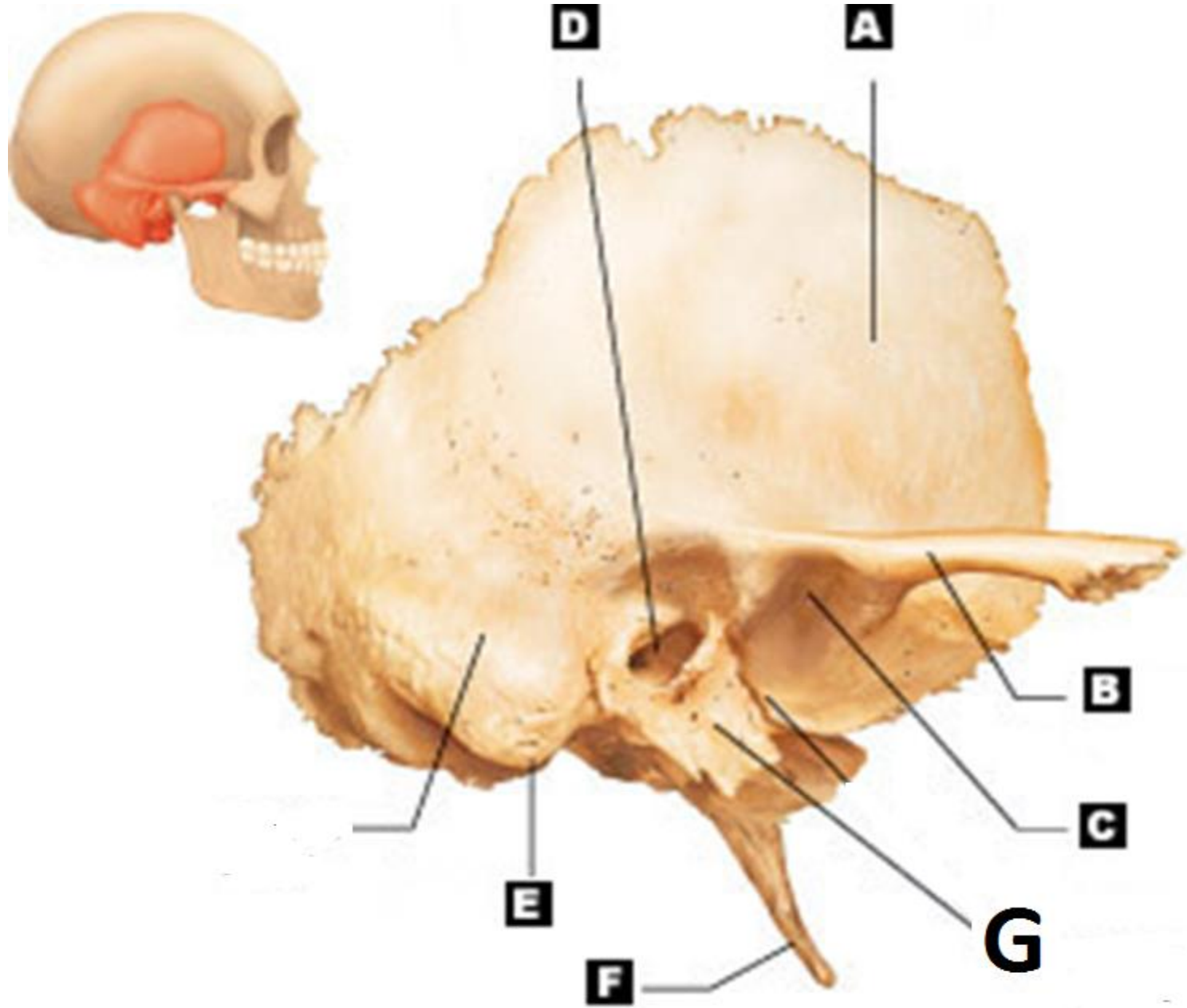
1. CEREBRAL CORTEX AND FUNCTIONAL LOCALIZATION
2. DIENCEPHALON
3. BASAL GANGLIA
4. LIMBIC SYSTEM
5. BLOOD SUPPLY AND VASCULAR SYNDROMES

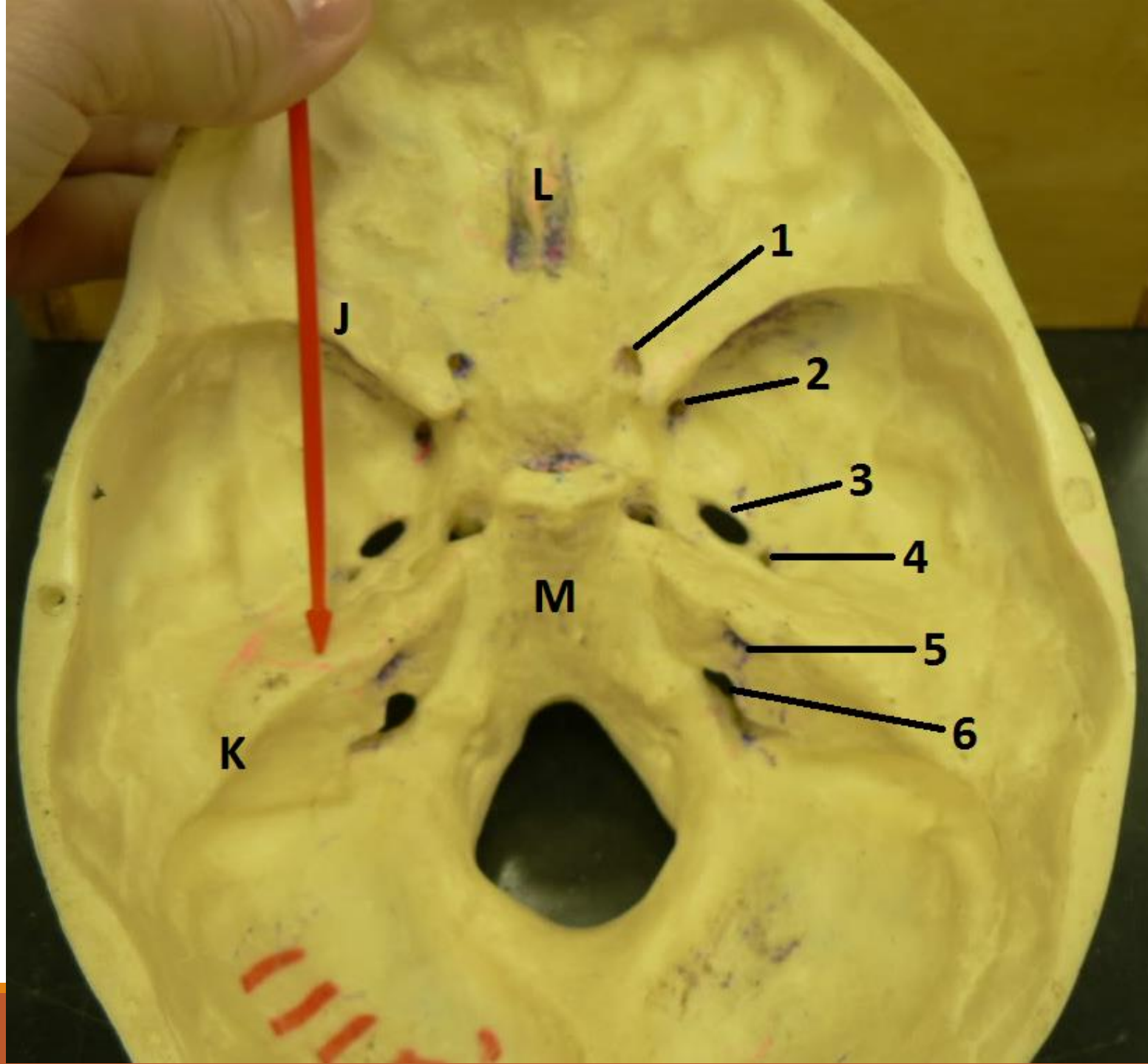
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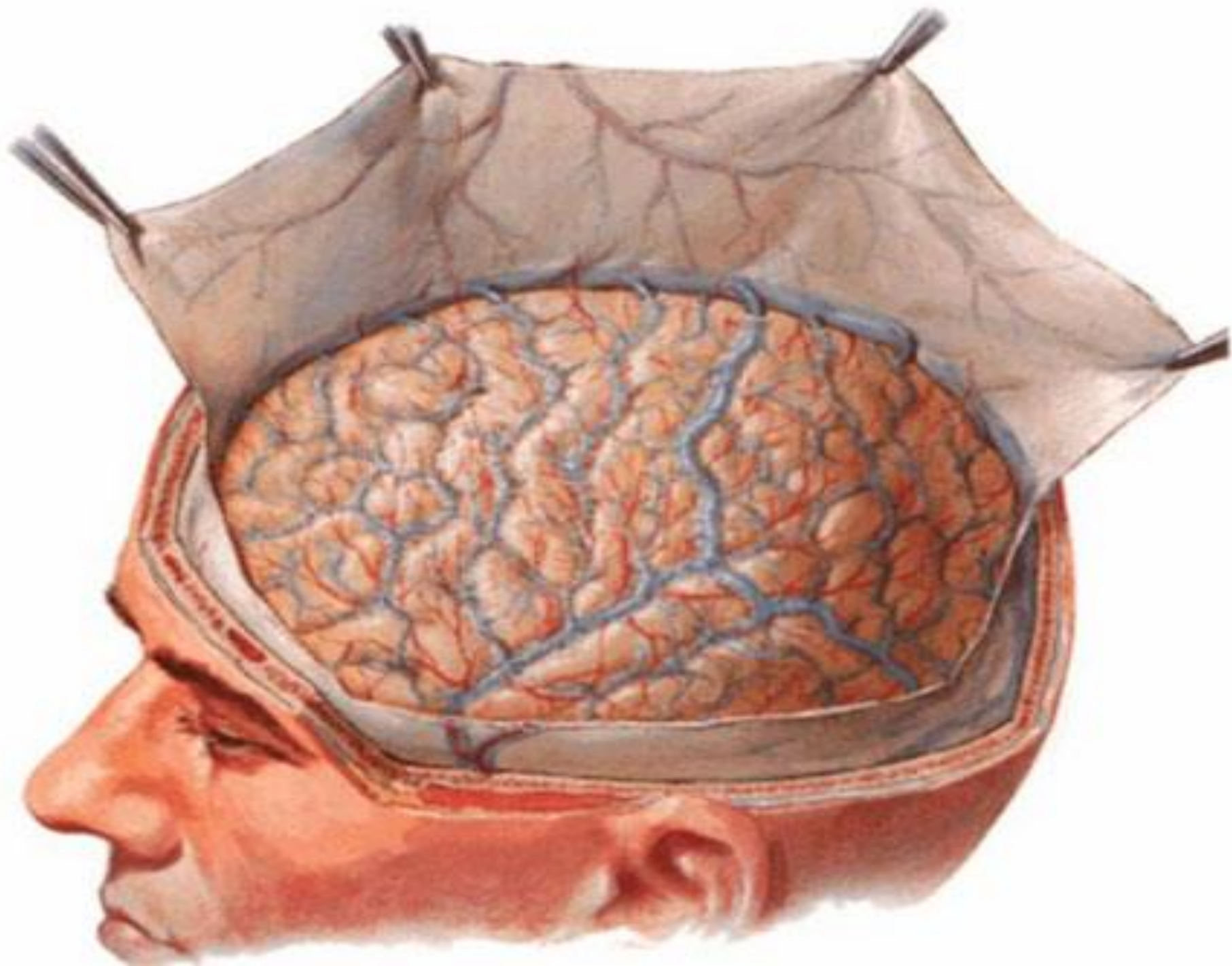
1. BRAIN STEM AND CRANIAL NERVE NUCLEI
2. CEREBELLUM AND ITS PEDUNCLES
3. THE SPINAL CORD AND TRACTOLOGY
4. PATHWAY OF CSF FLOW

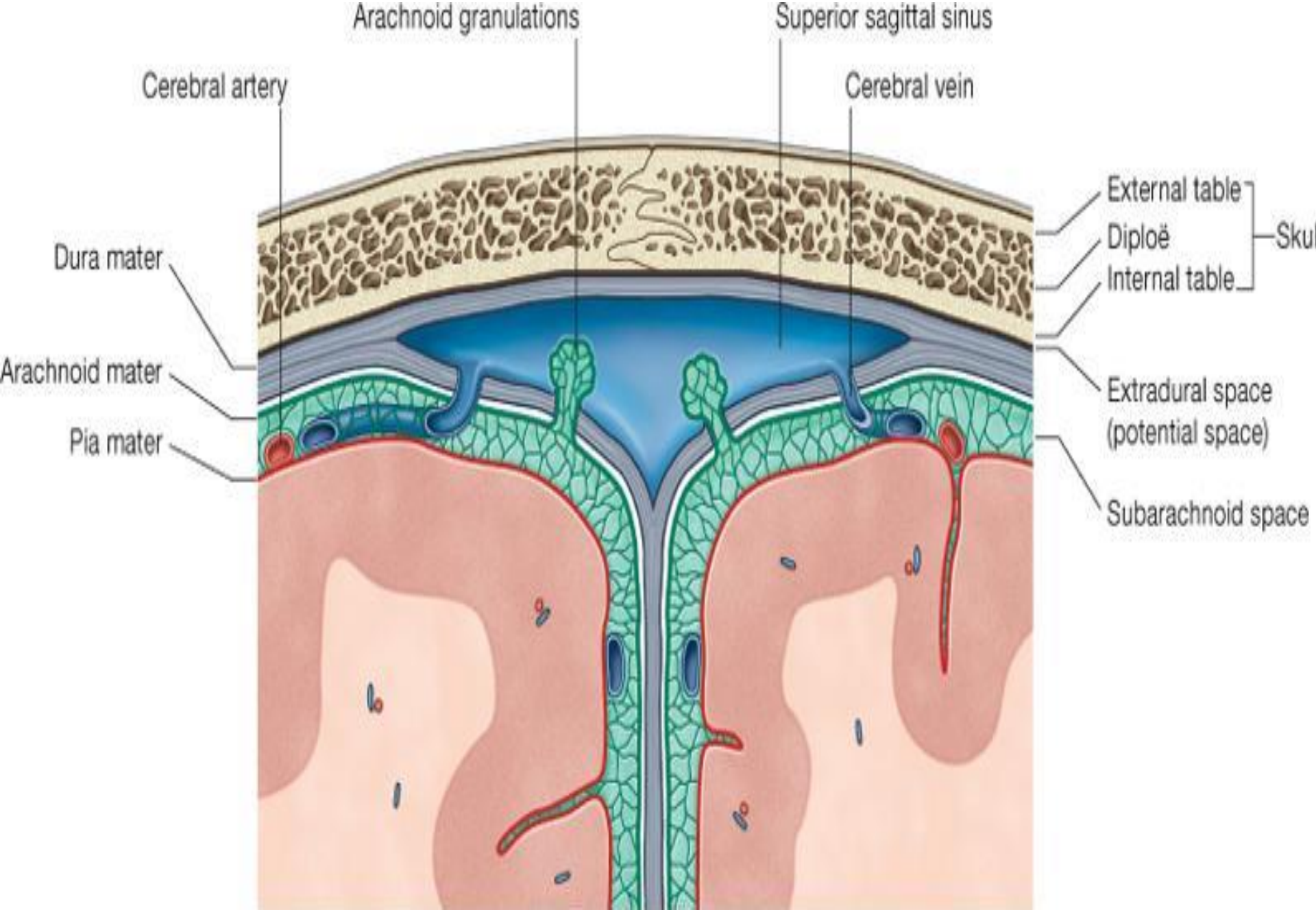


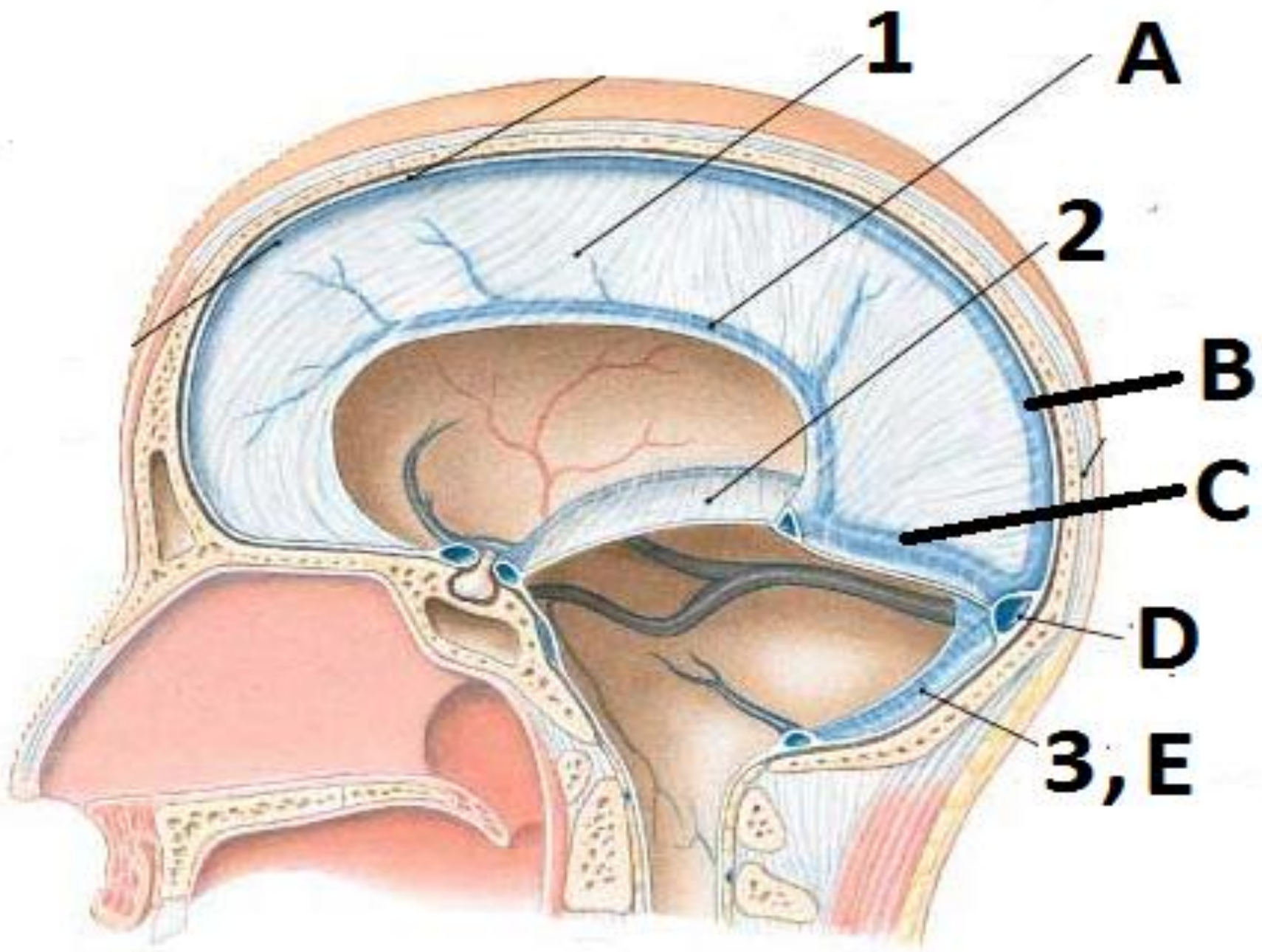












Coronal Section

Hypophysis (pituitary gland)

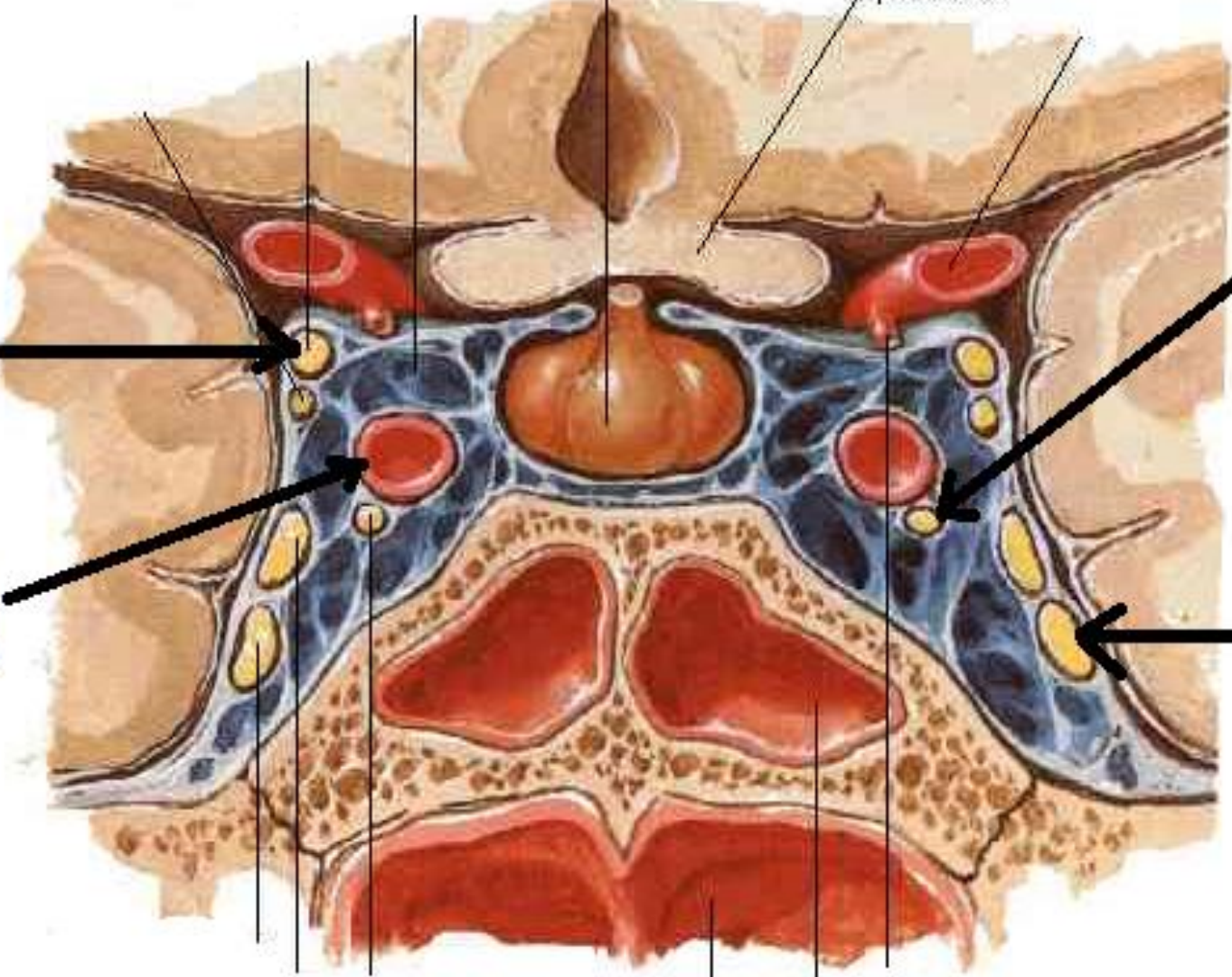
Optic chiasm

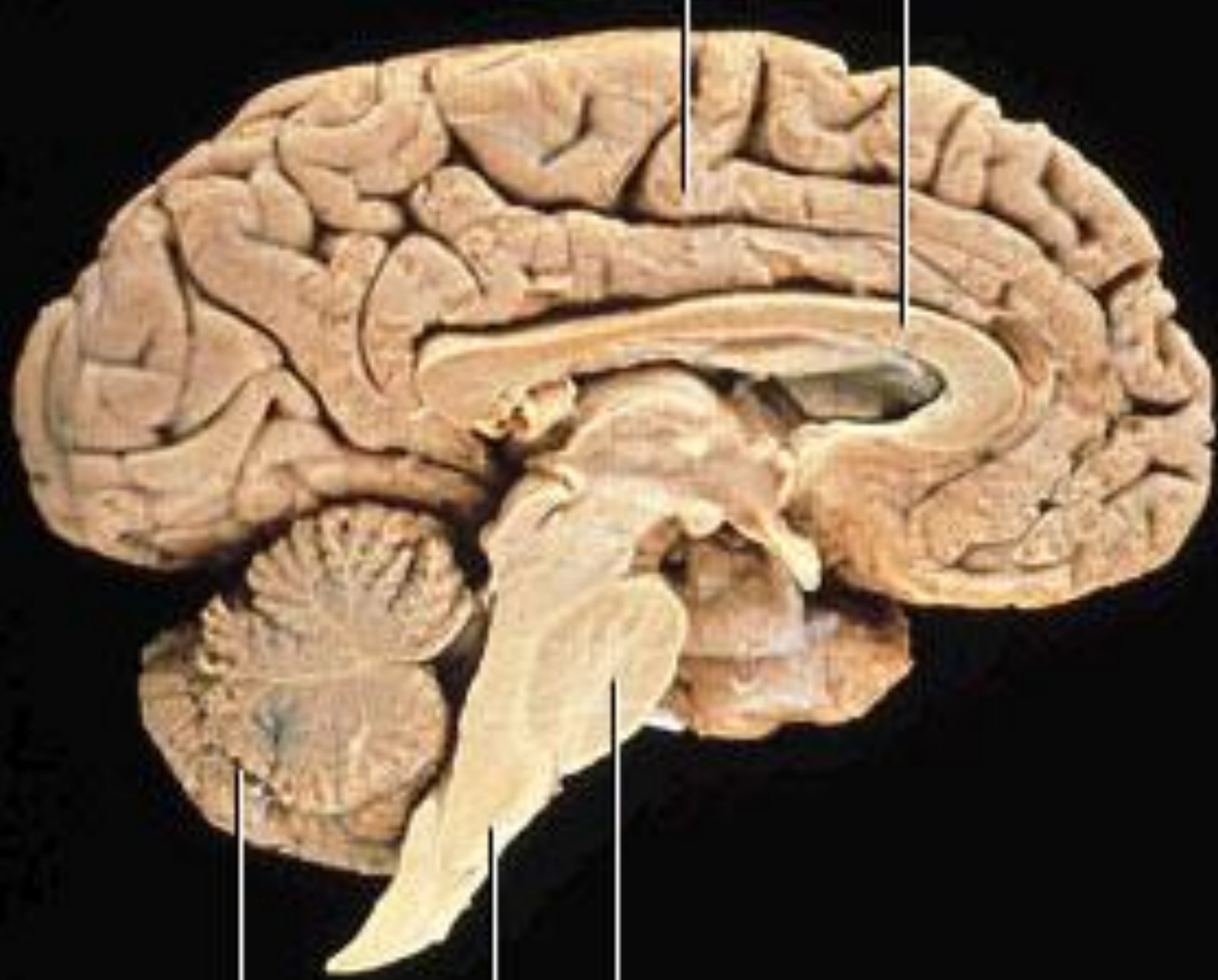
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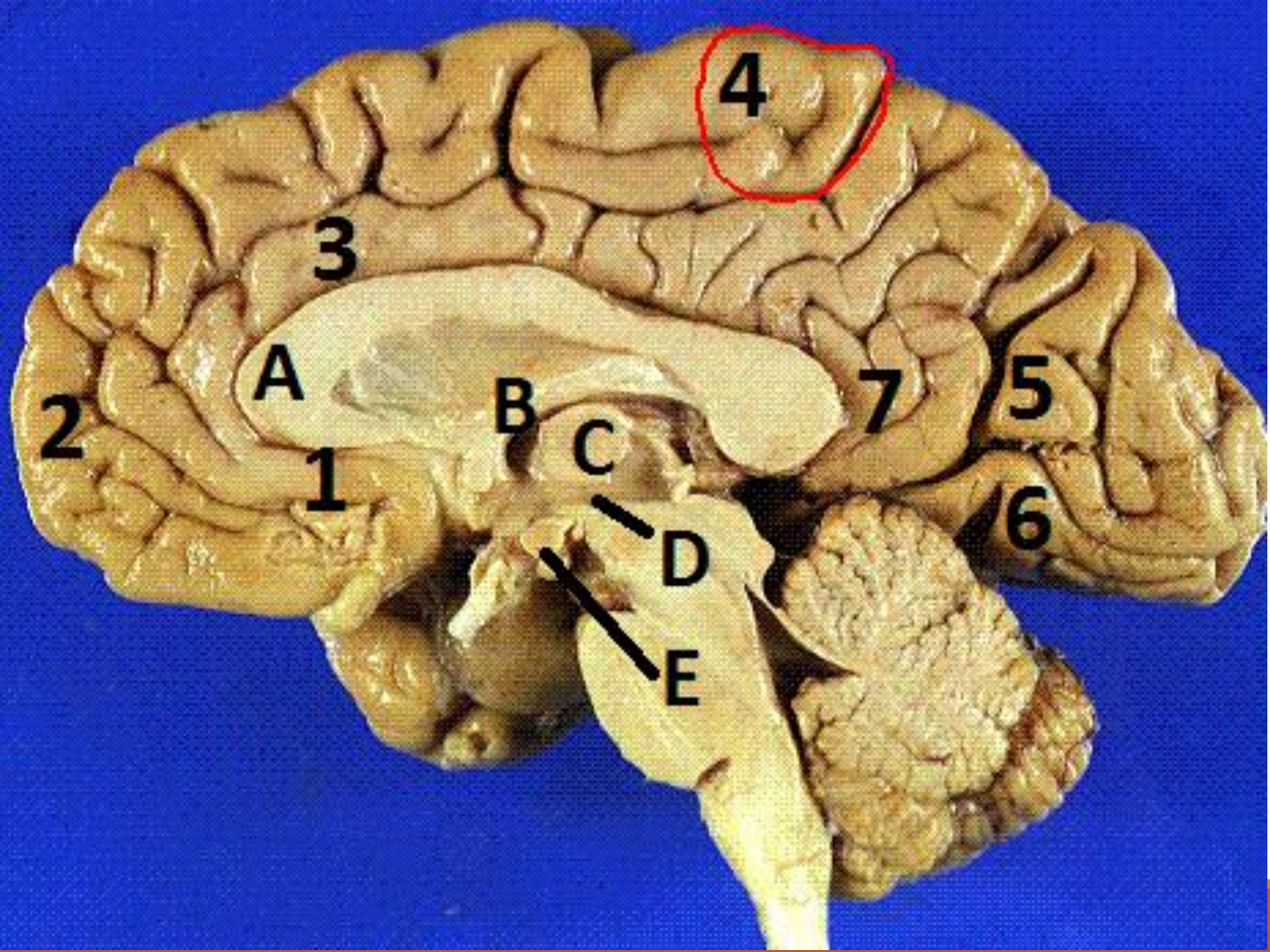
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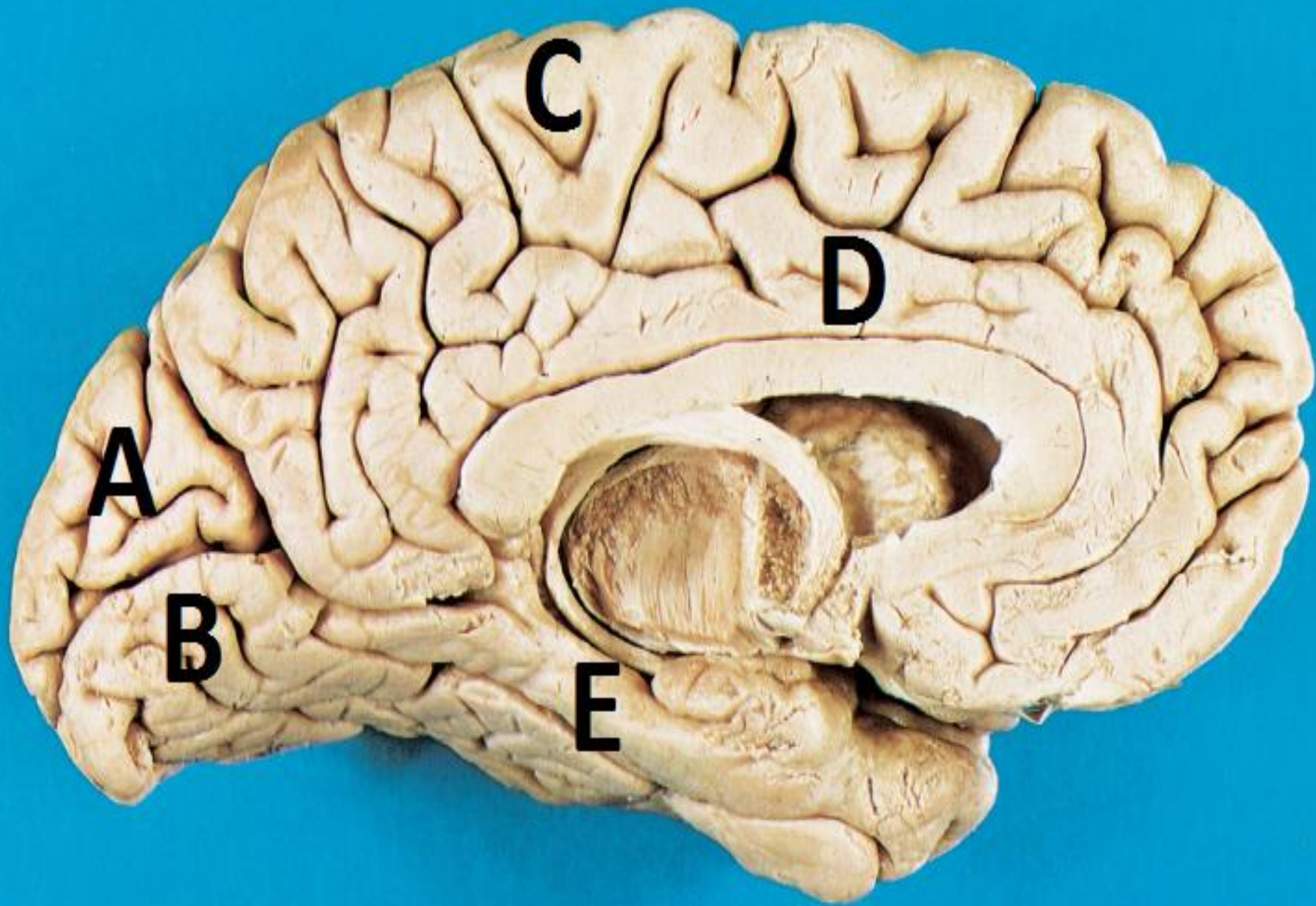
A

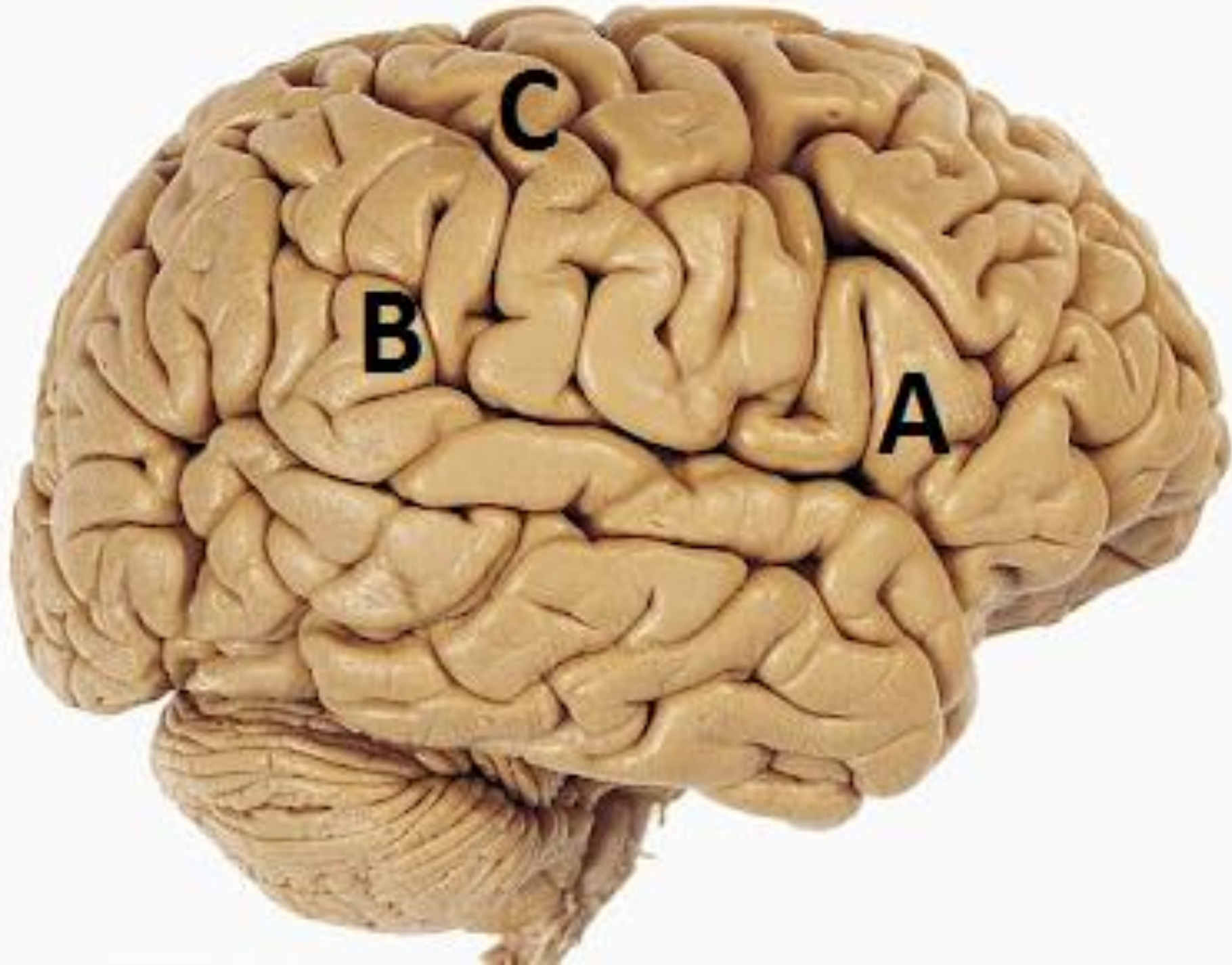
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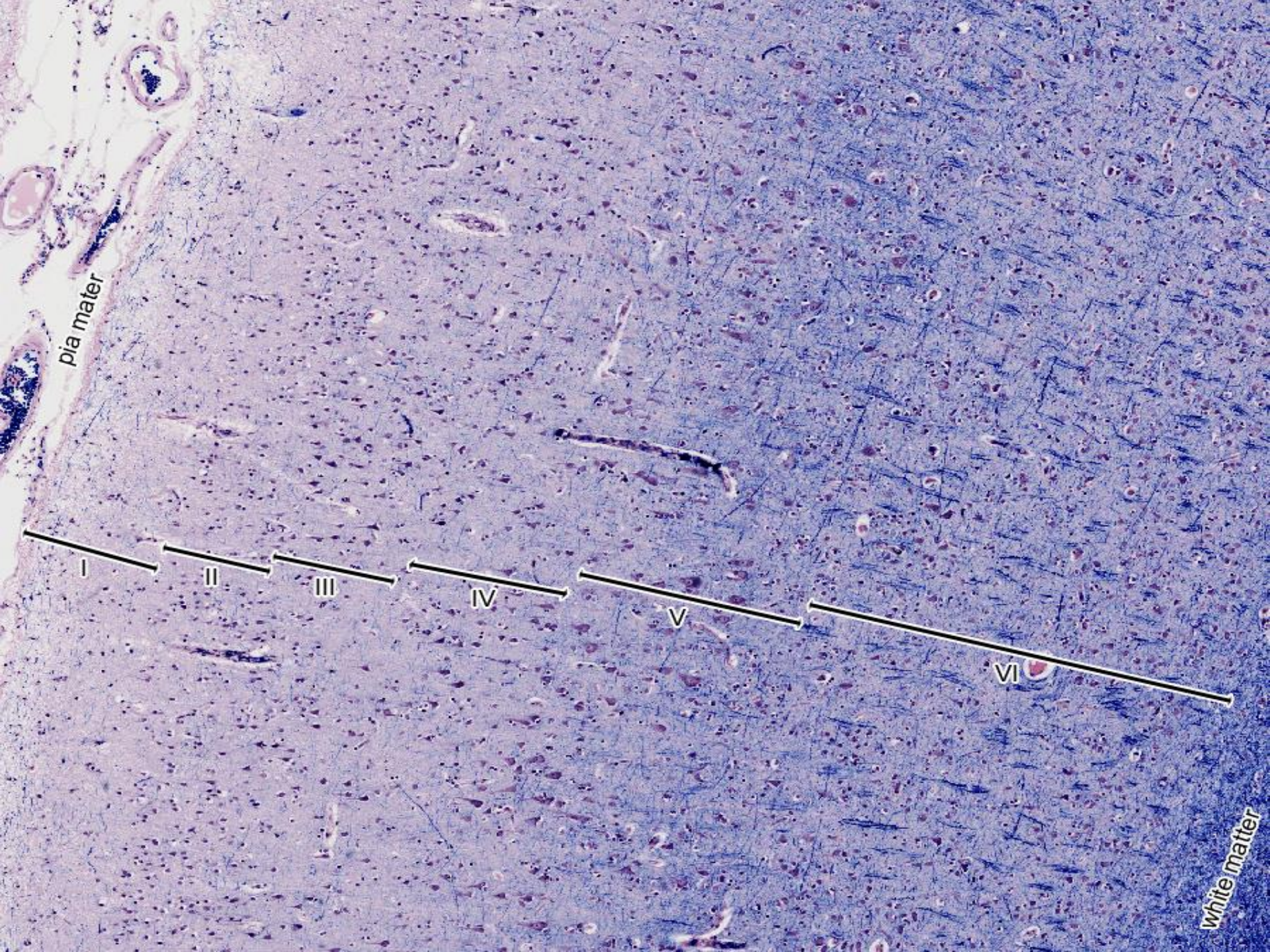












pia mater

I

II

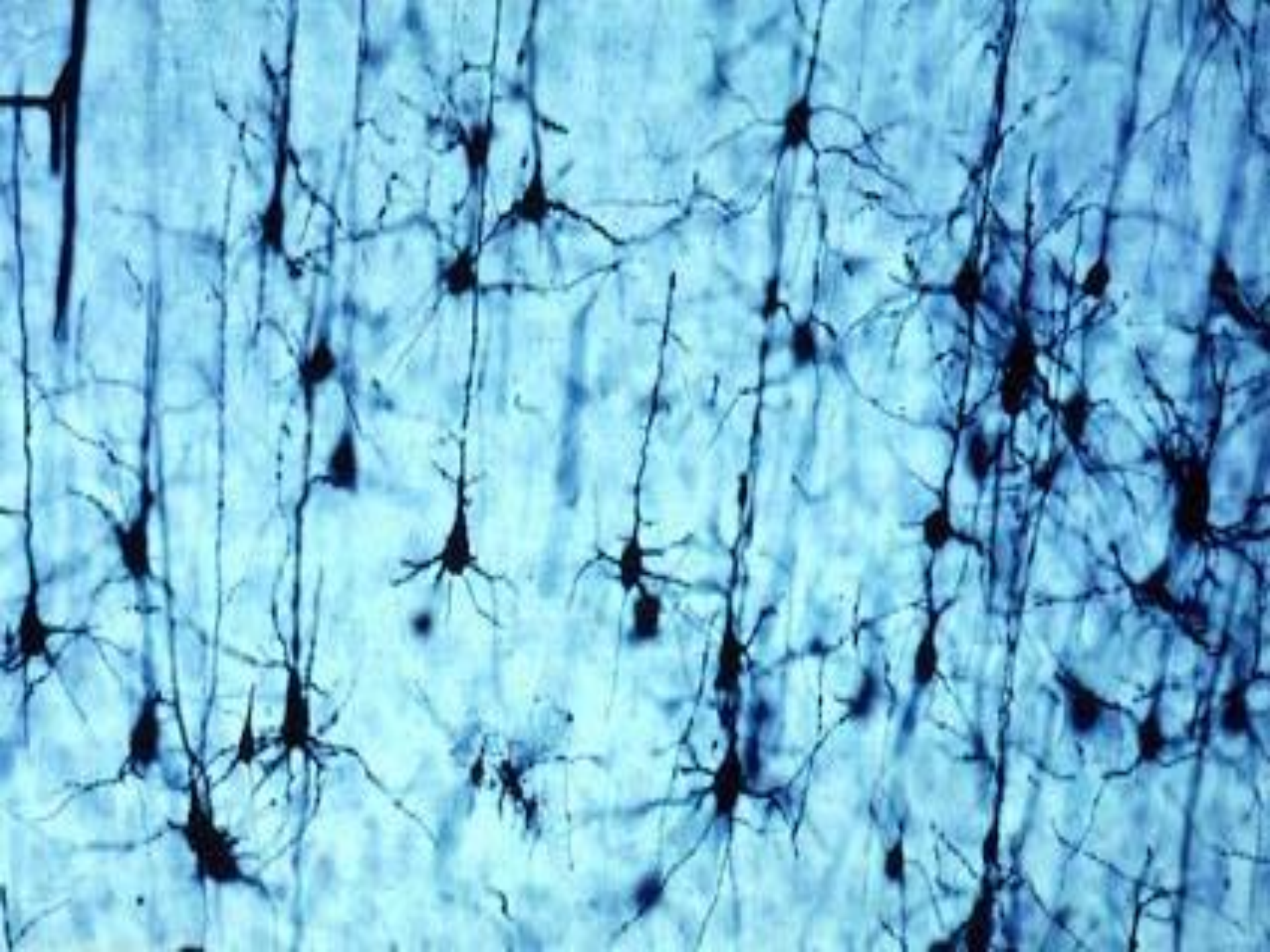
III

IV

V

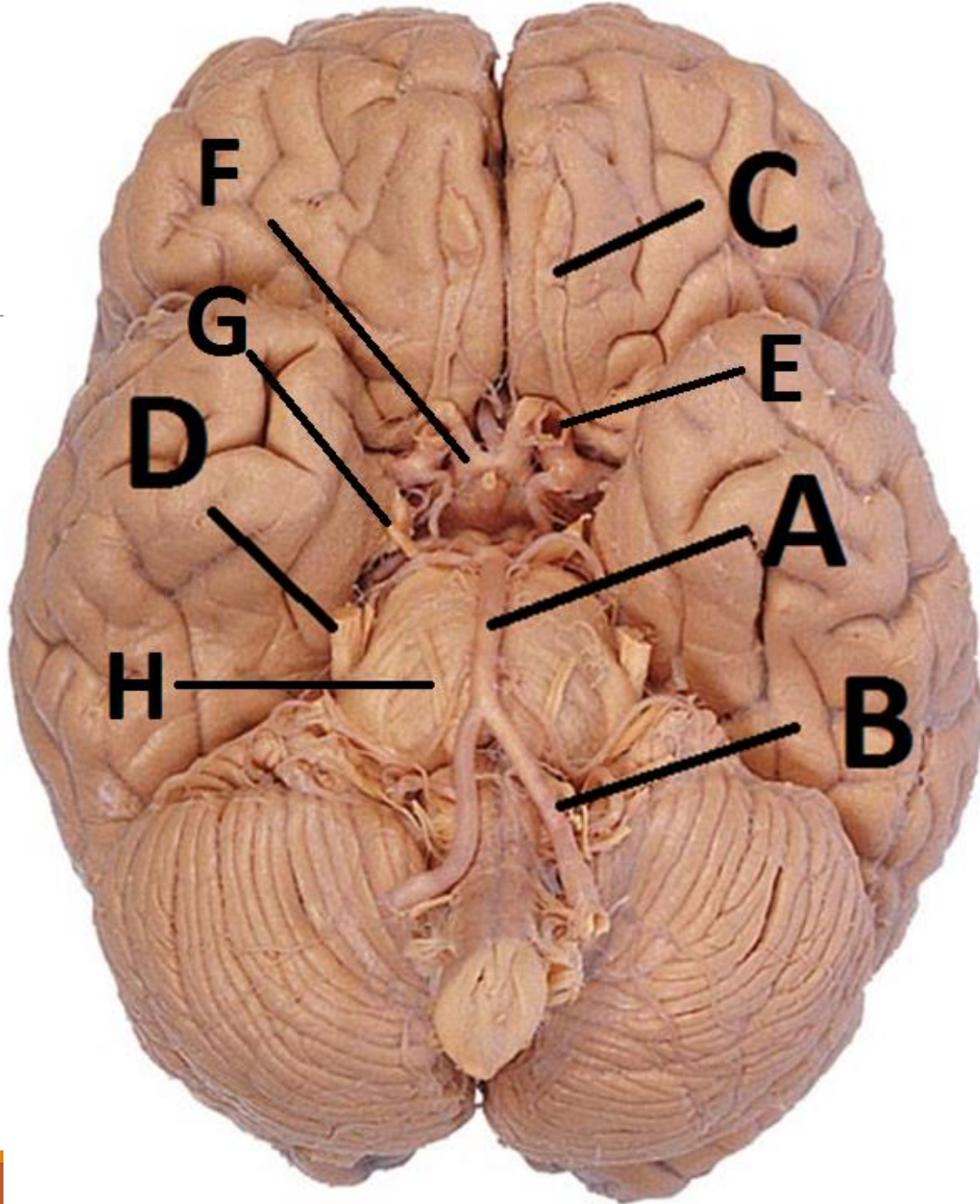
VI

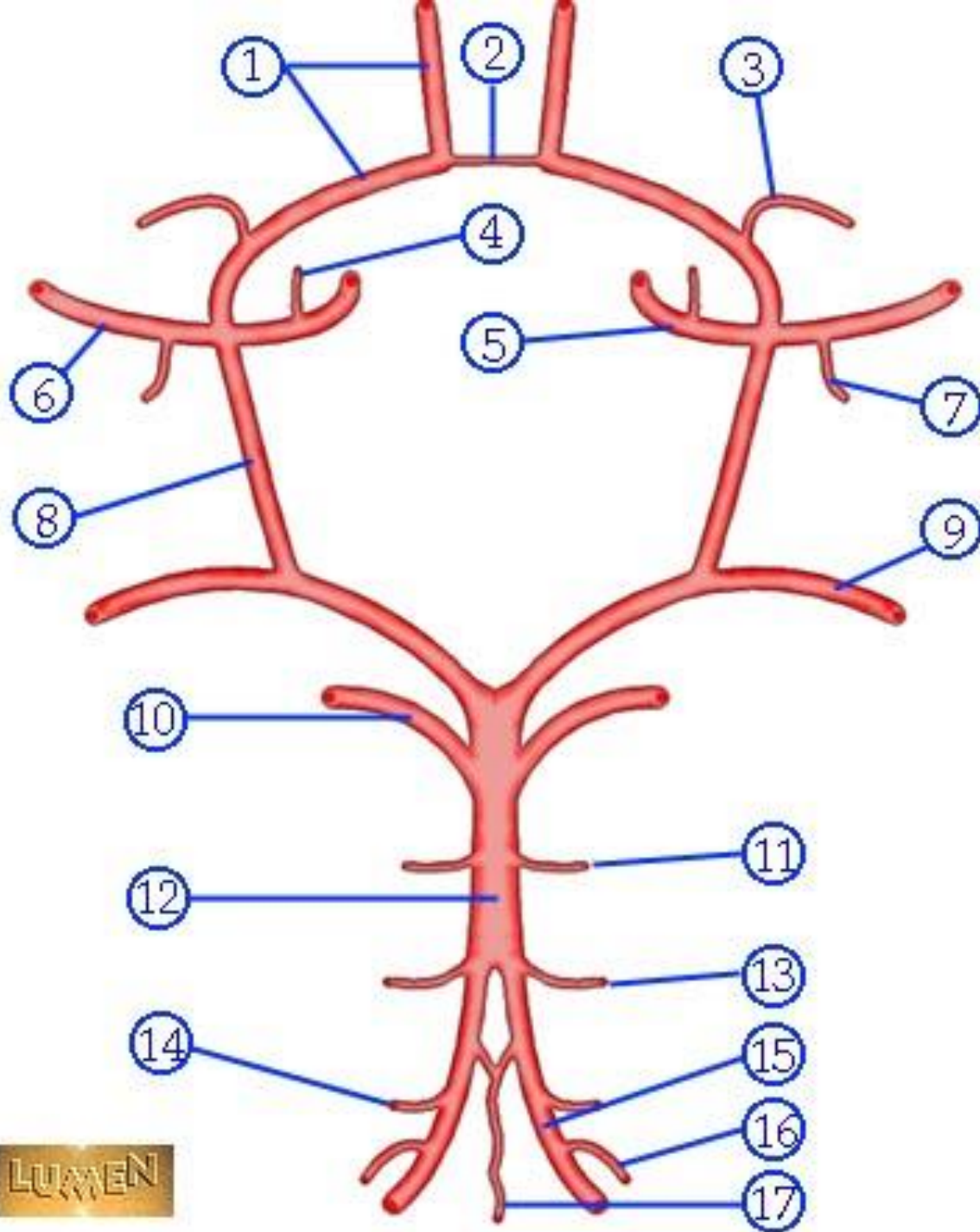
white matter



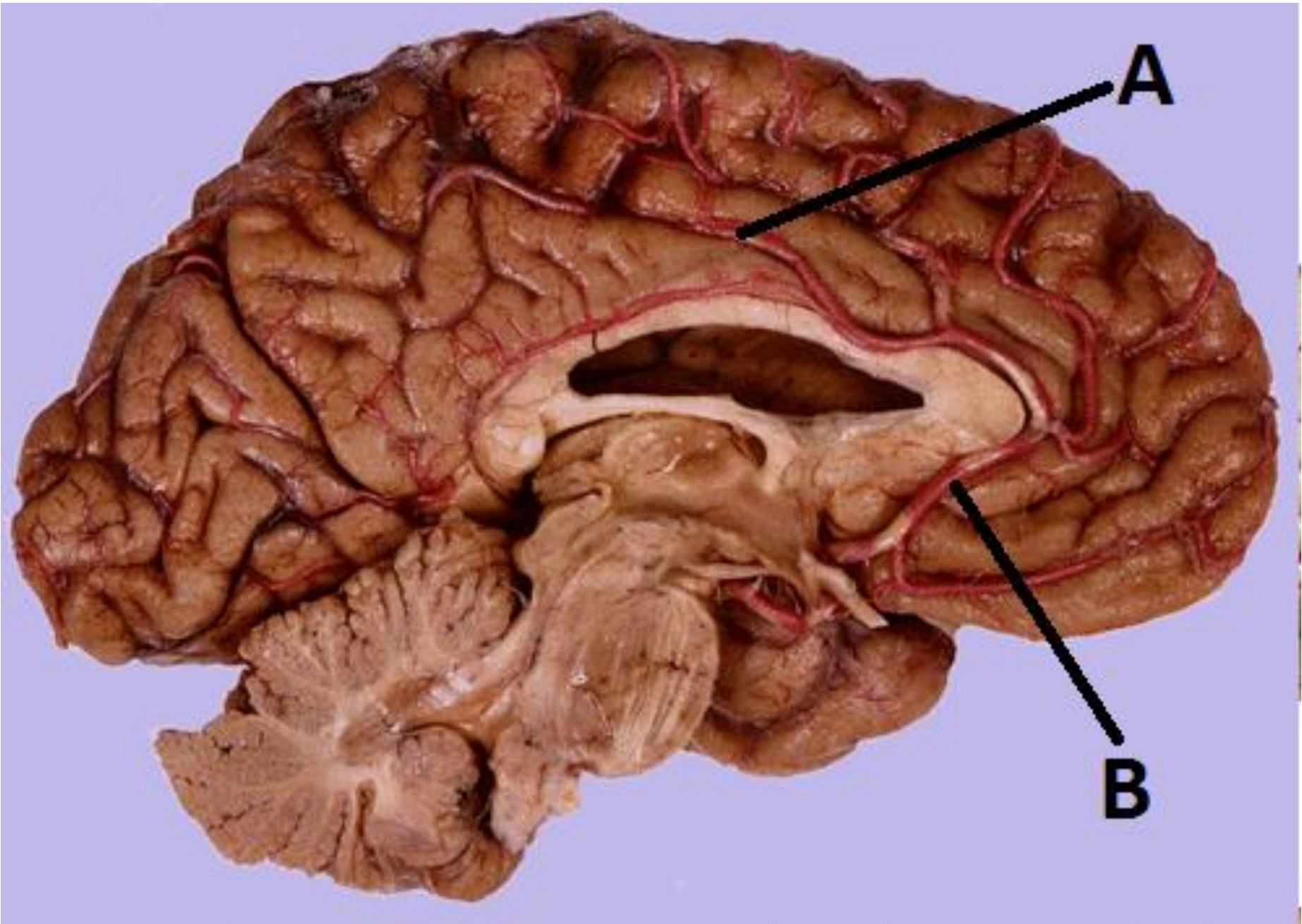
FUNCTIONAL AREAS

1. PRIMARY MOTOR
2. MOTOR SPEECH
3. PRIMARY SENSORY
4. PREFRONTAL
5. PRIMARY VISUAL
6. PRIMARY AUDITORY
7. SENSORY SPEECH



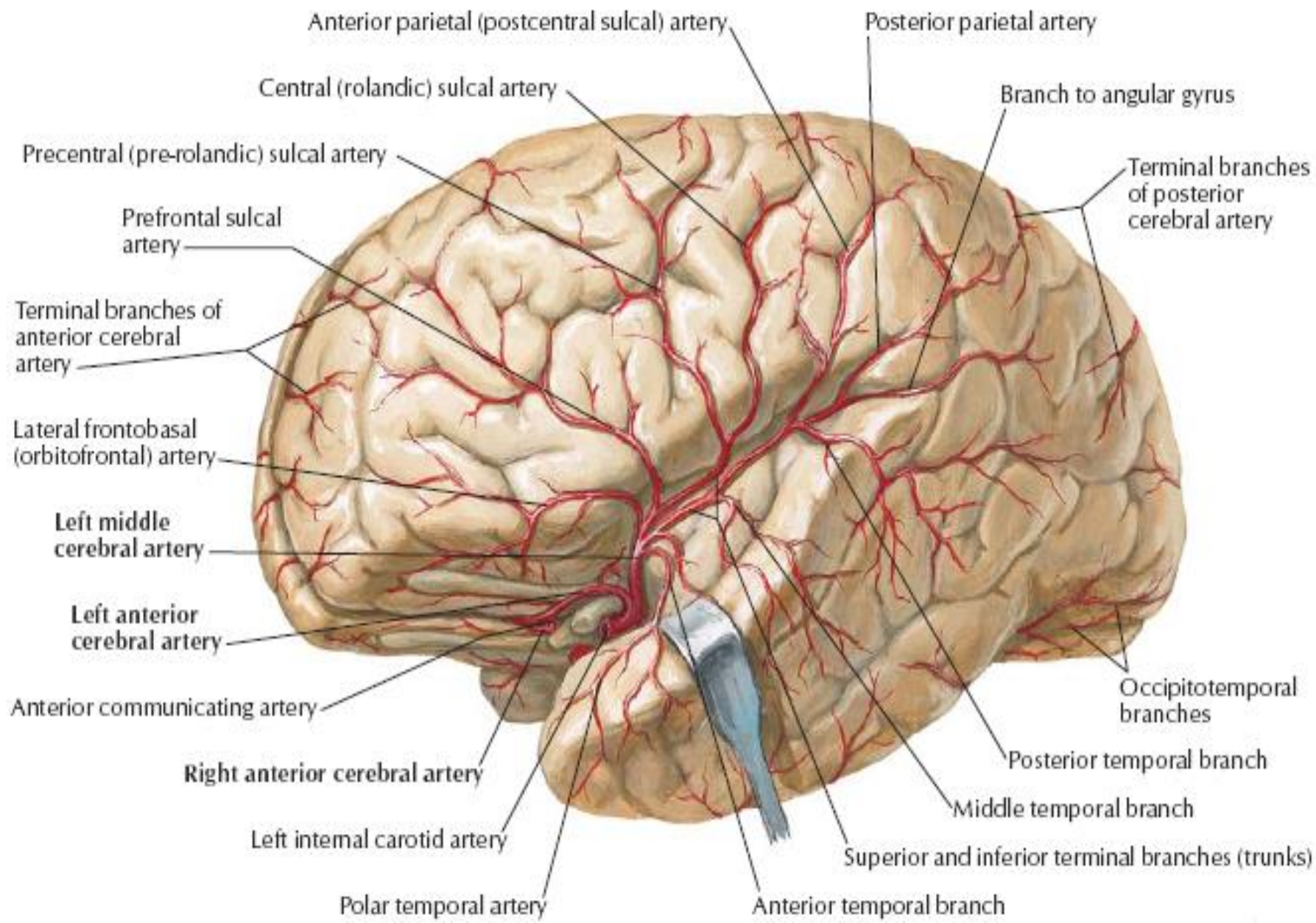


LUMEN



A

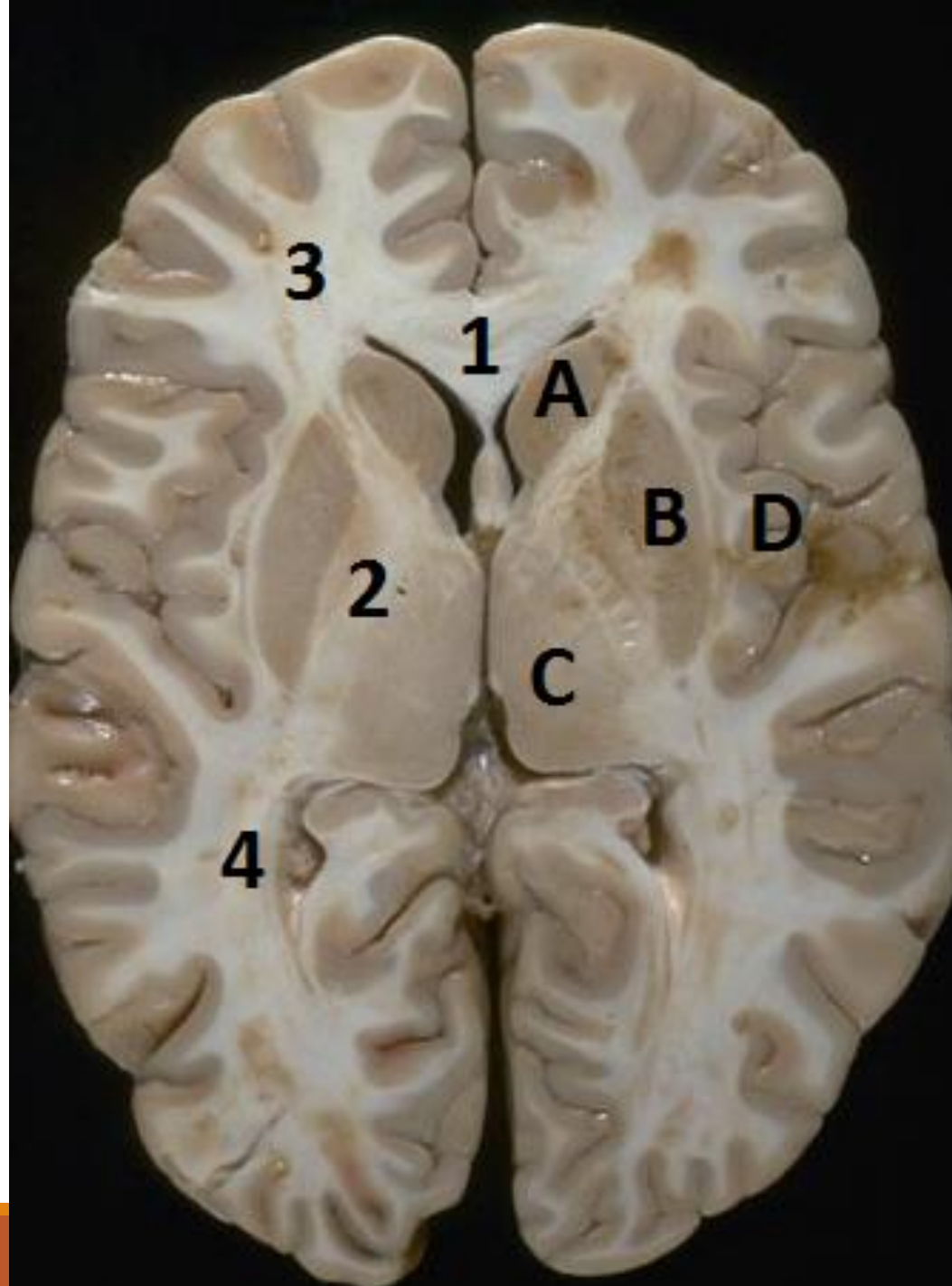
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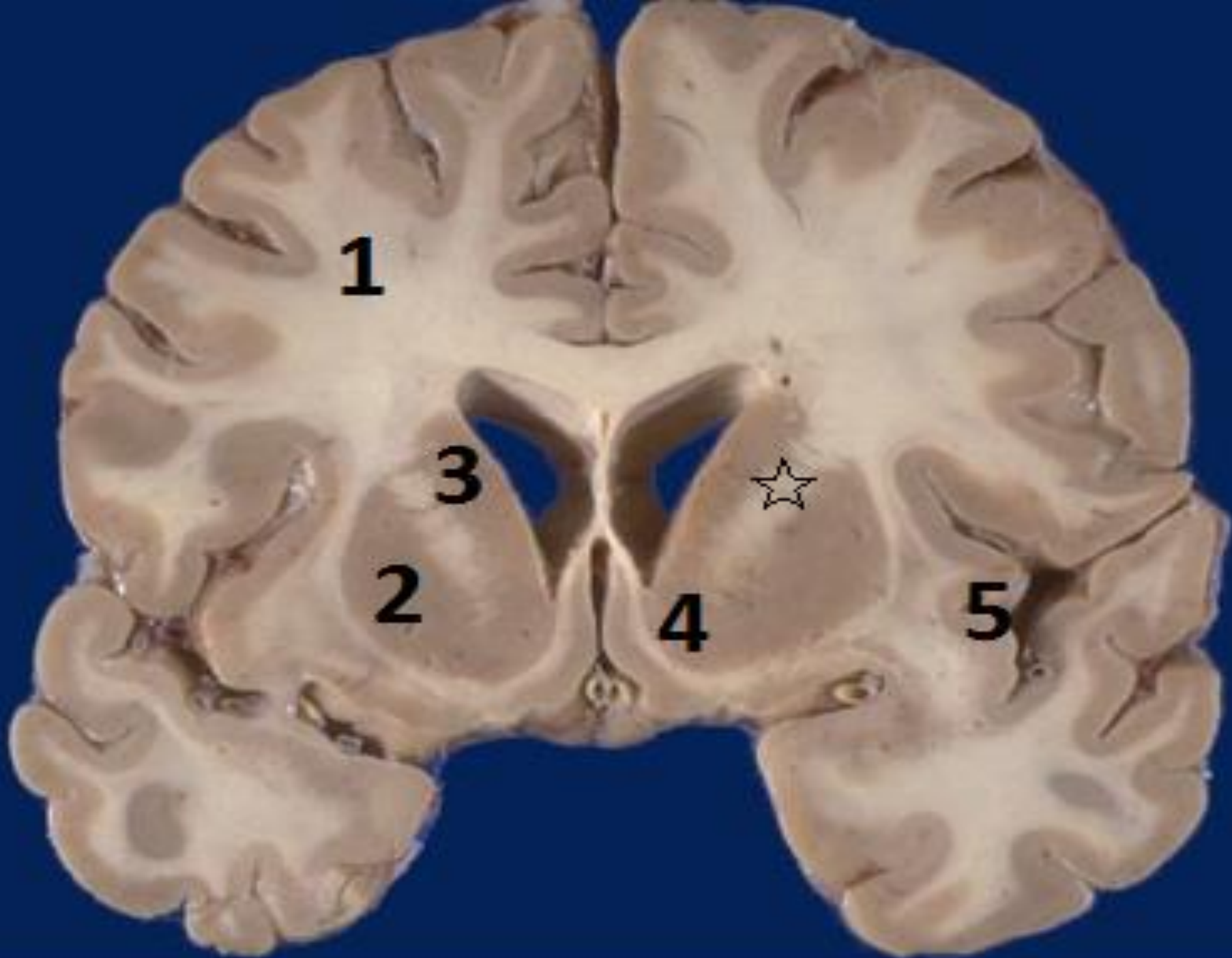


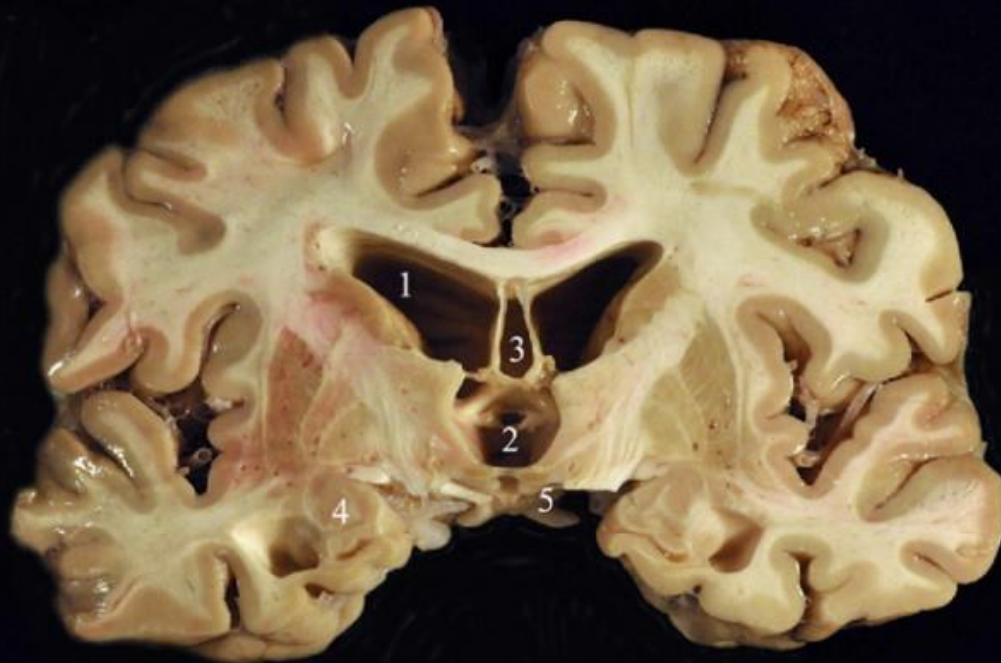
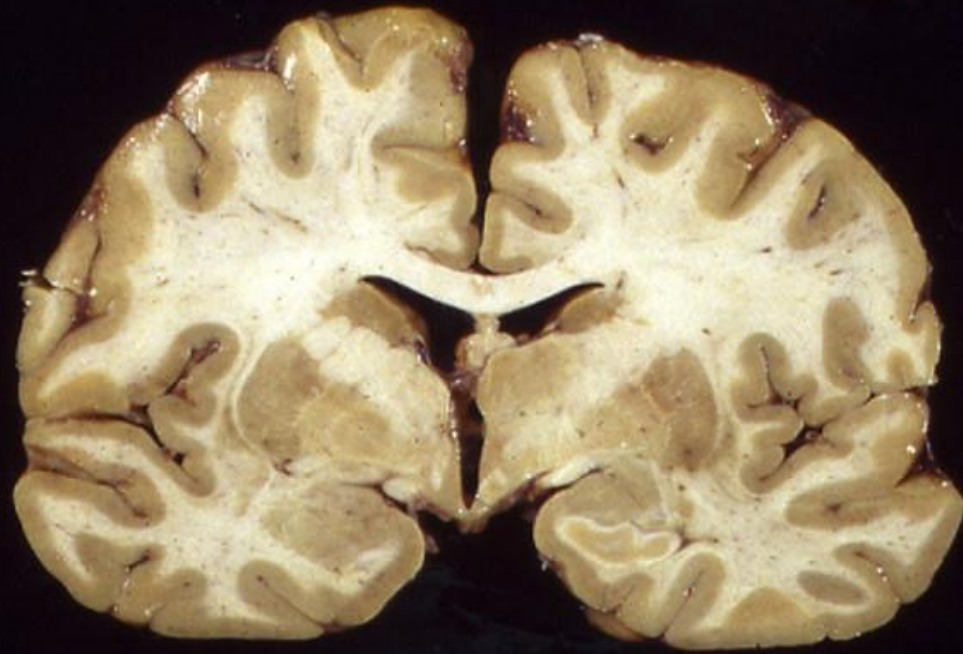
QUESTION 1

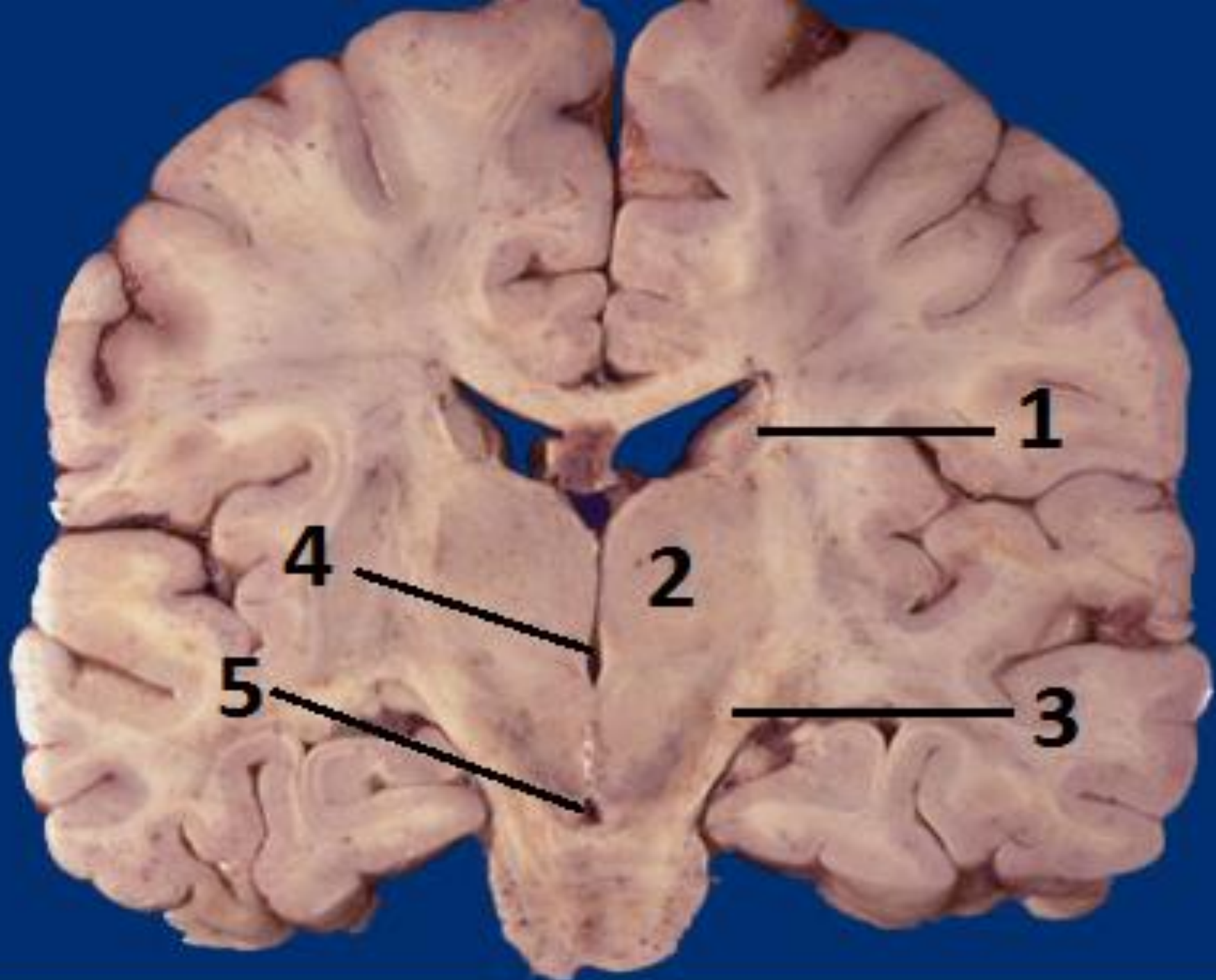
A 65 year old woman is brought to the outpatient department with a one day history of inability to talk and weakness in the right upper limb. Radiological investigation revealed a thrombus at the stem of the middle cerebral artery

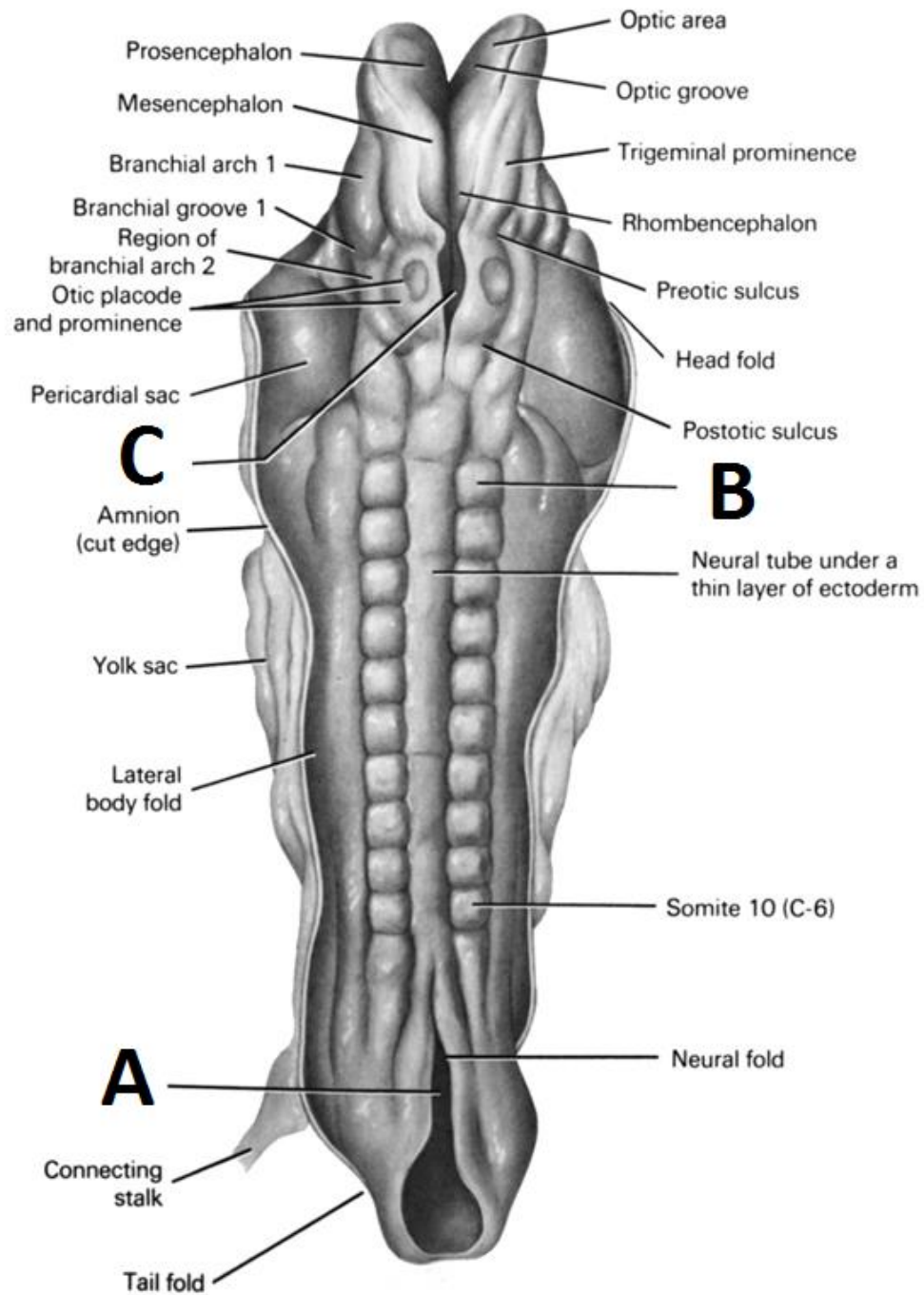
- a) State the side of the thrombus and give reason (2 marks)
- b) Give the anatomical basis of the clinical features reported (2 marks)
- c) State other possible clinical findings in this patient and state the anatomical basis of each (6 marks)

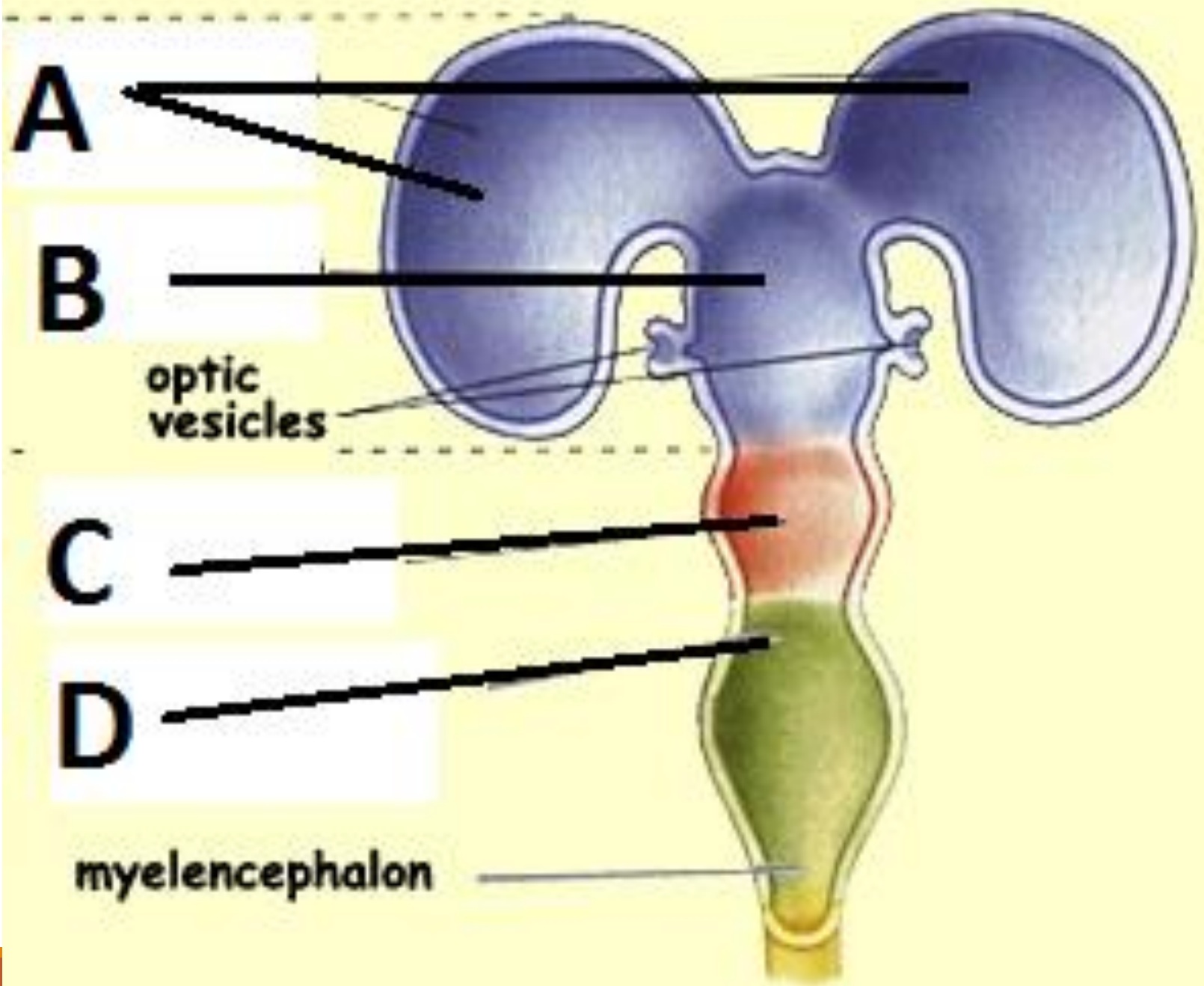


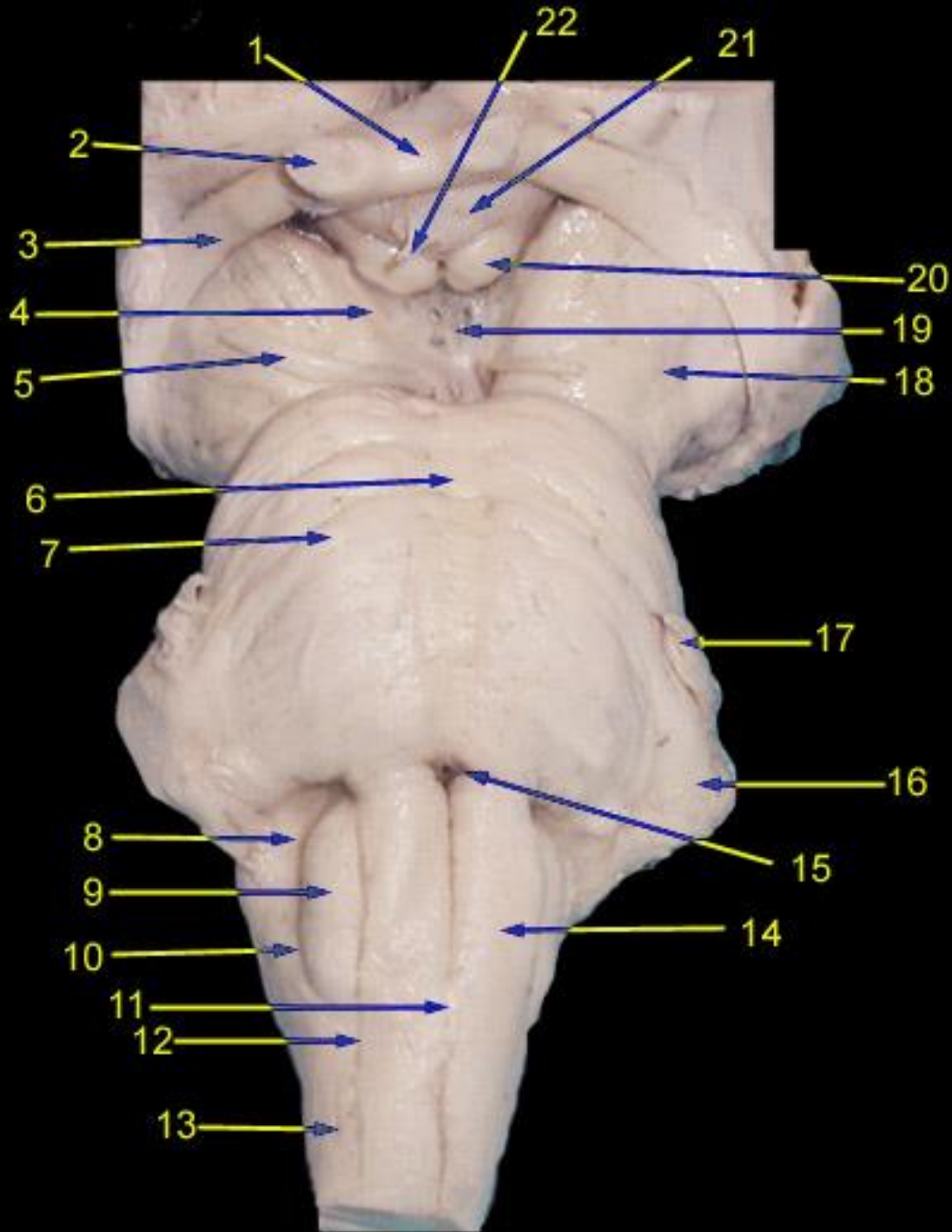




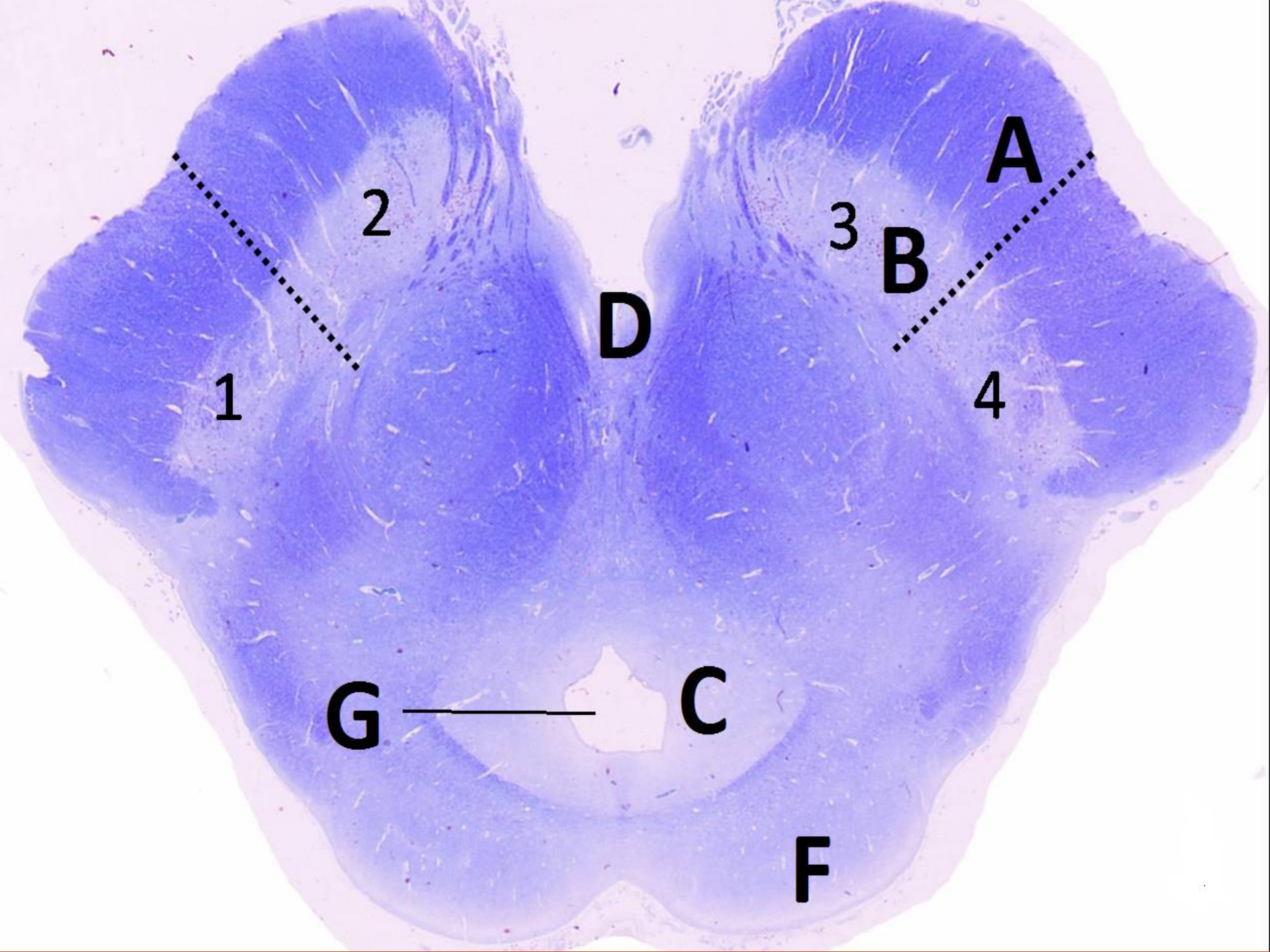




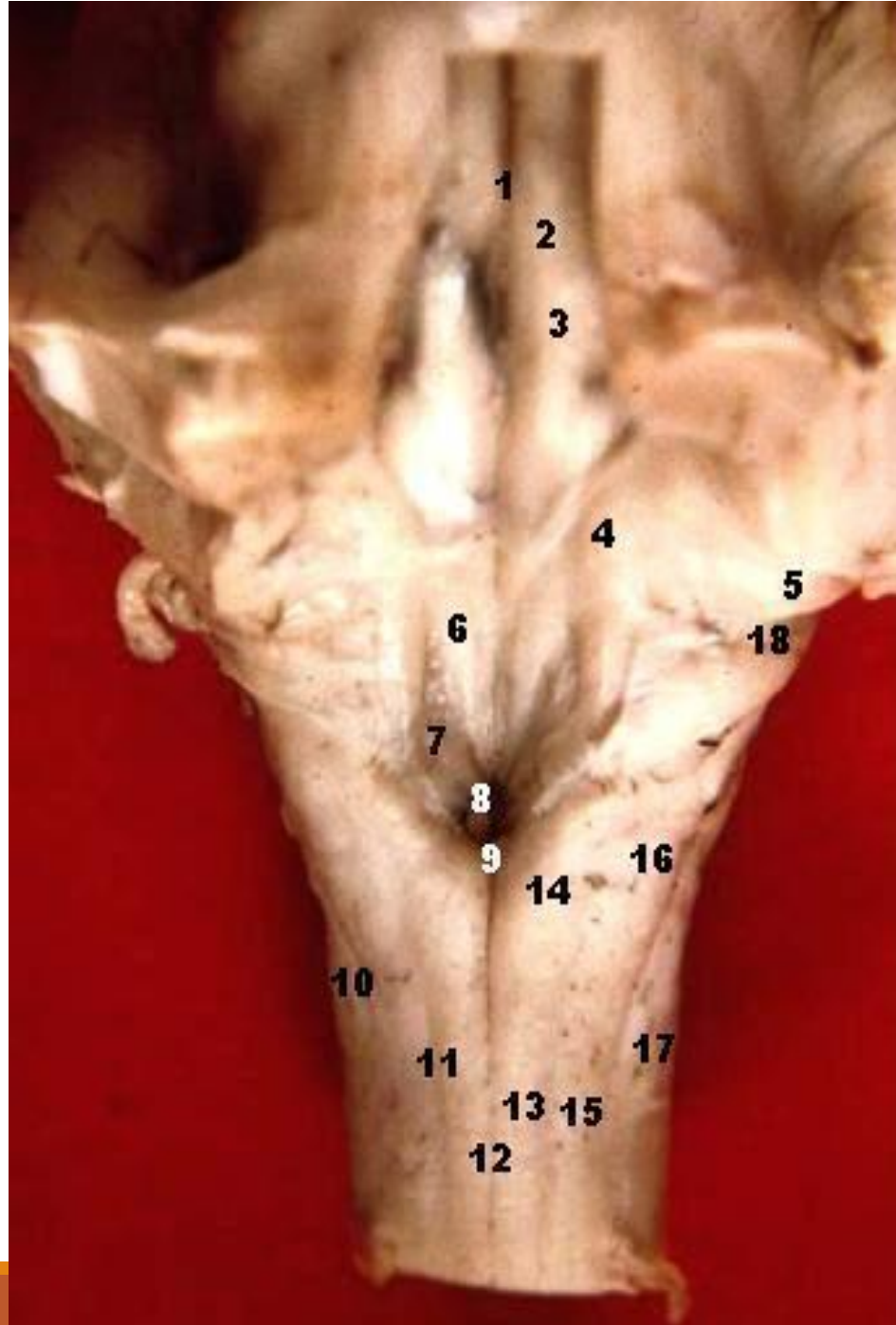








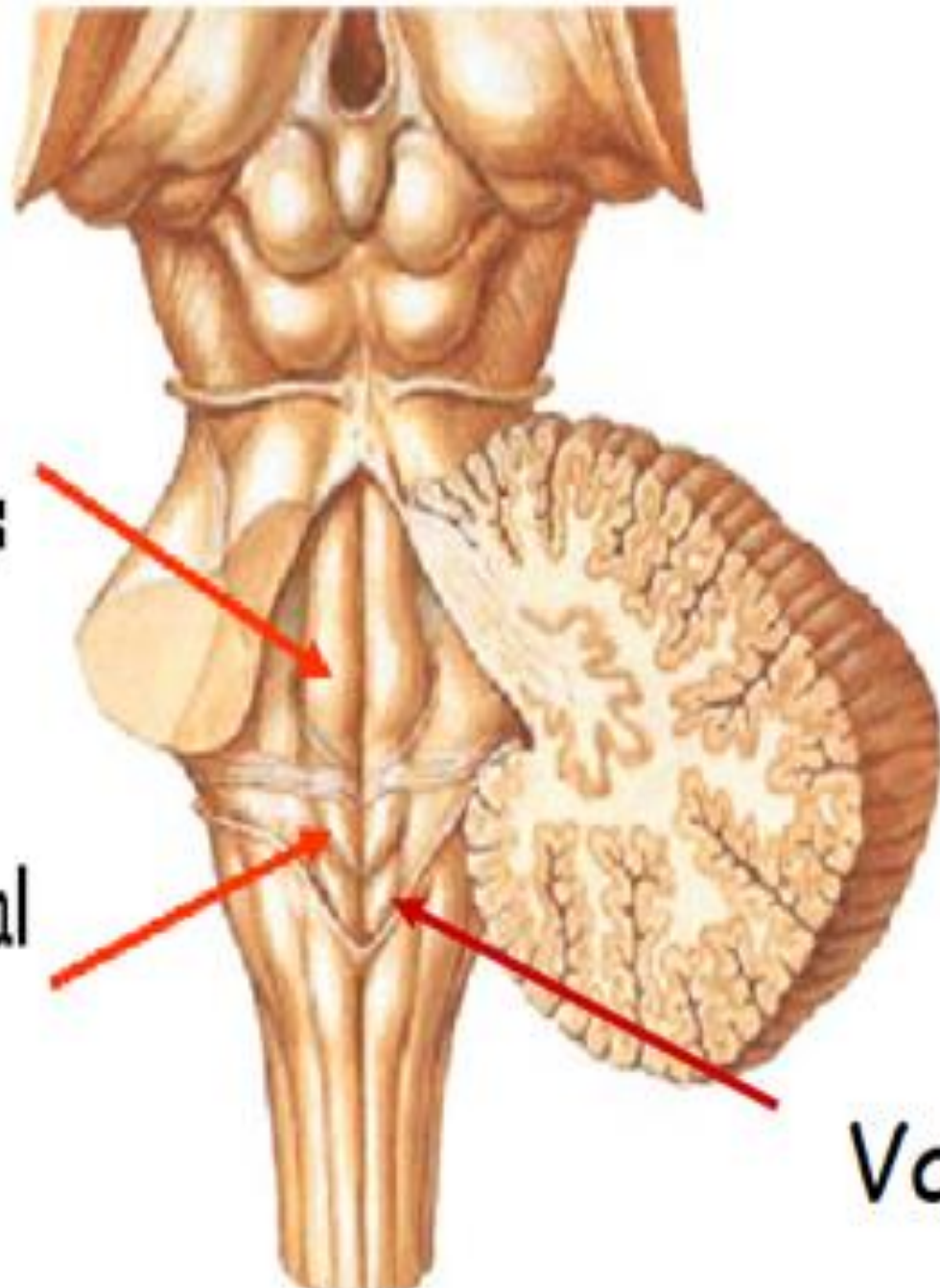


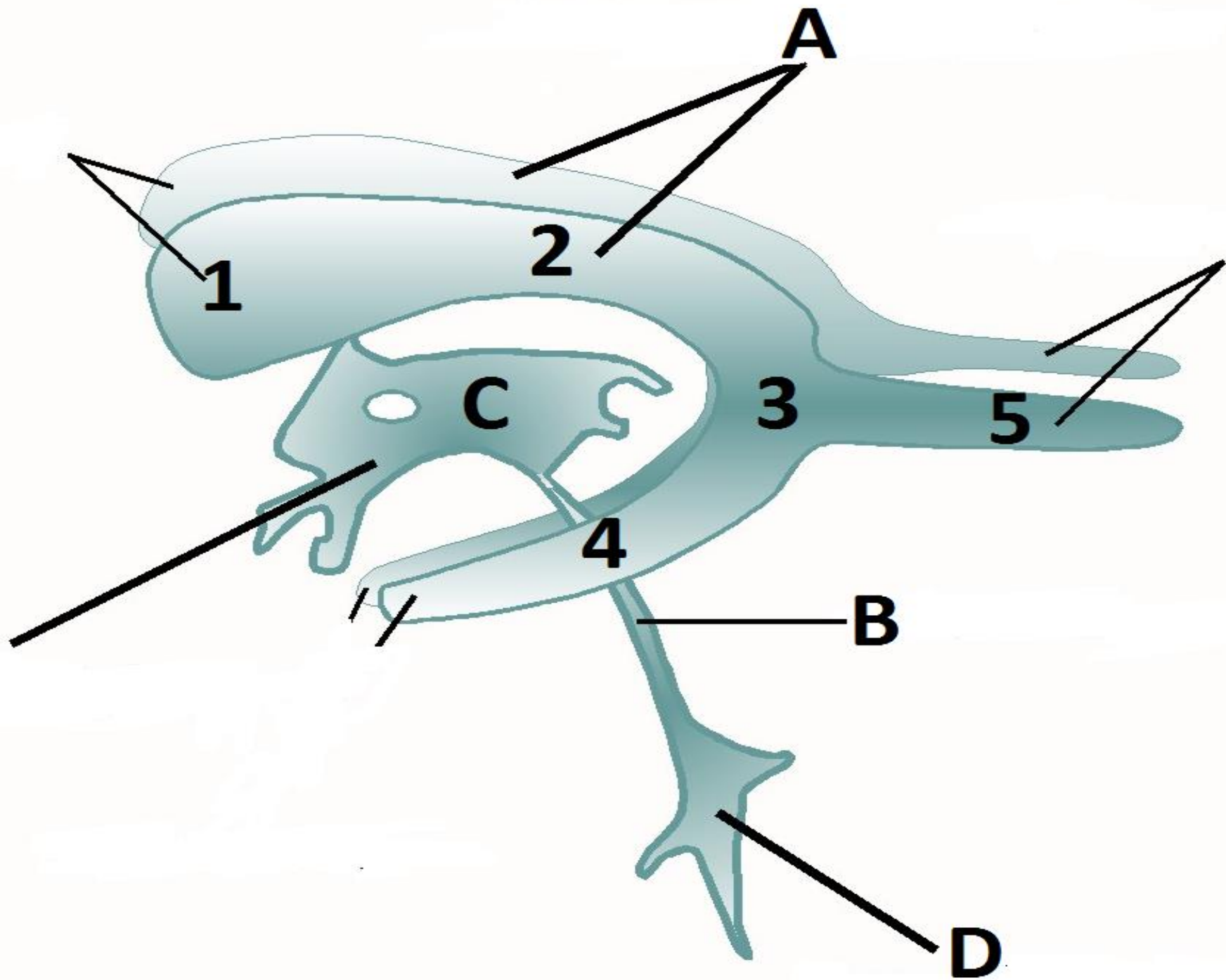


Facial
colliculus

Hypoglossal
trigone

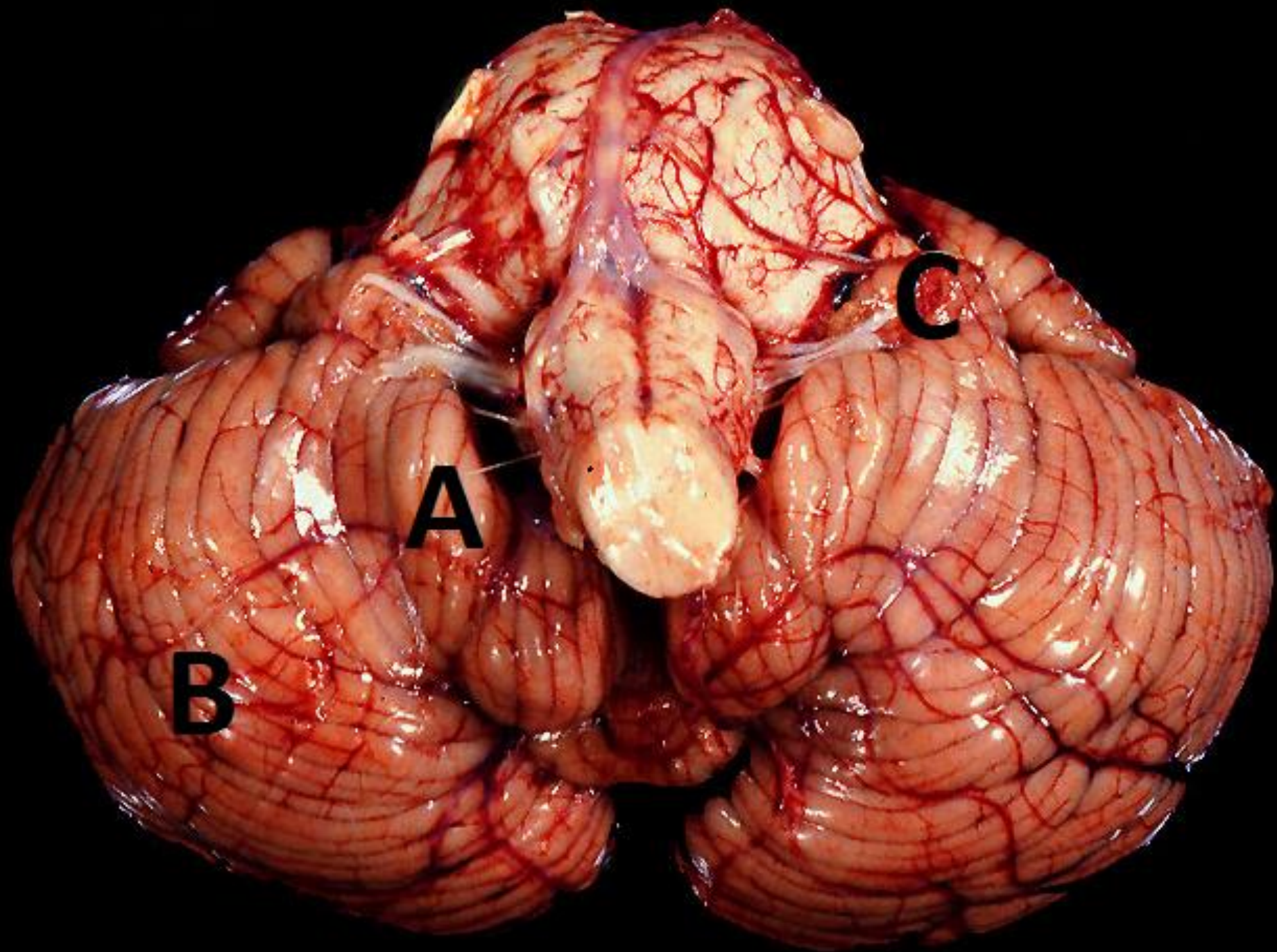
Vagal trigone

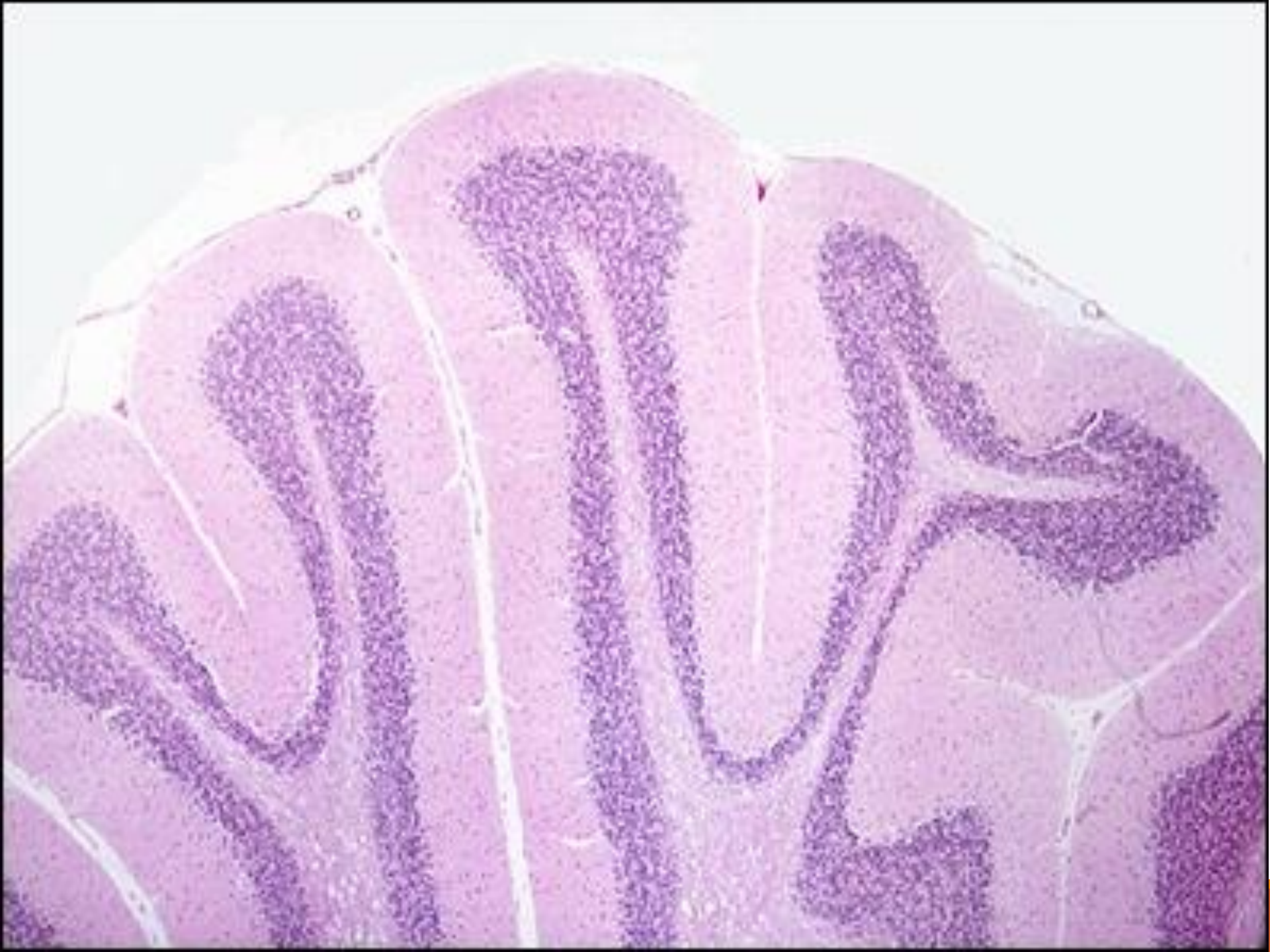




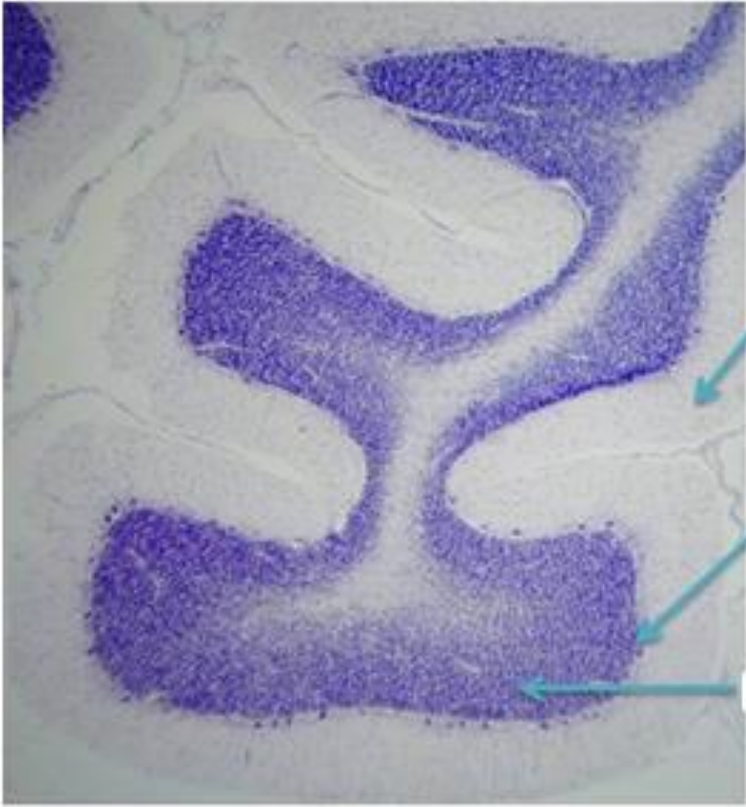
QUESTION 2

Outline the formation, flow and absorption of the cerebrospinal fluid. Add notes of congenital abnormalities of the ventricular system (10 marks)





Complex folding of the cerebellar cortex

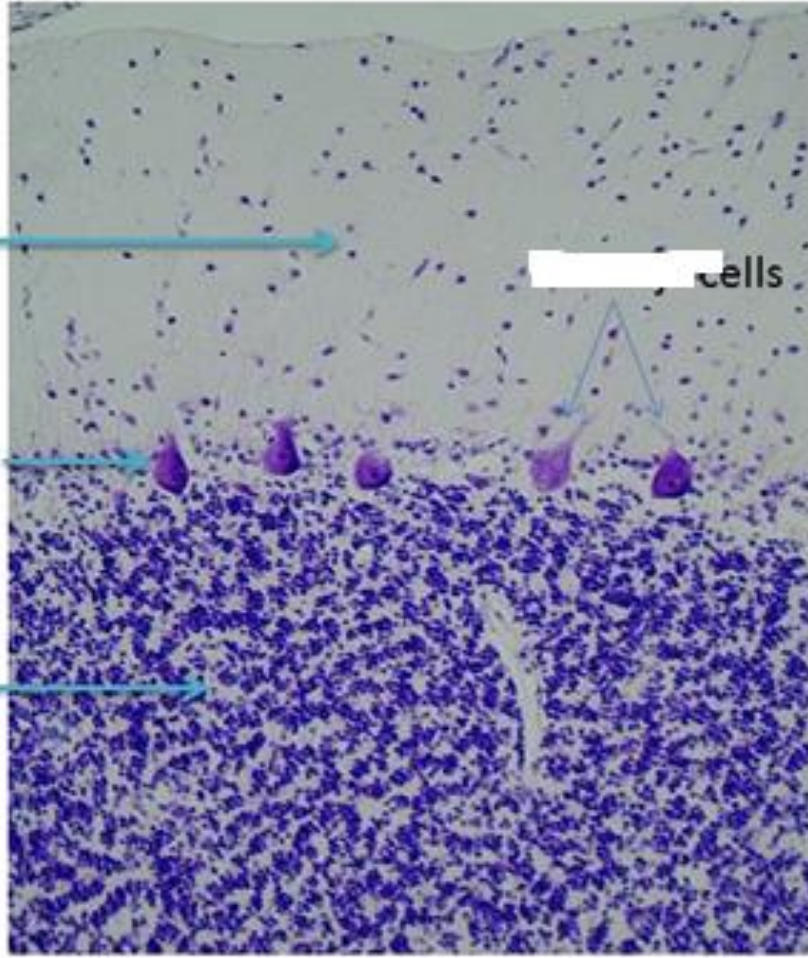


A

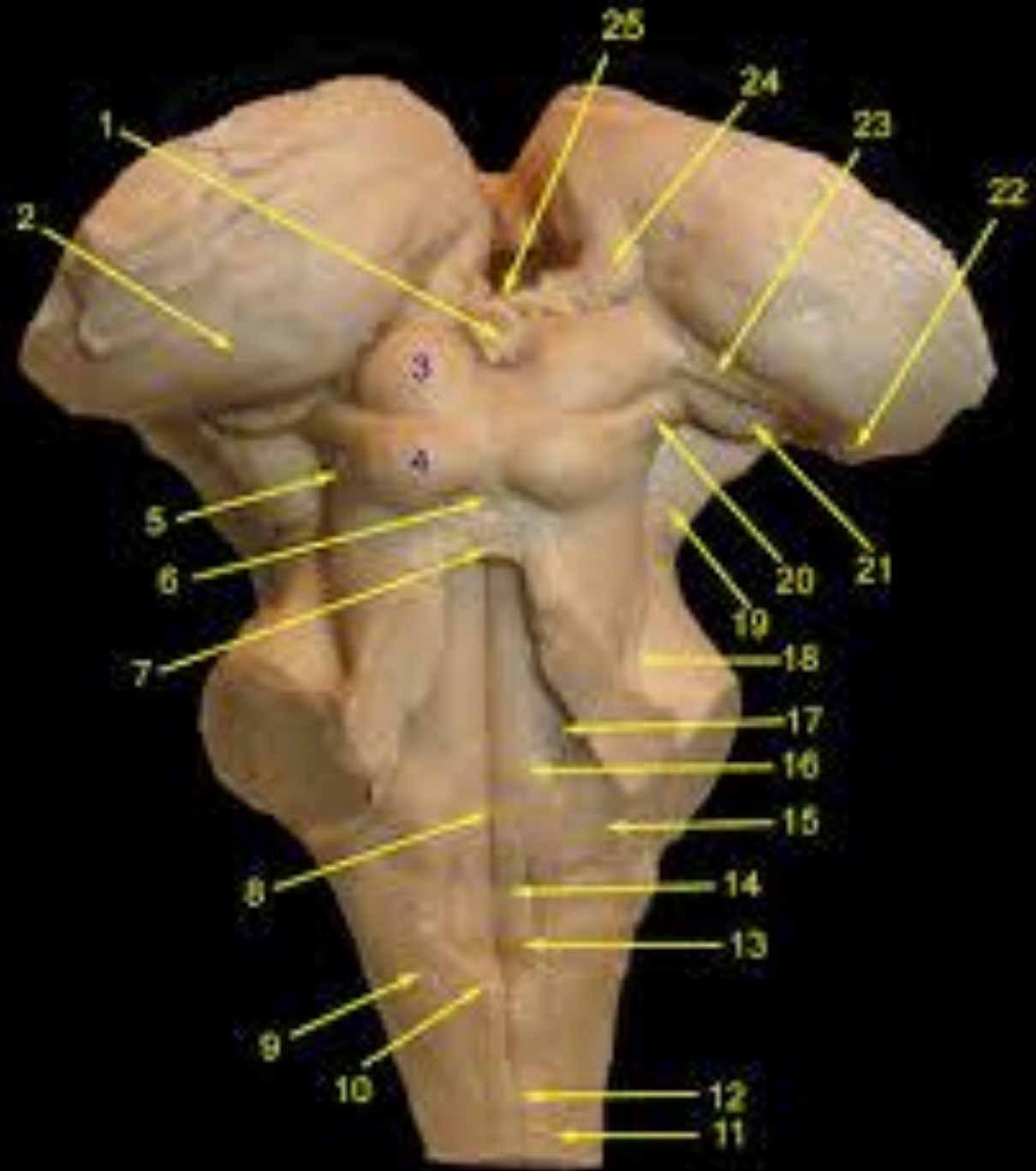
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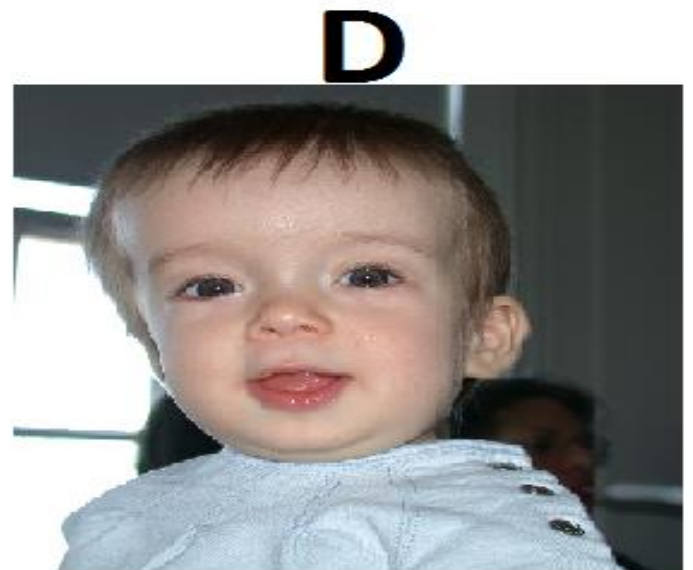
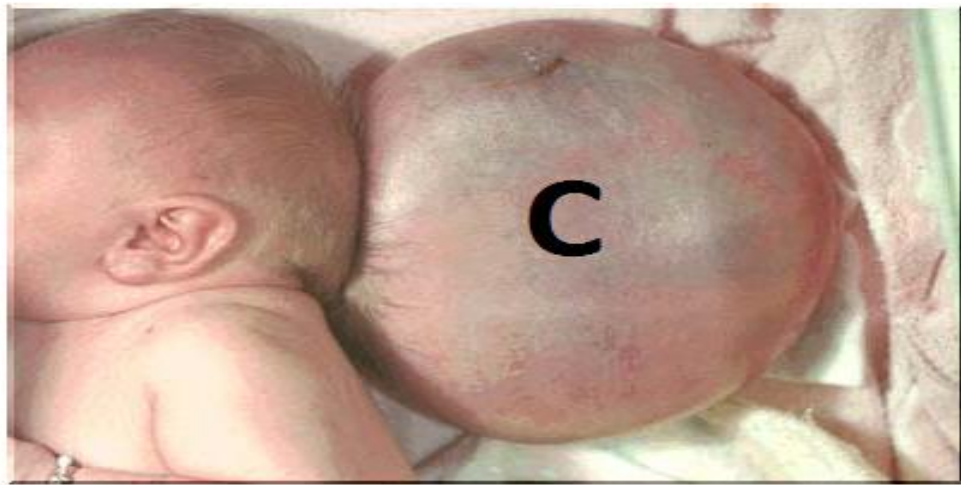
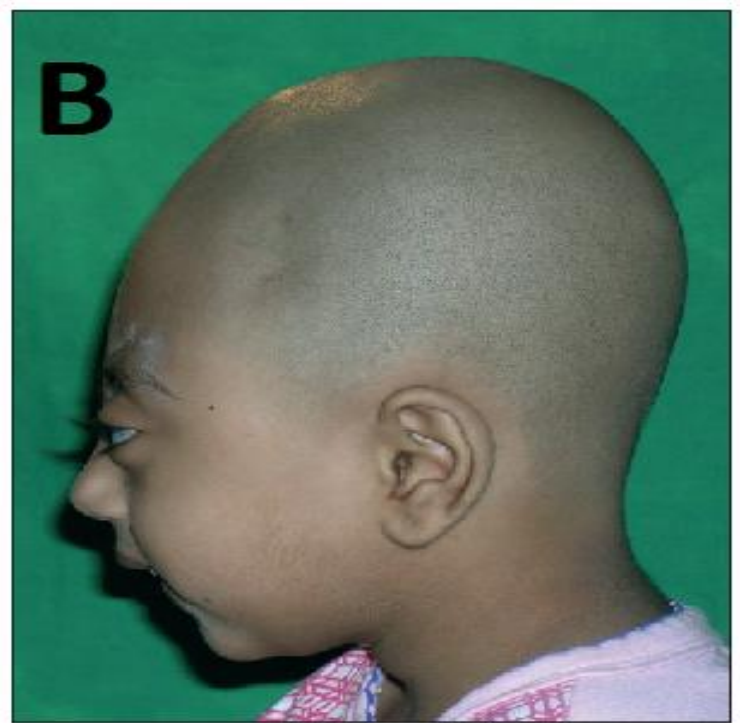
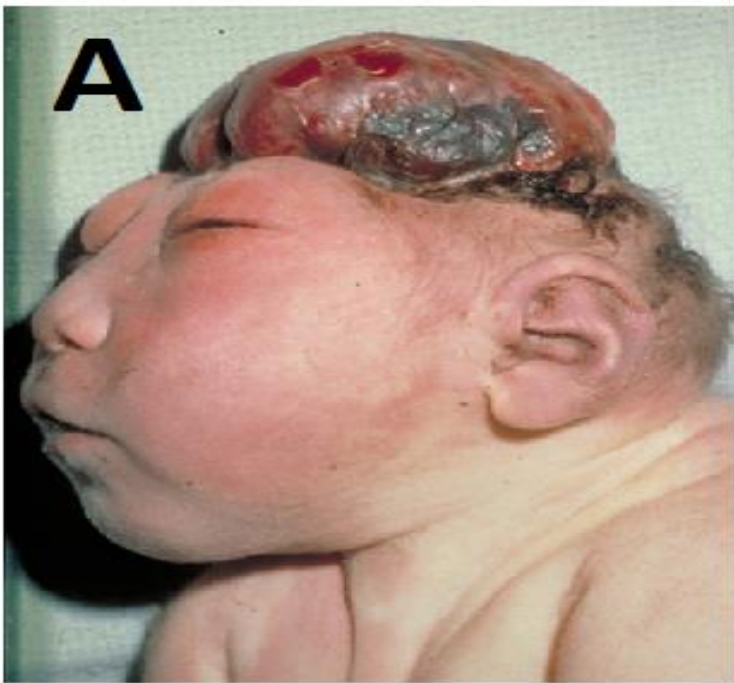
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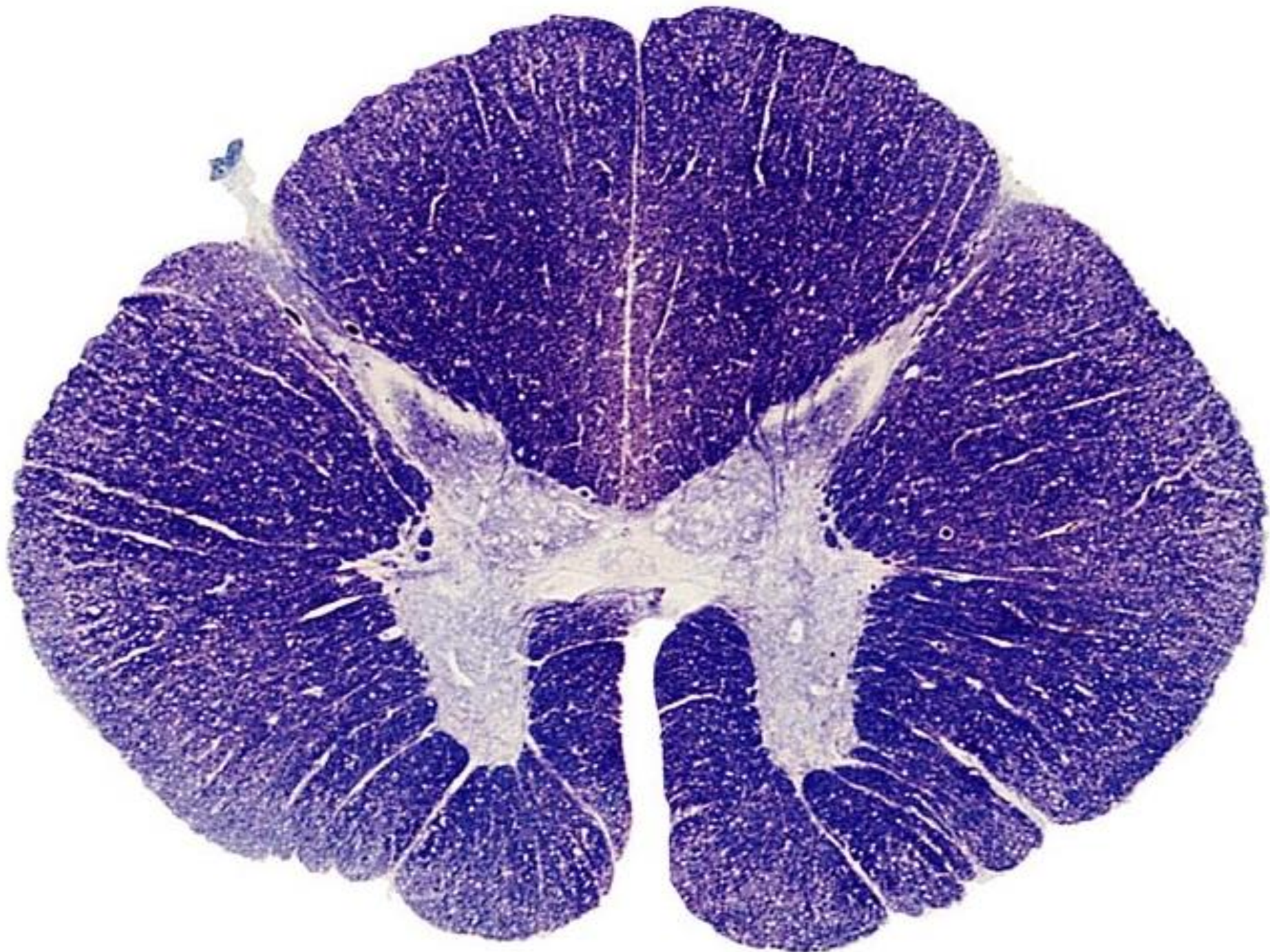
High-power micrograph of the cerebellar cortex

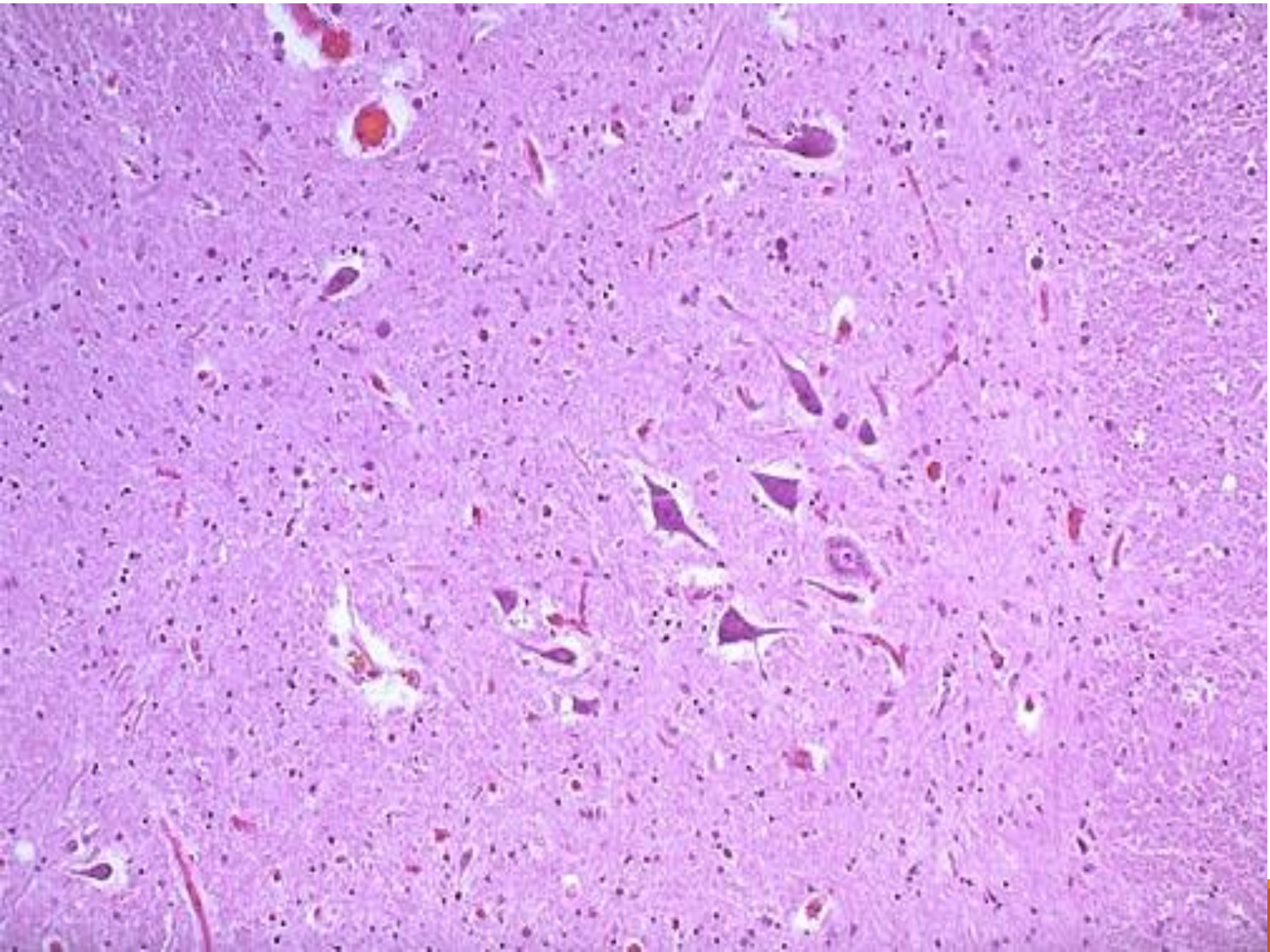


cells

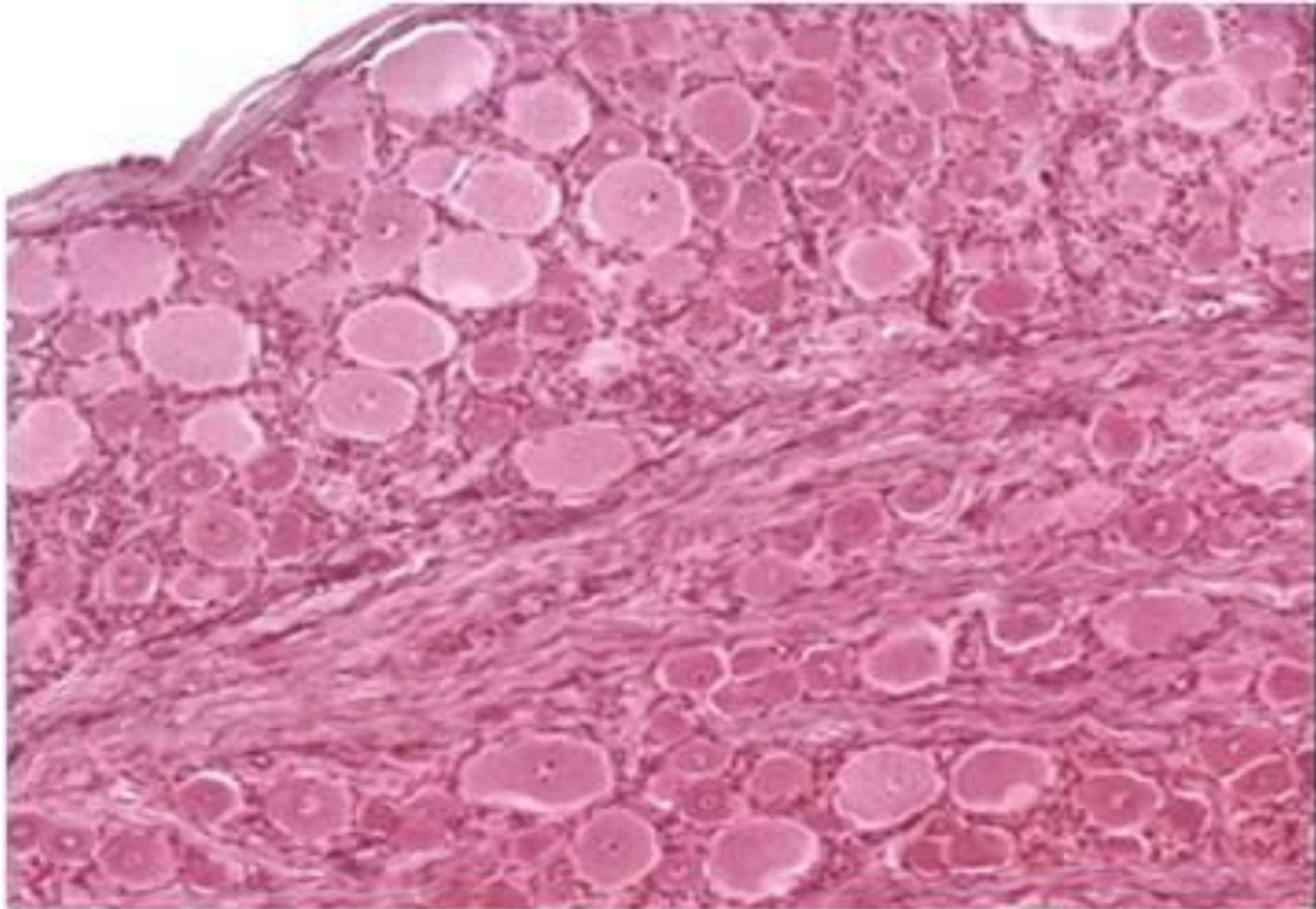


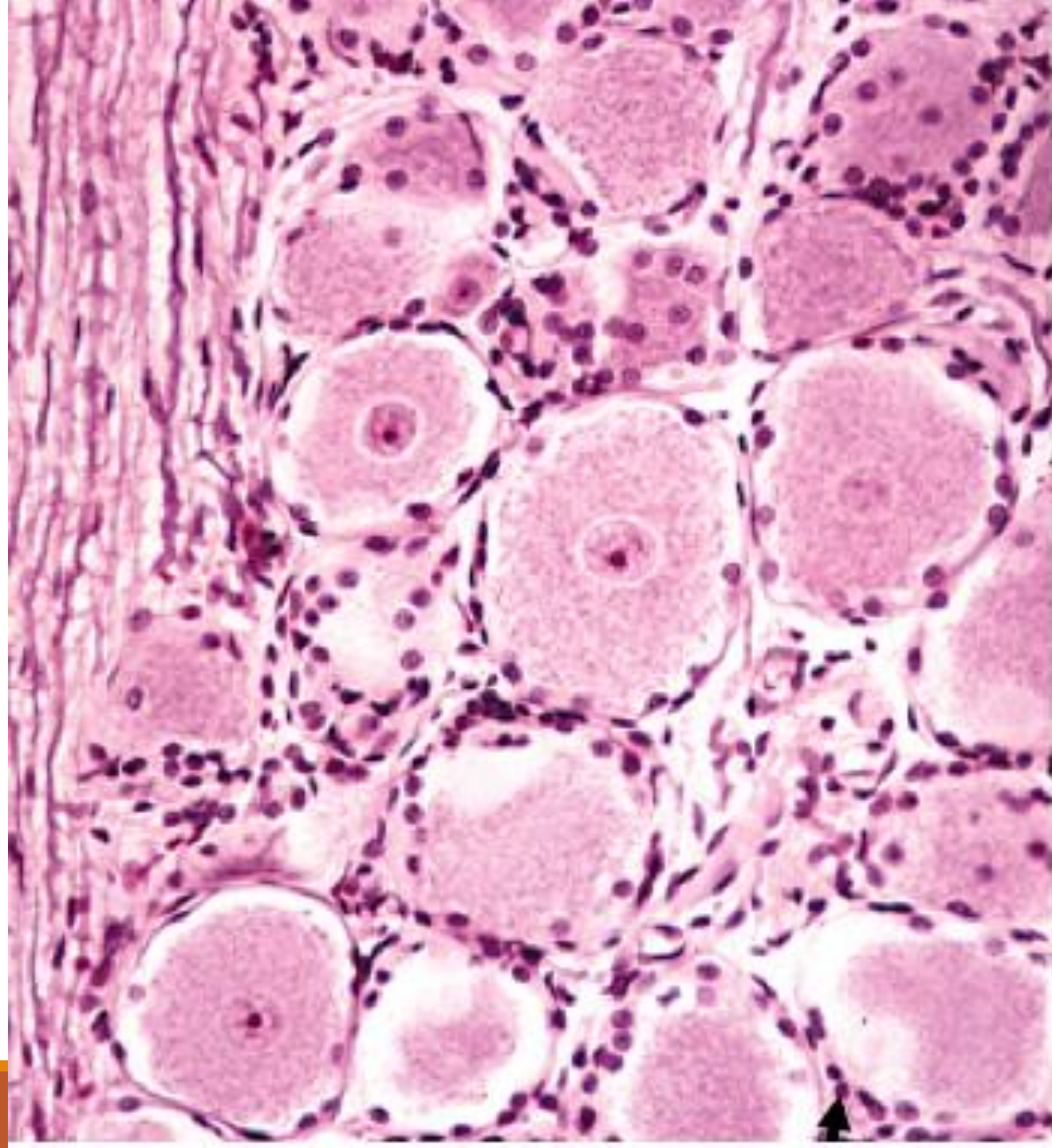


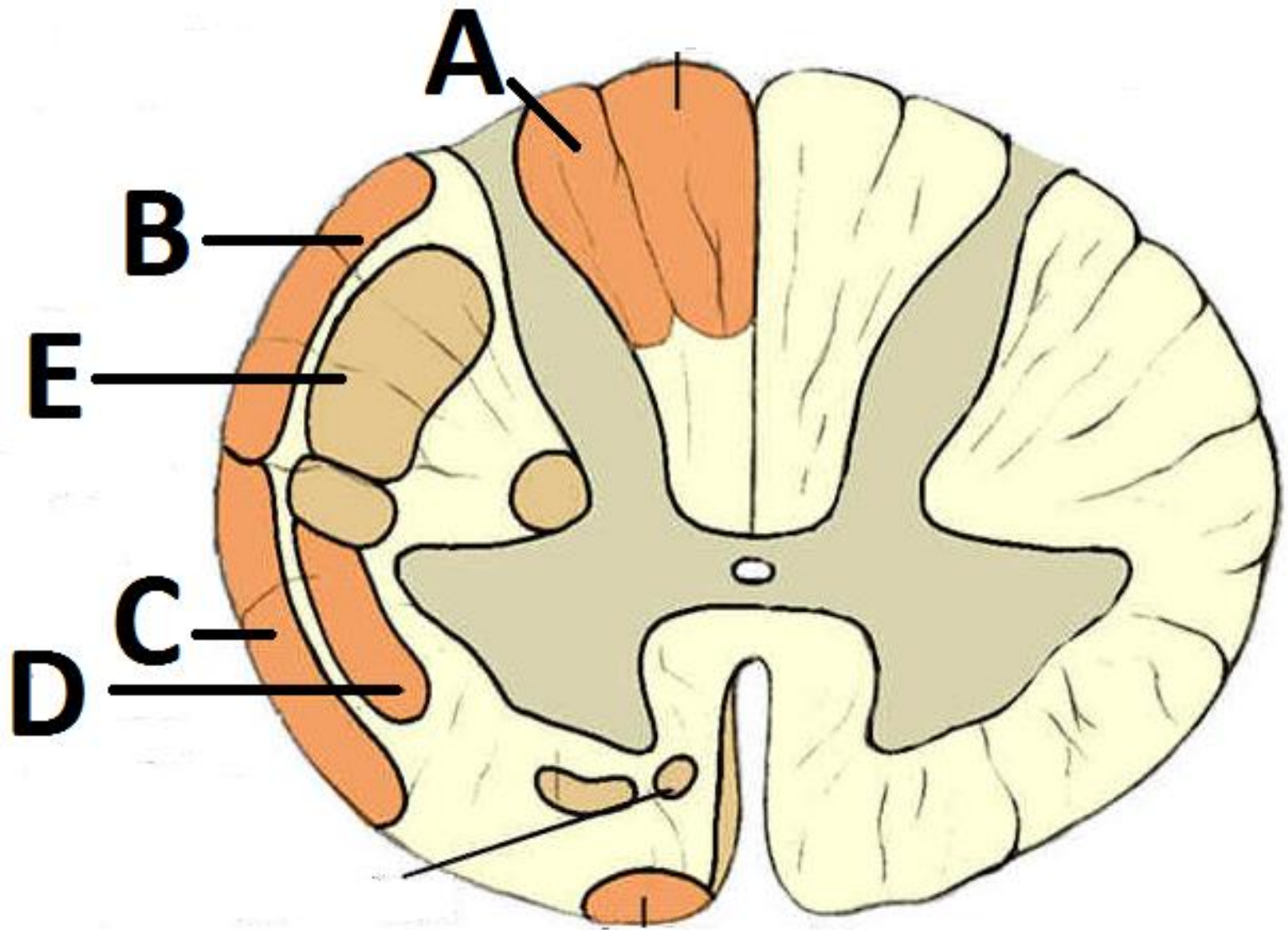








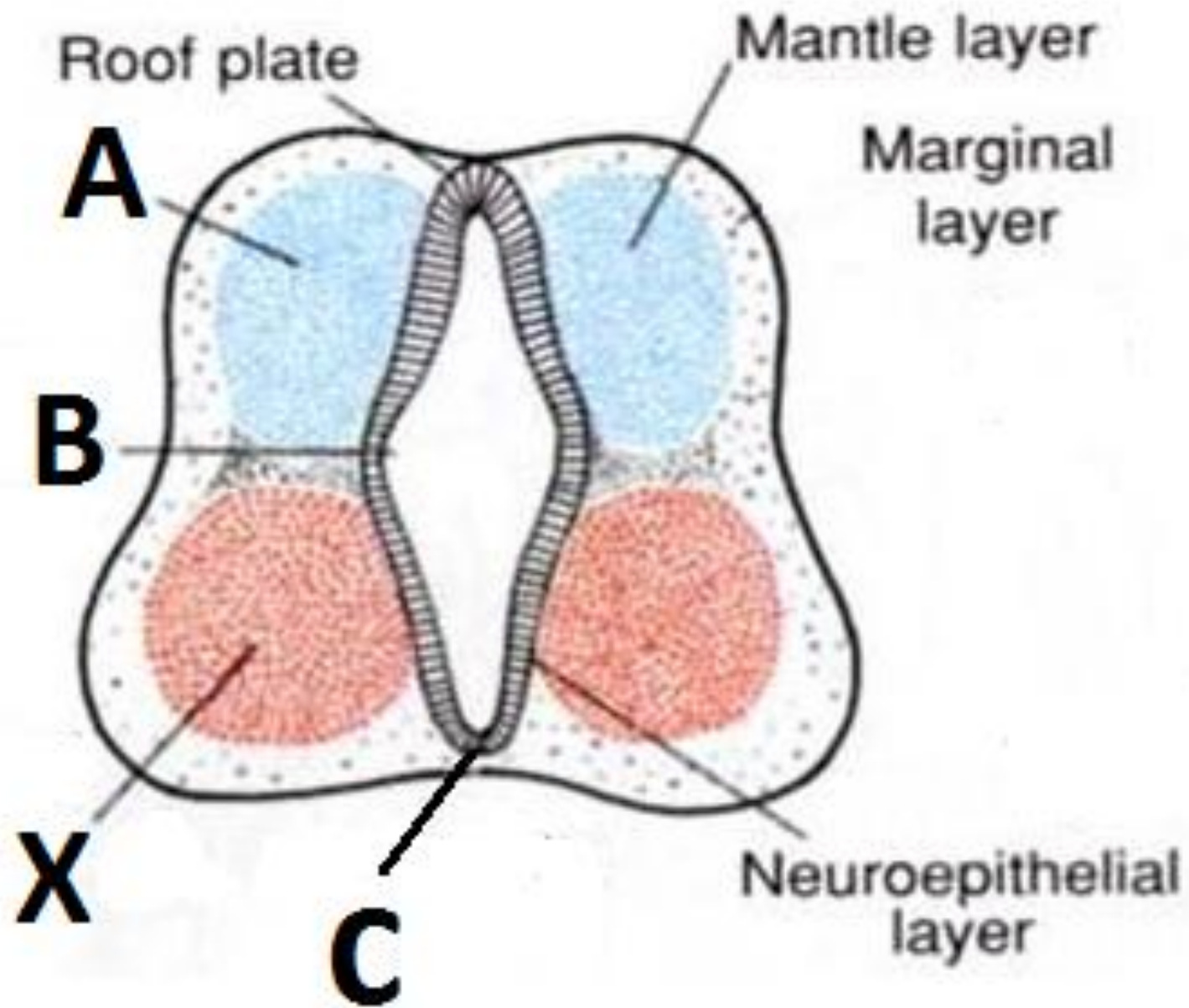


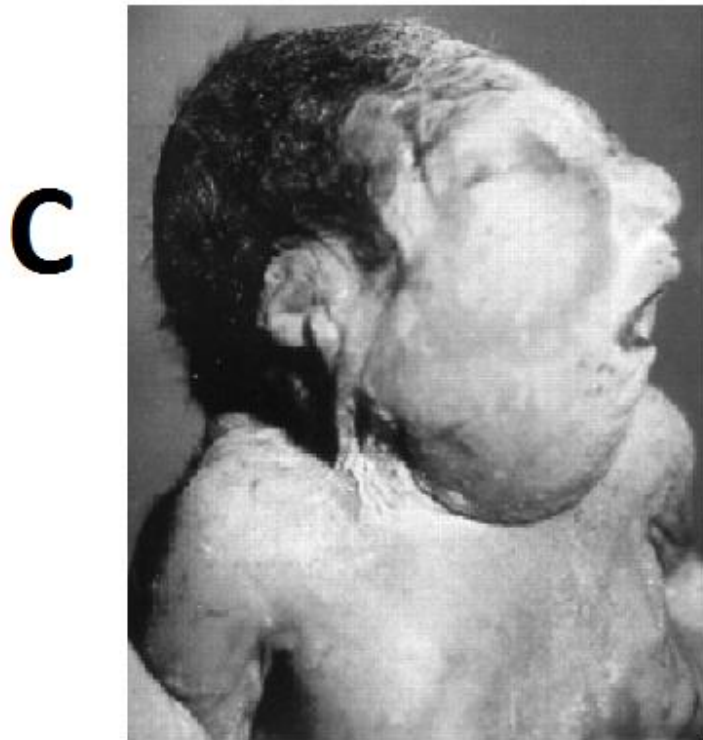
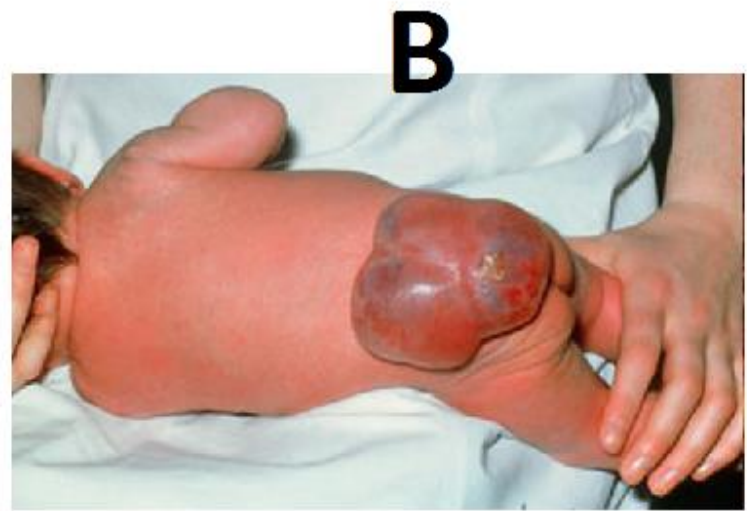


QUESTION 3

Amina was involved in a road traffic accident and sustained injury of the spine. Neurological investigation revealed weakness in the right lower limb but normal function of both upper limbs. She is also noticed to have a sensory level at the level of the navel.

- (a) State the sensory level
- (b) Give the anatomical basis of the clinical presentation
- (c) Illustrate with the aid of a cross-sectional diagram the tracts involved
- (d) Outline the pathway of (i) vibration (ii) pain sensation from the right big toe to the cerebral cortex





QUESTION 4

Discuss the anatomy of the spinal cord under the following

subheadings:

a) Extents (3 marks)

b) External features (5 marks)

c) Blood supply (4 marks)

d) Development and congenital anomalies (8 marks)

THE END

