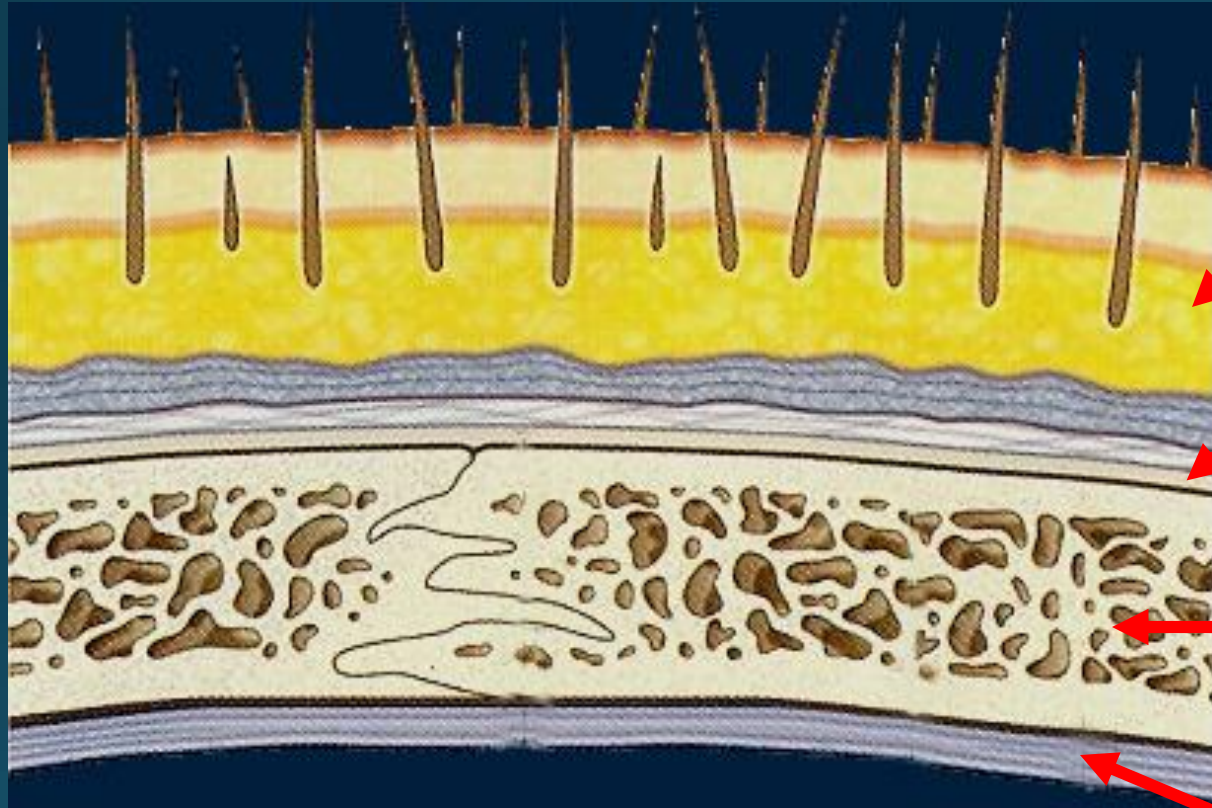


Dr Maan Al-Abbasi

# Dural Venous Sinuses

**CAVERNOUS SINUS**

# Skull bones coverings



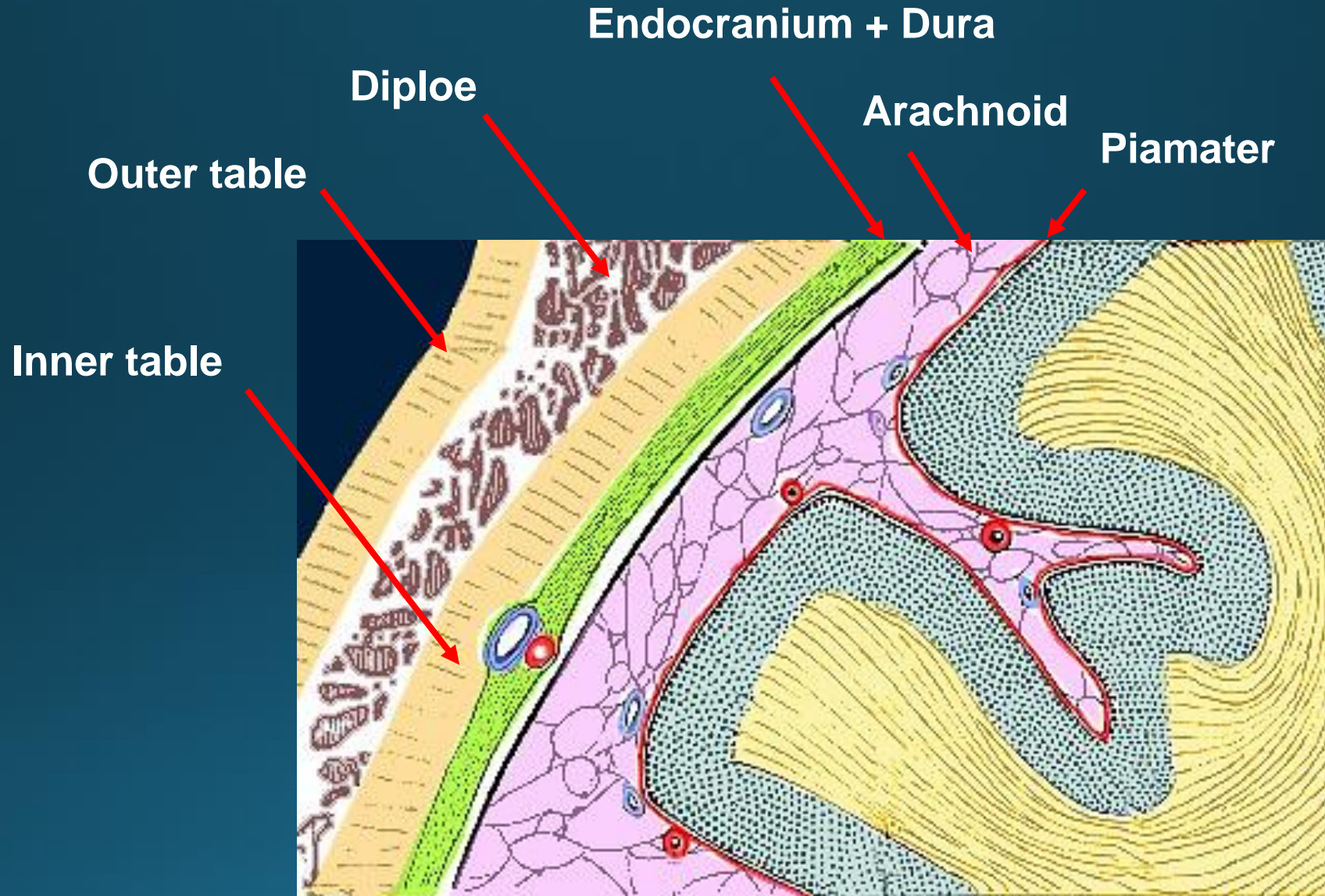
Scalp

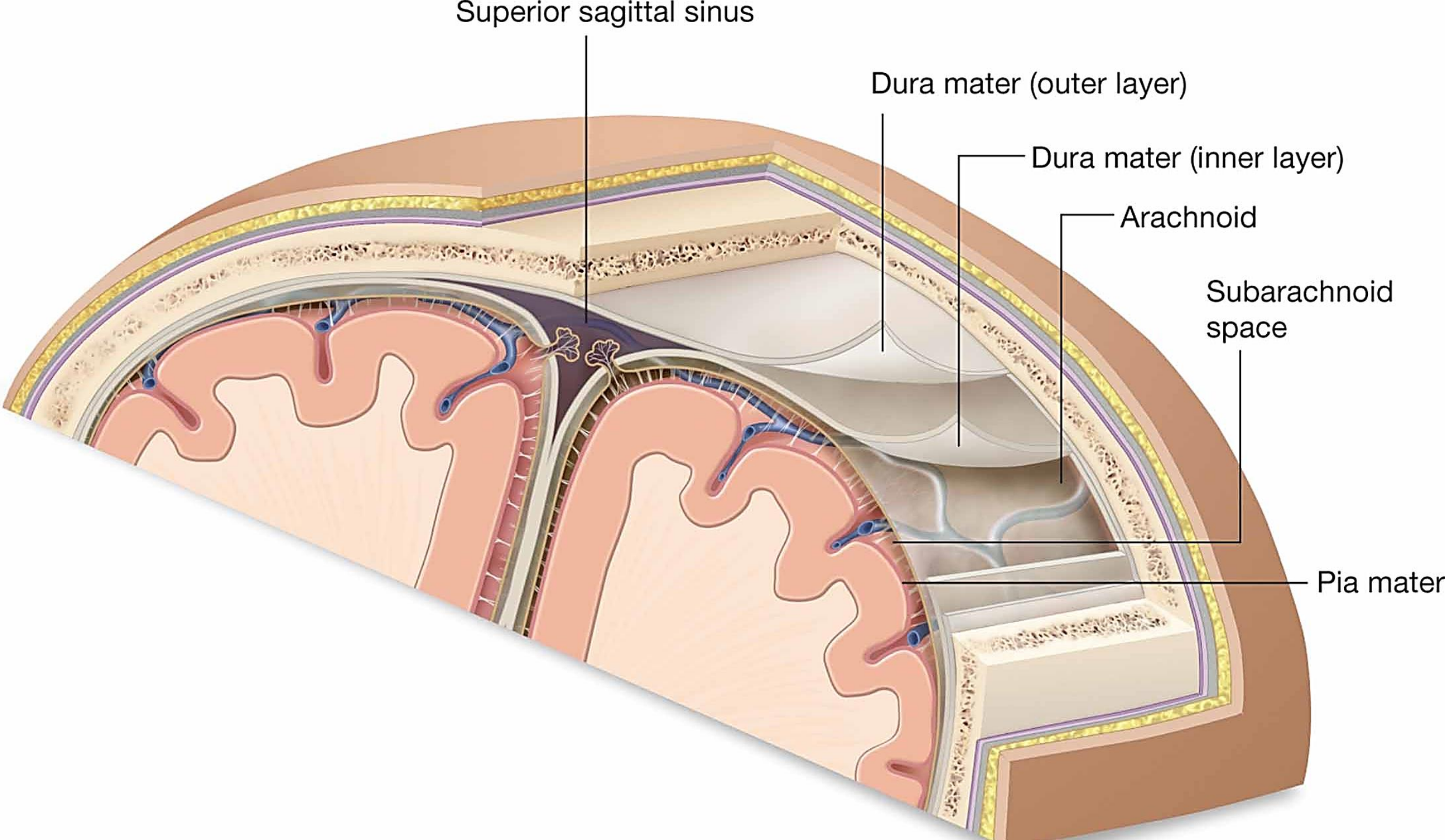
Pericranium

Diploe

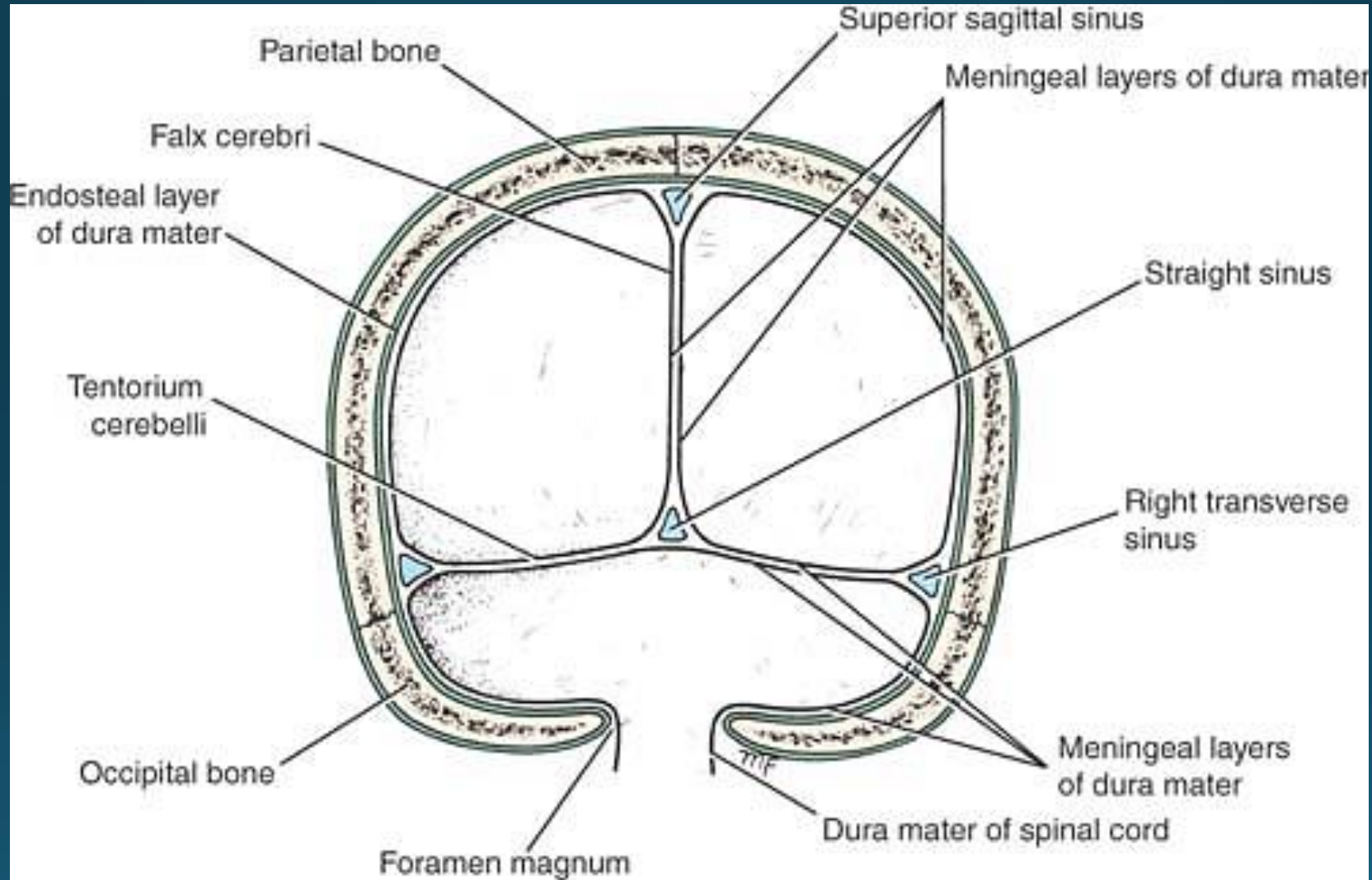
Dura

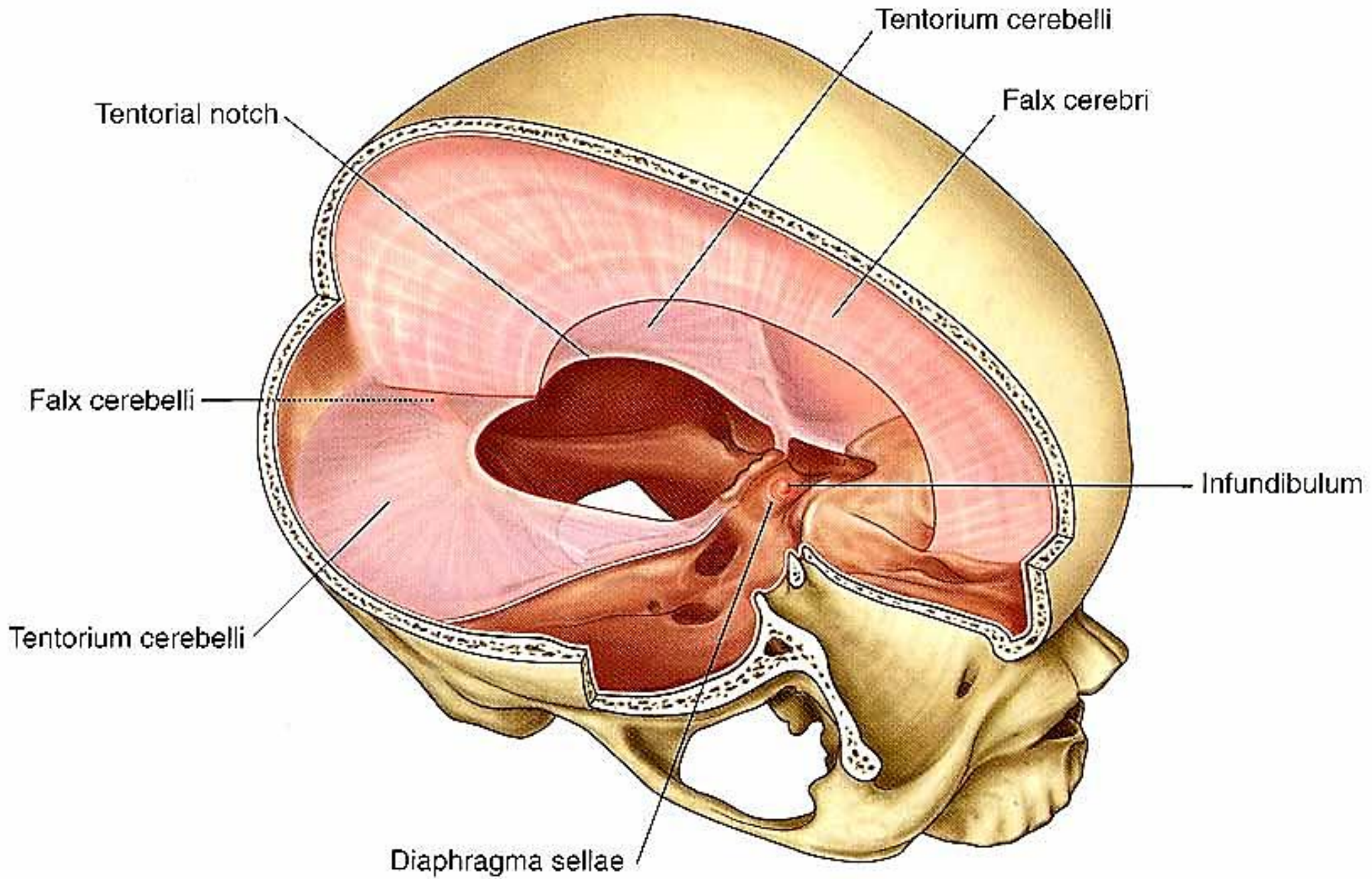
# Skull bones coverings

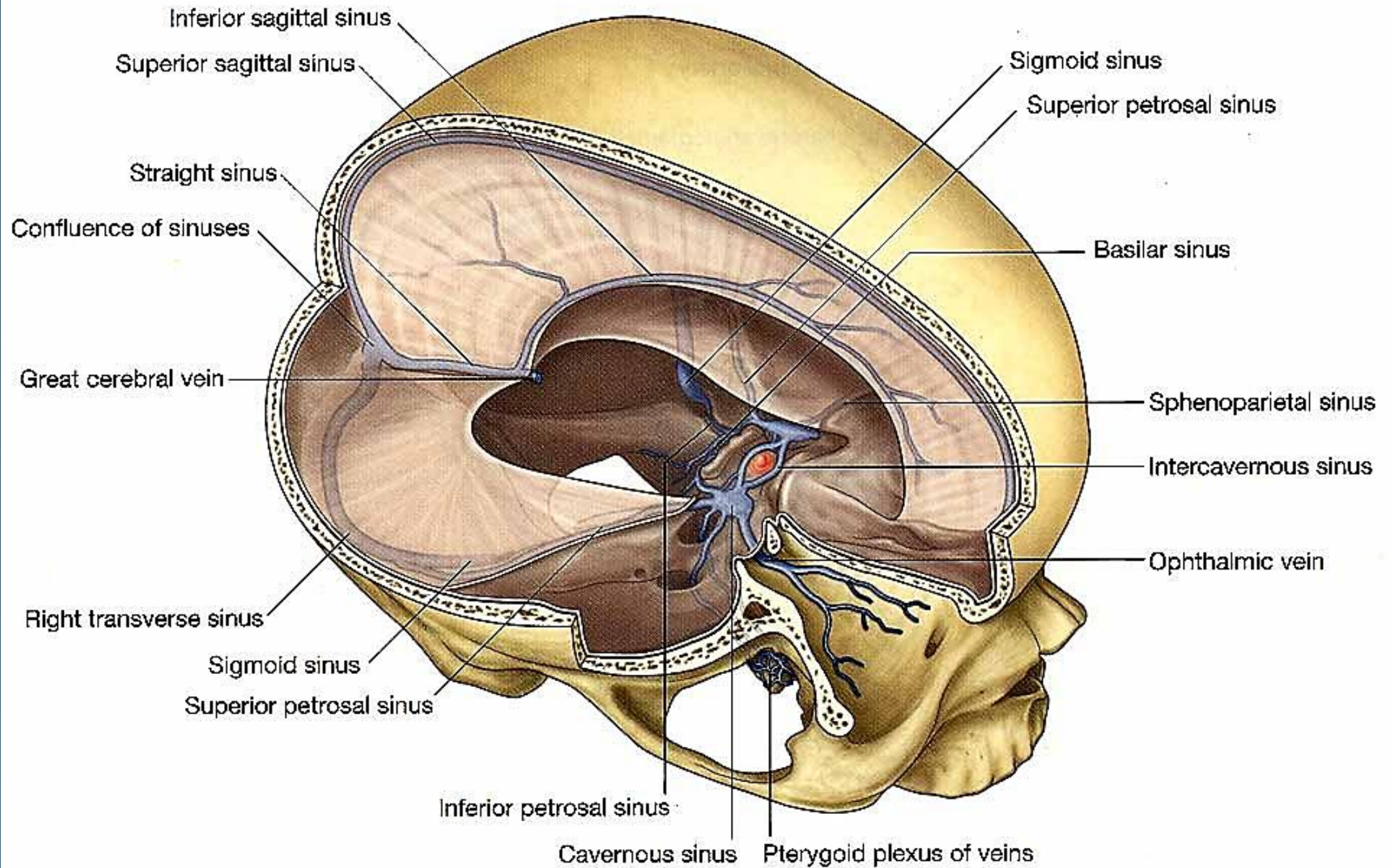




# TENTORIUM CEREBELLI



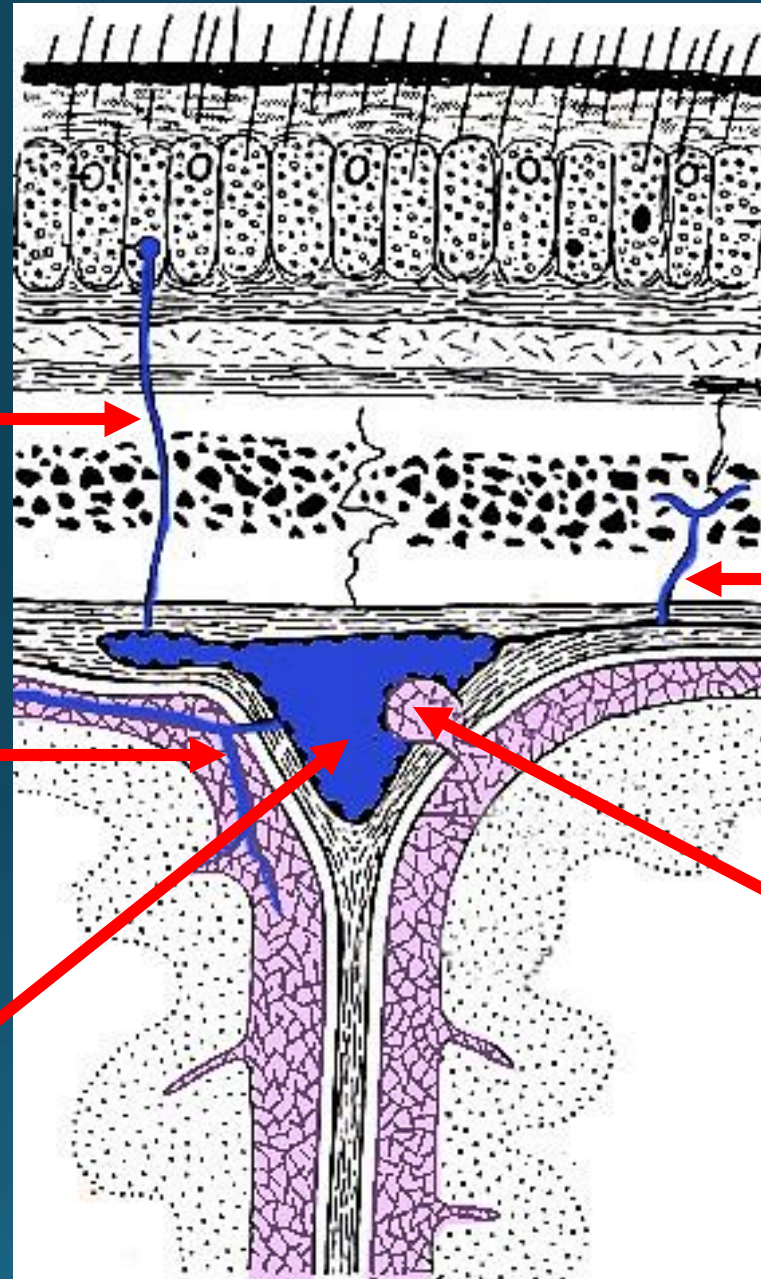




**Emissary vein**

**Cerebral vein**

**Sup.Sag. Sinus**



**Diploic vein**

**CSF through Archnoid granulation**



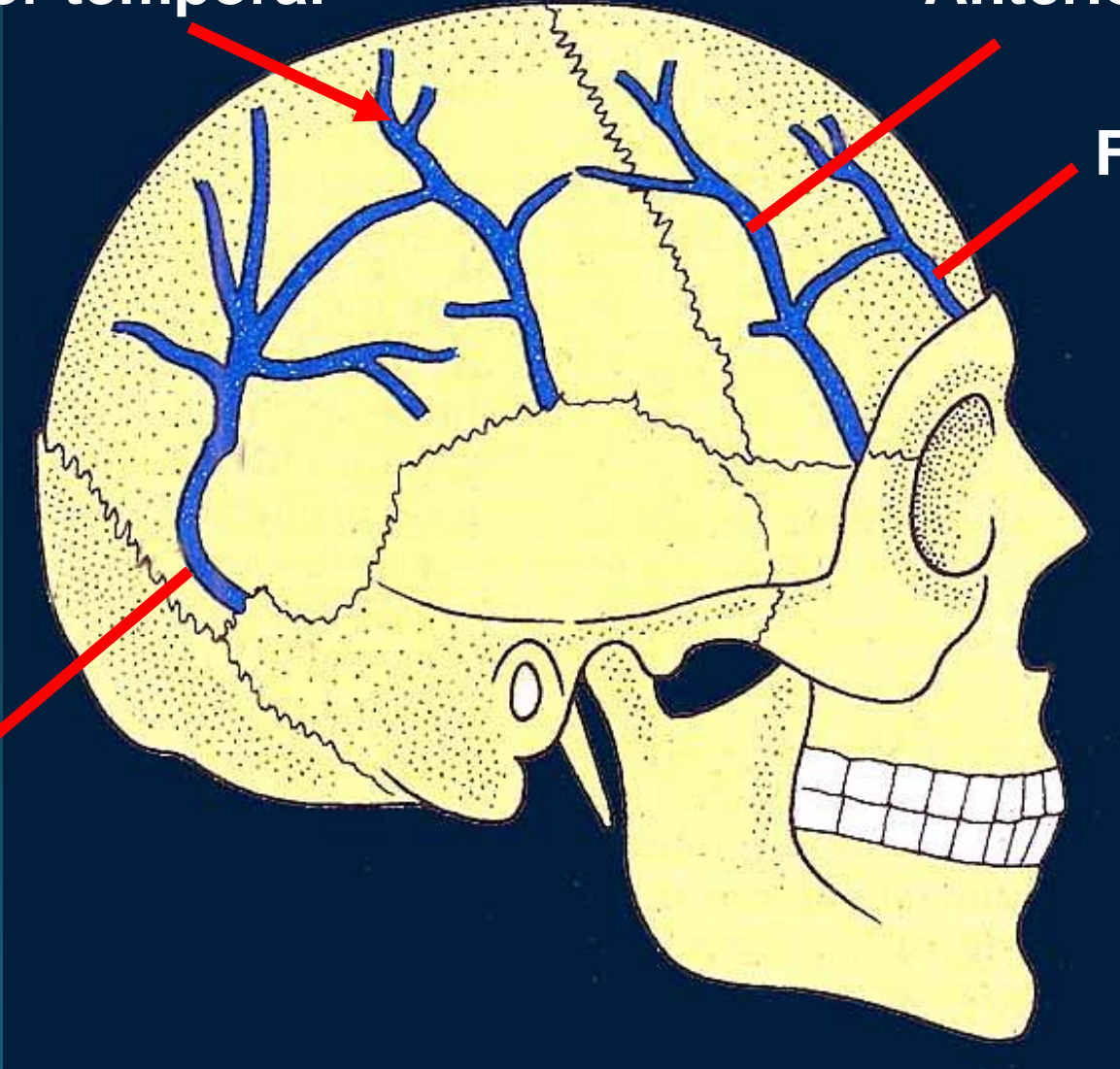
**Diploic veins**

**Posterior temporal**

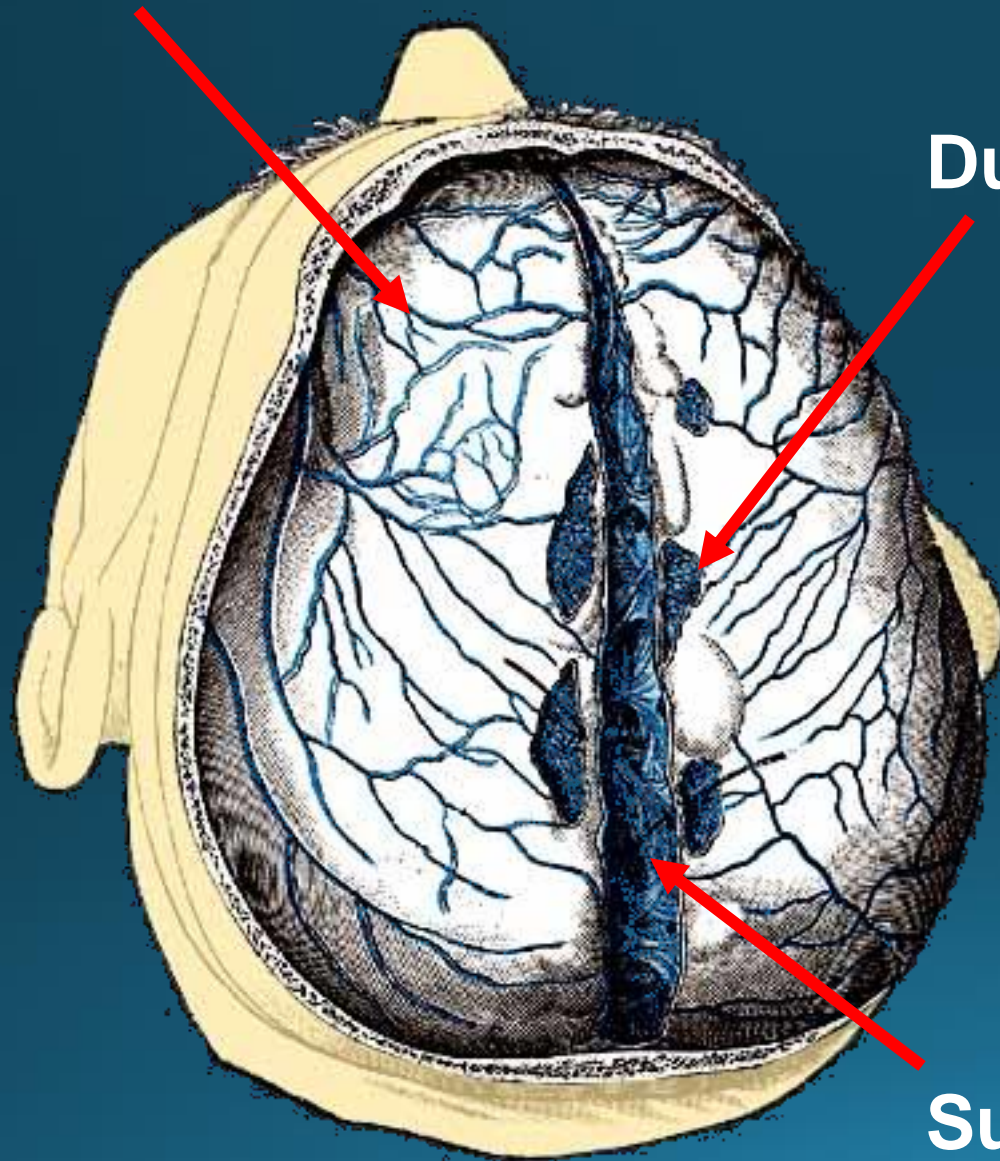
**Anterior temporal**

**Frontal**

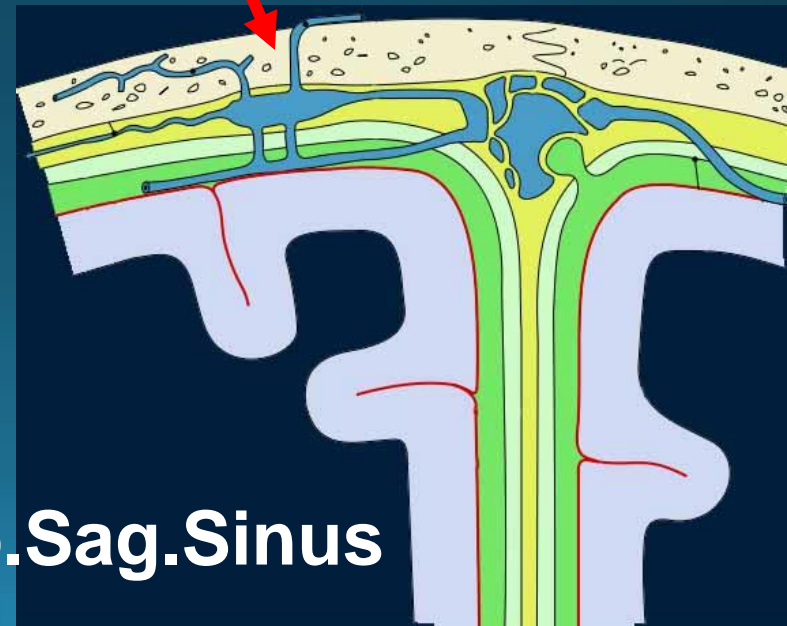
**Occipital**



**Dural Veins**



**Dural Lacnua**



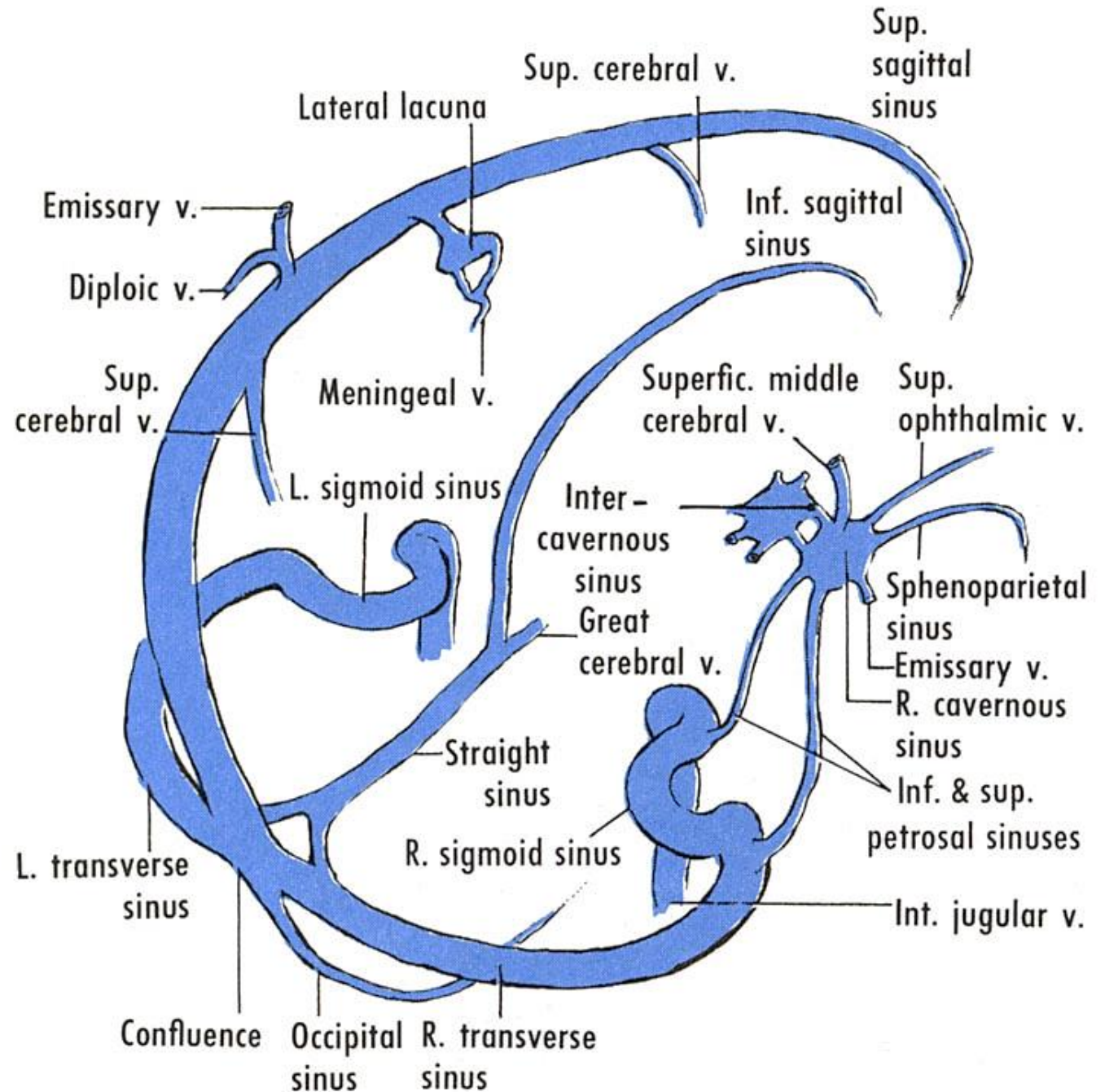
**Sup.Sag.Sinus**

# Dural Venous Sinuses

- Venous channels situated between inner & outer layers of Dura mater
- Drain the venous blood of the brain & bones of the skull.
- Transmit the venous blood to the internal jugular vein.
- Communicates with the internal vertebral venous plexus through the foramen magnum
- Also communicates with the scalp veins through the emissary veins
- Valveless

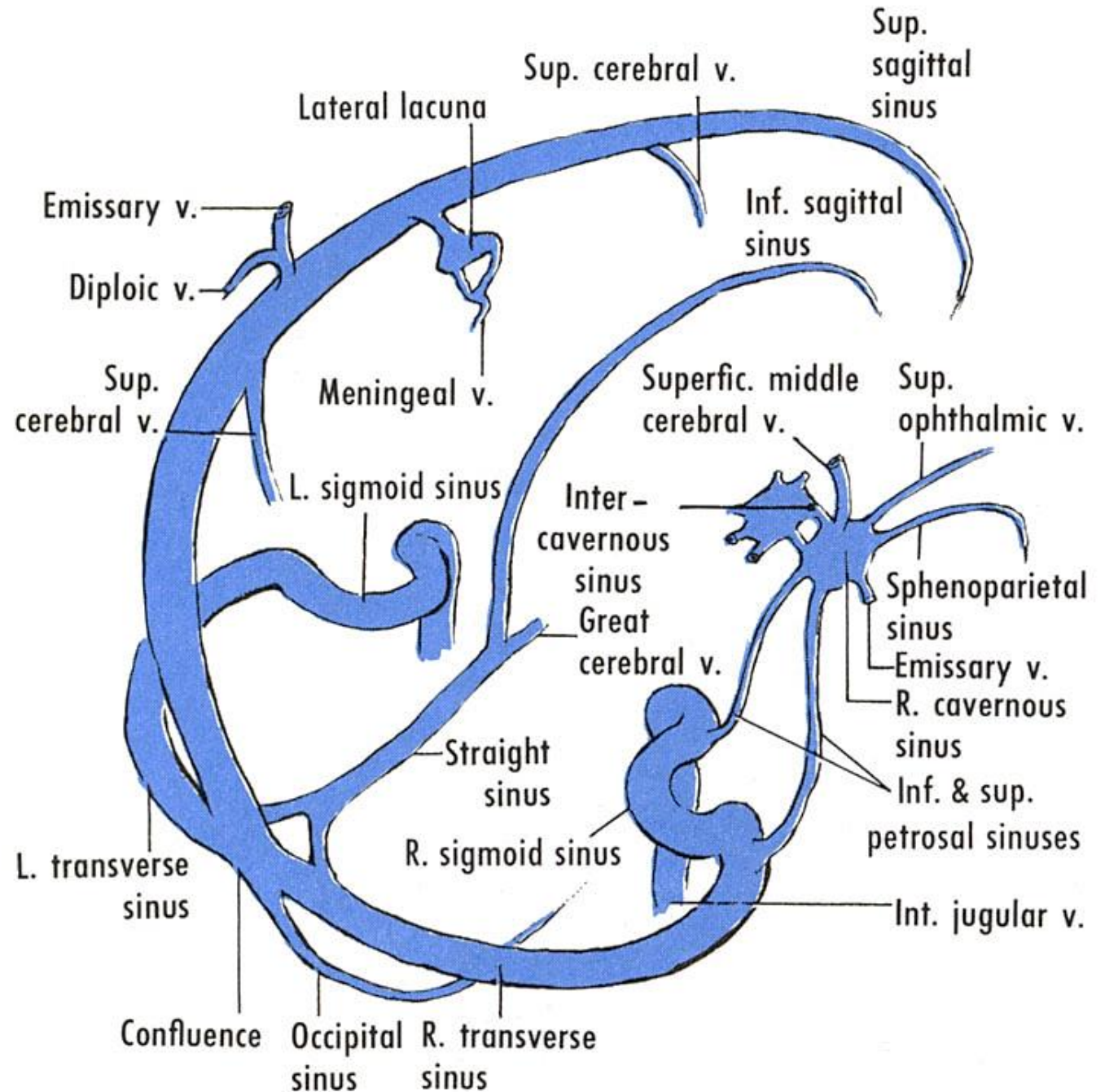
## Single:

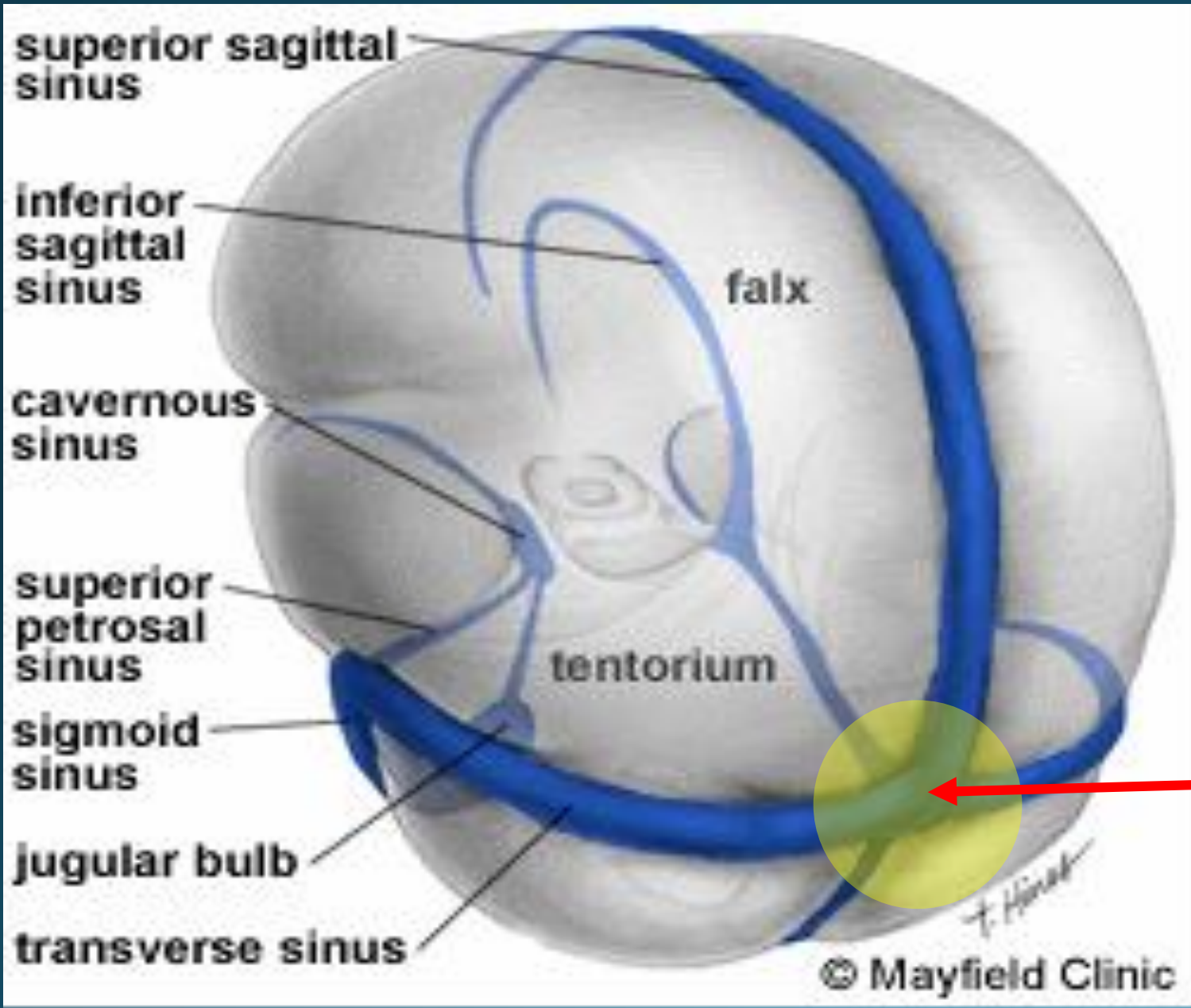
1. Superior sagittal
2. Inferior sagittal
3. Straight
4. Occipital
5. Ant. Intercavernous
6. Post. Intercavernous
7. Basilar venous plexus



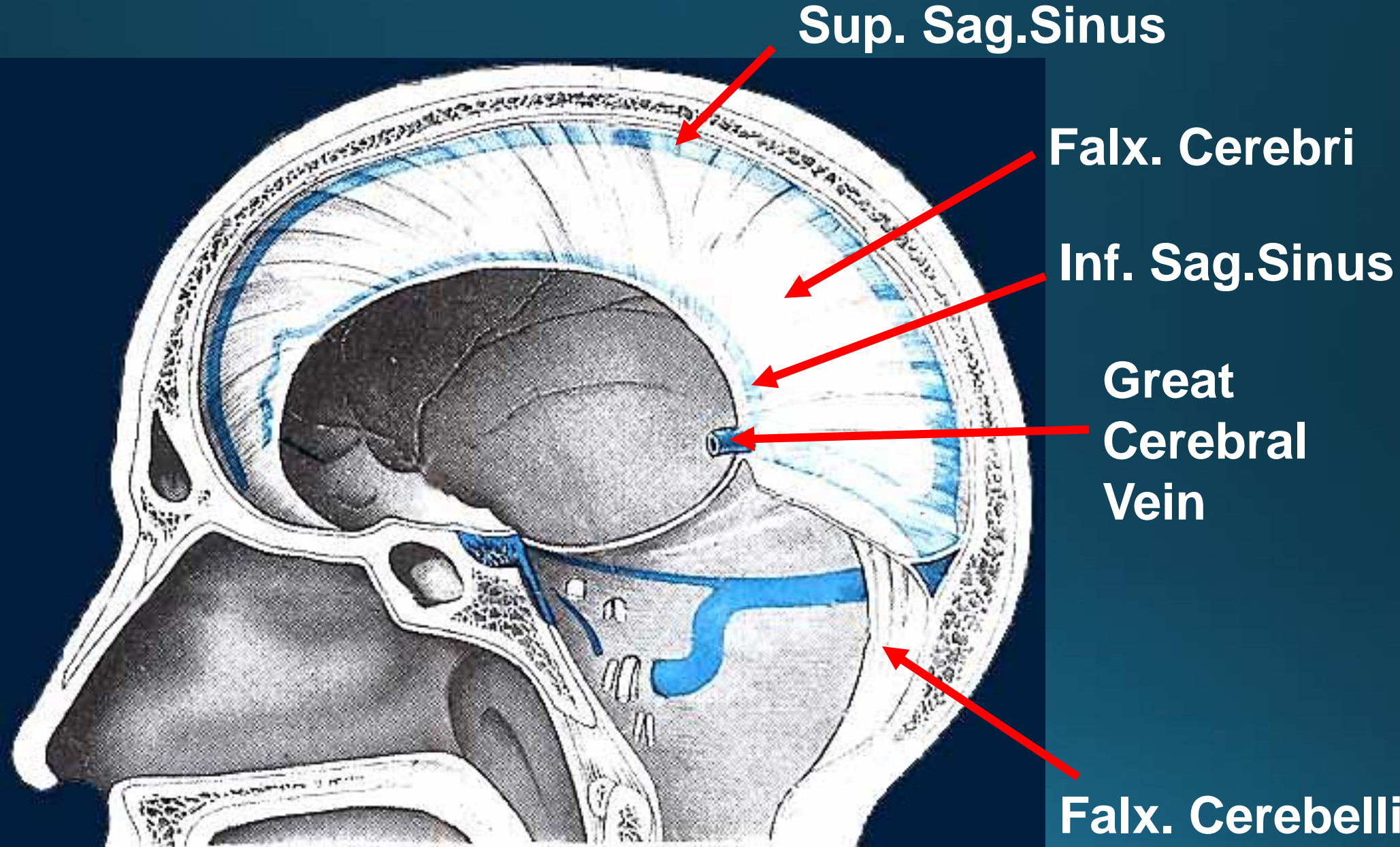
## Paired:

1. Transverse
2. Sigmoid
3. Cavernous
4. Sup. Petrosal
5. Inf. Petrosal
6. Sphenoparietal
7. Petrosquamous
8. Middle meningeal

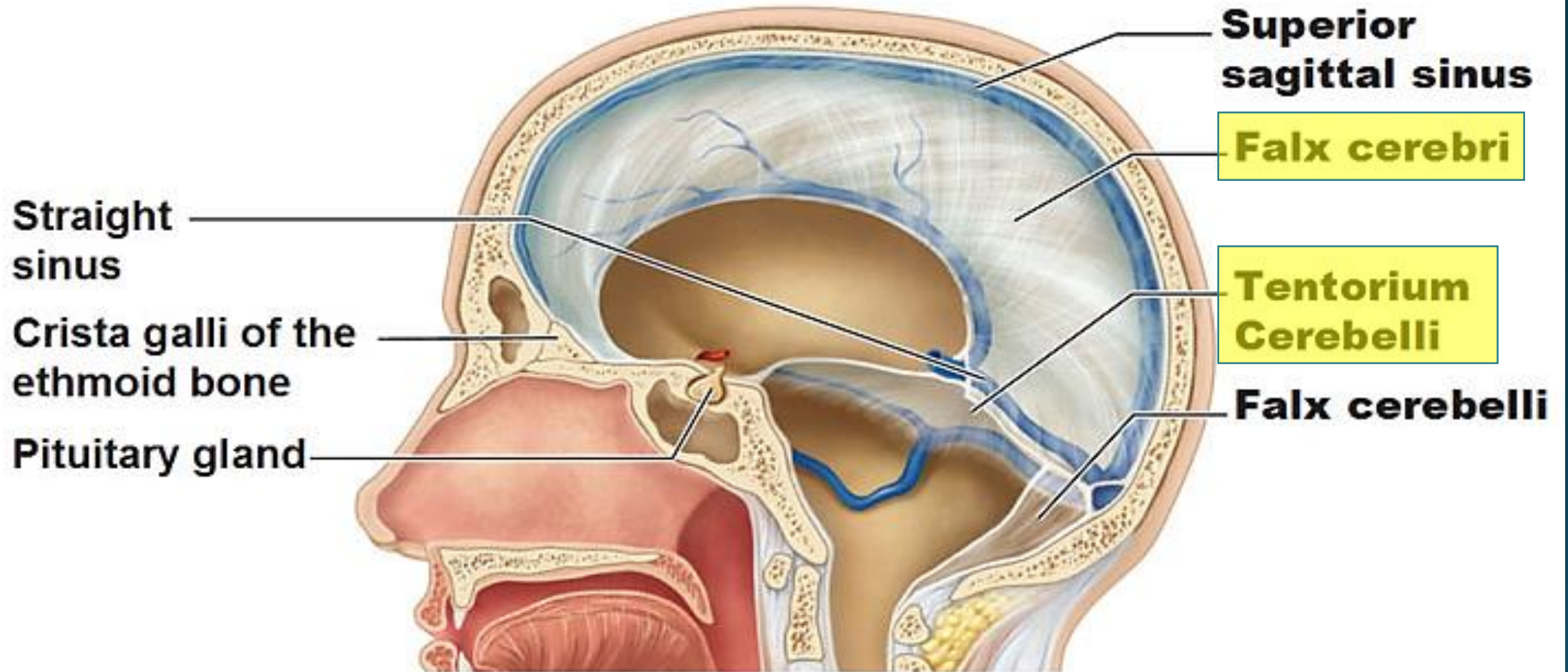




**Confluence  
of veins**



# Straight sinus: It lies at the junction of the



**(a) Midsagittal view**



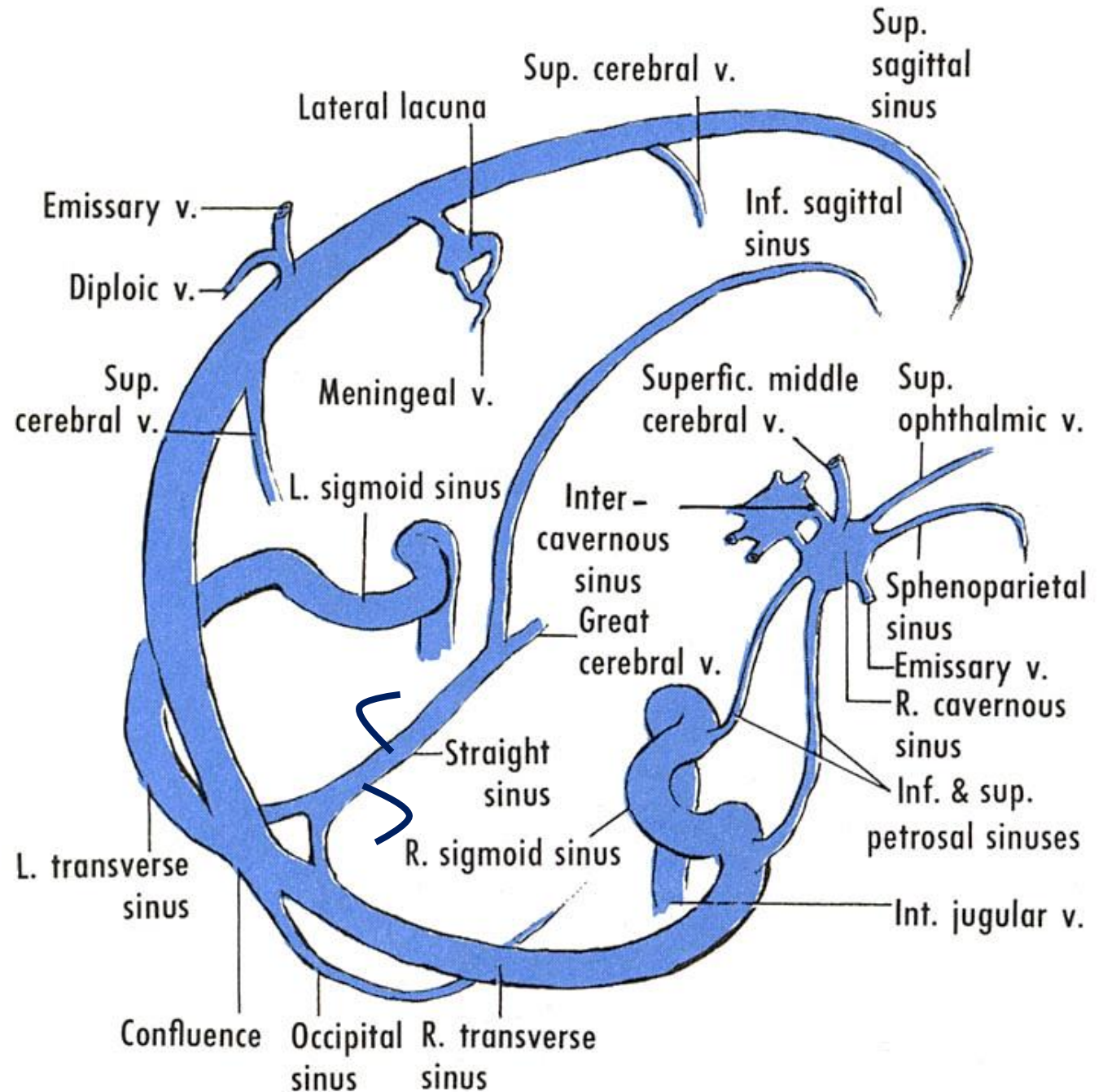
# Straight sinus

It receives :

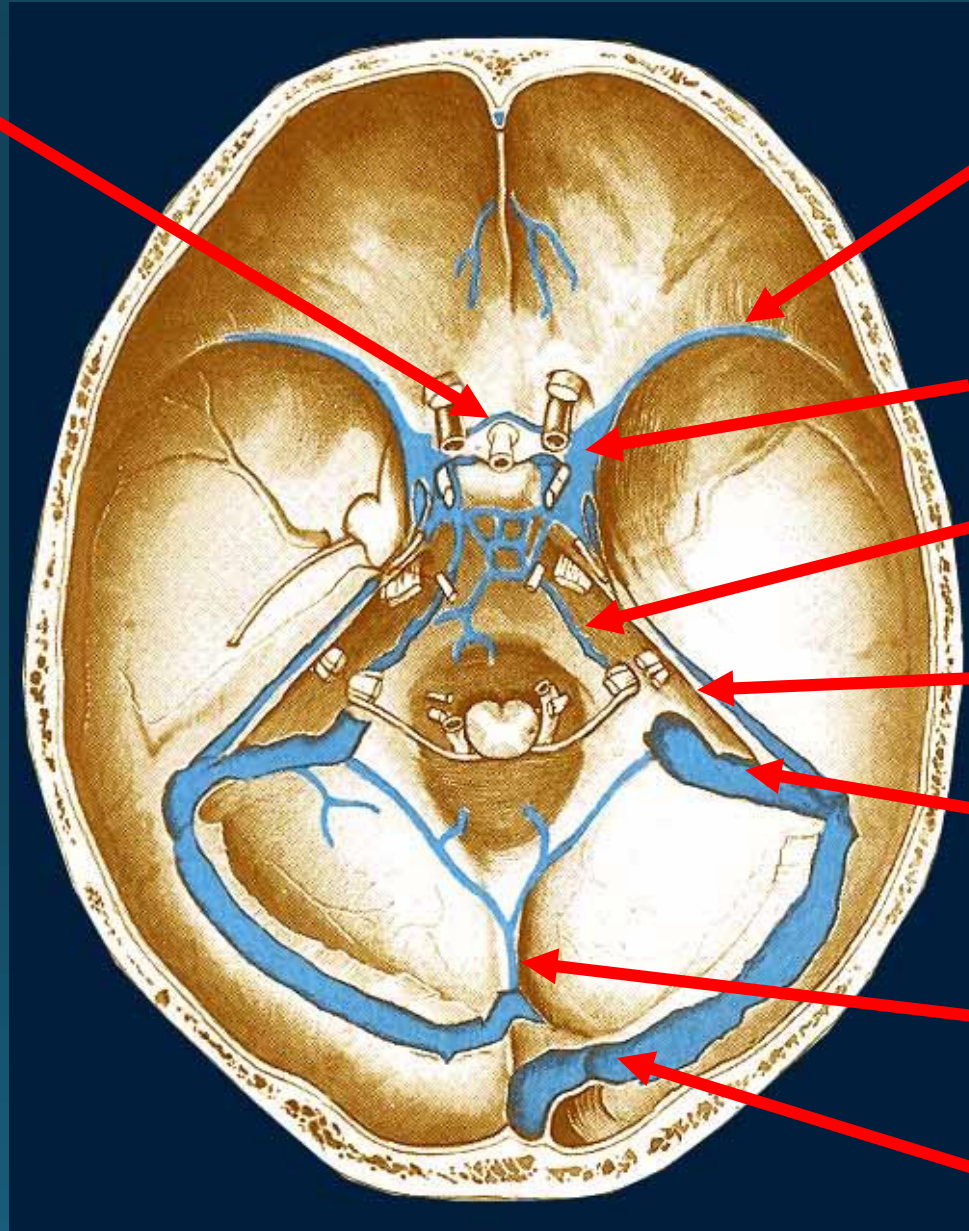
- 1- inferior sagittal sinus
- 2- great cerebral vein

It ends at internal occipital protuberance by becoming the left transverse sinus

It receive the **superior petrosal sinuses**, the **inferior cerebral and cerebellar veins**, and the **diploic veins**.



**Ant. intercavernous**



**Sphenoparietal**

**Cavernous**

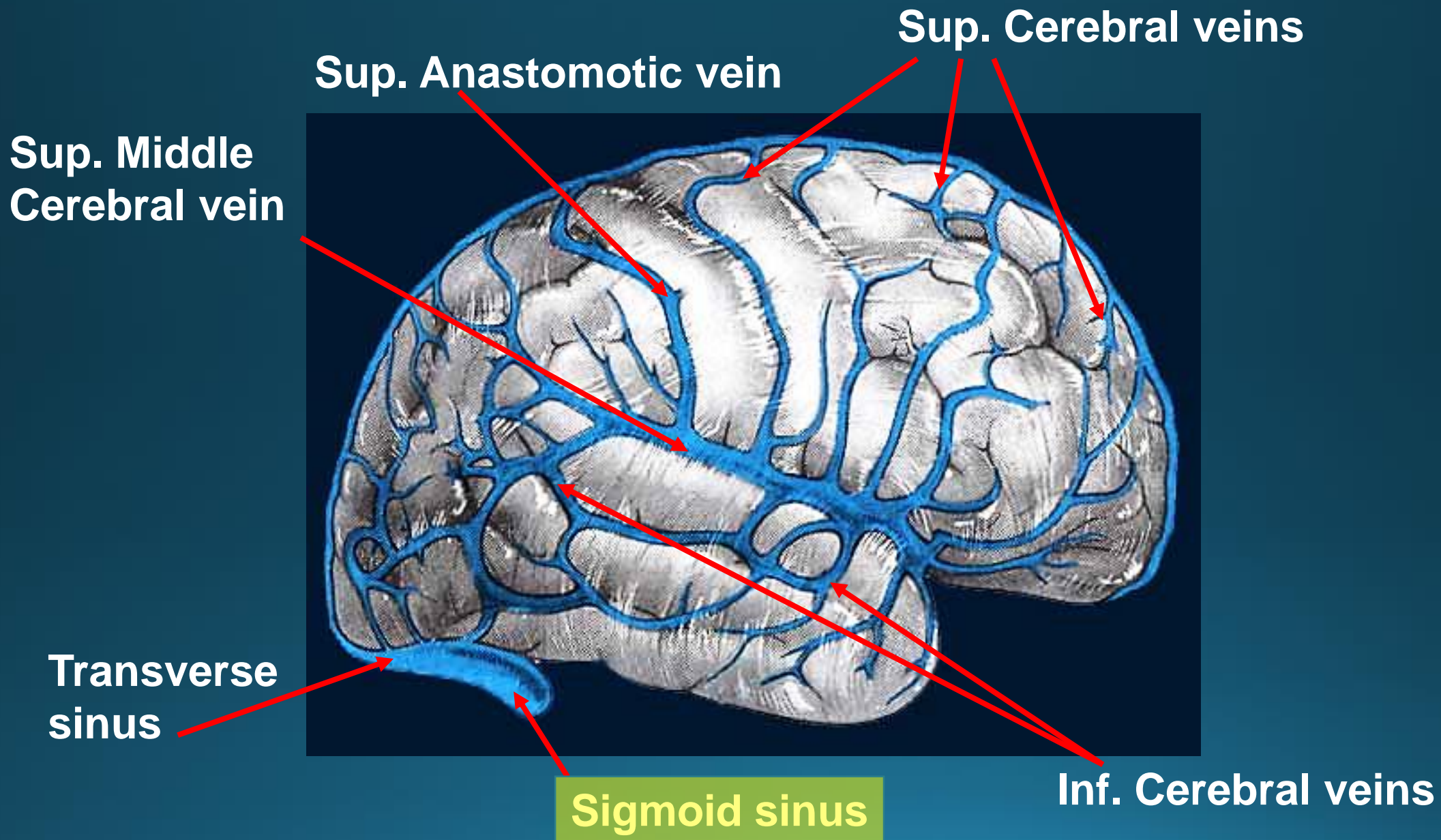
**Inf. petrosal**

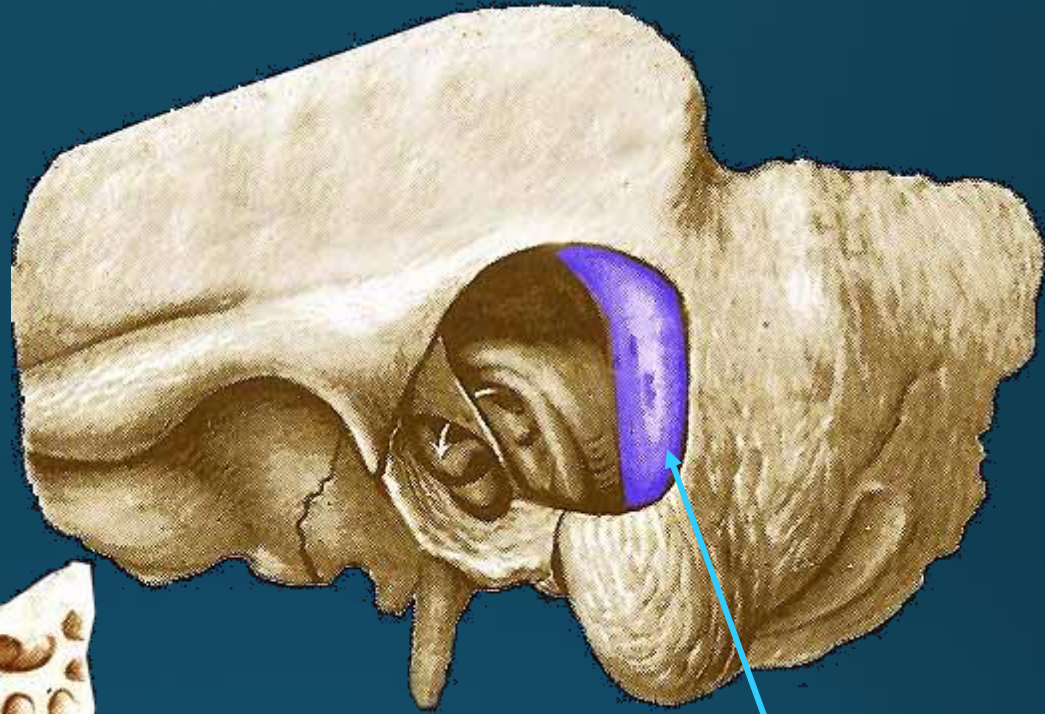
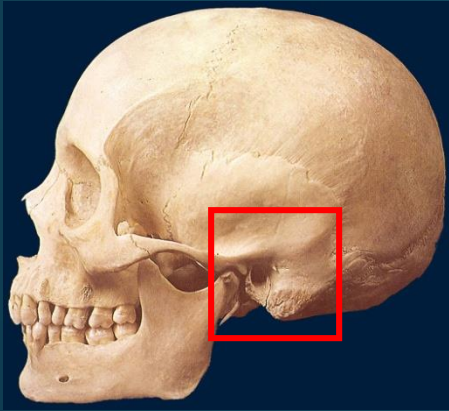
**Sup. petrosal**

**Sigmoid**

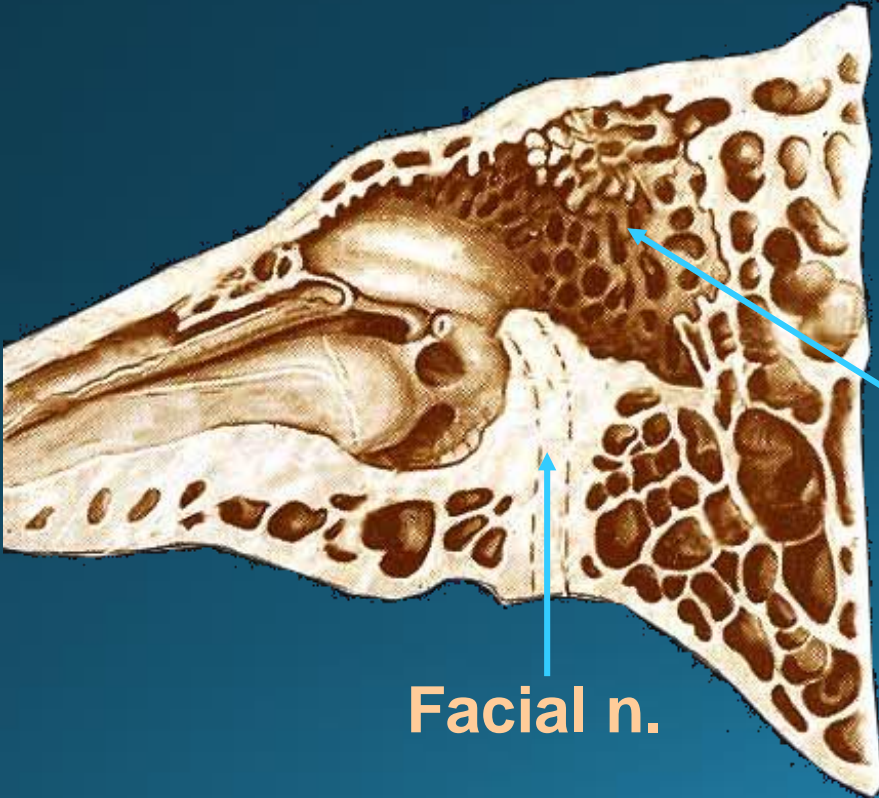
**Occipital**

**Transverse**





Wall of groove for Sigmoid sinus

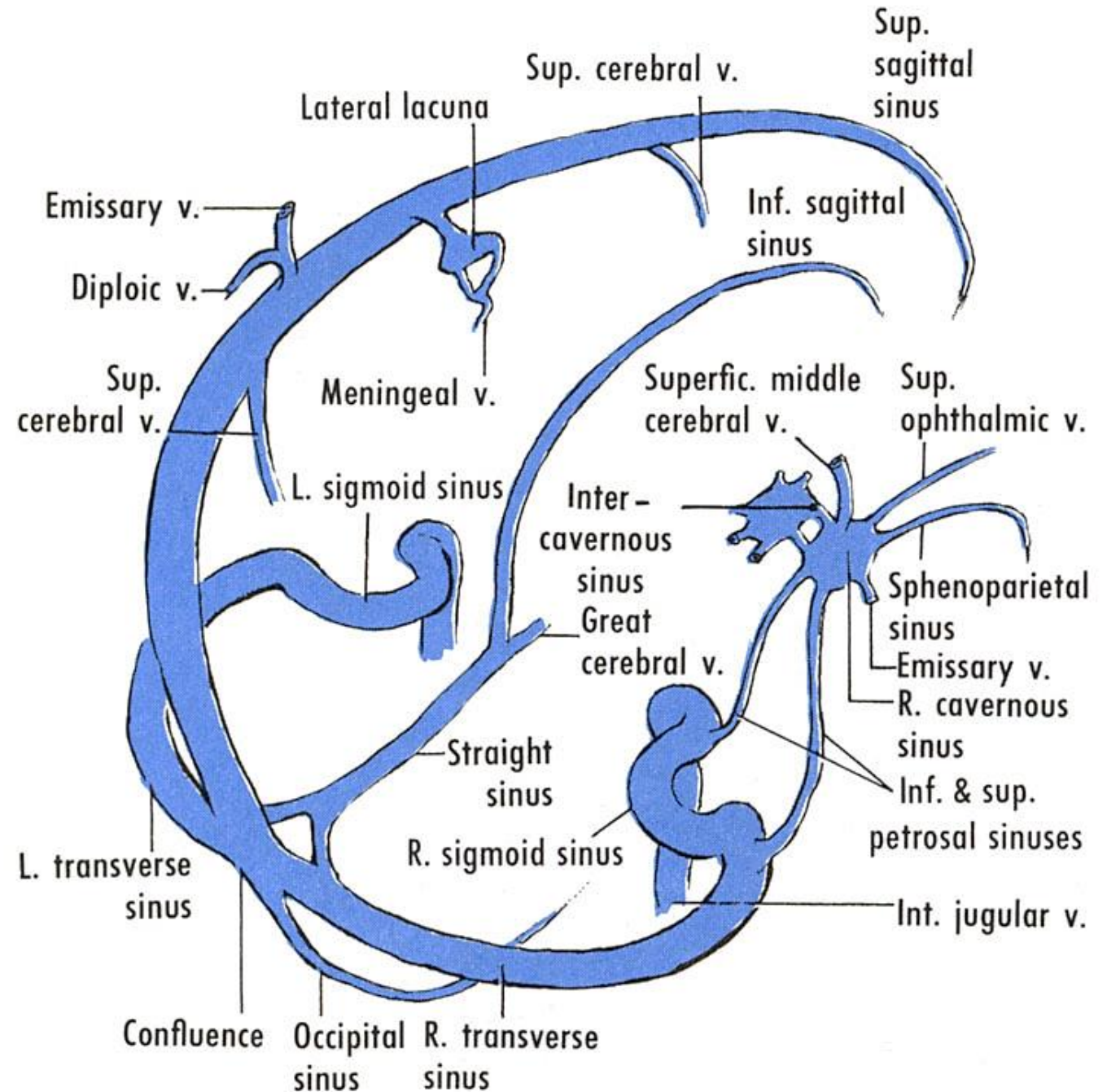


Mastoid antrum

Facial n.

# occipital sinus

- It is the smallest dural sinus & is situated in the attached margin of the falx cerebelli
- It continues with the internal vertebral plexus



# Cavernous sinus

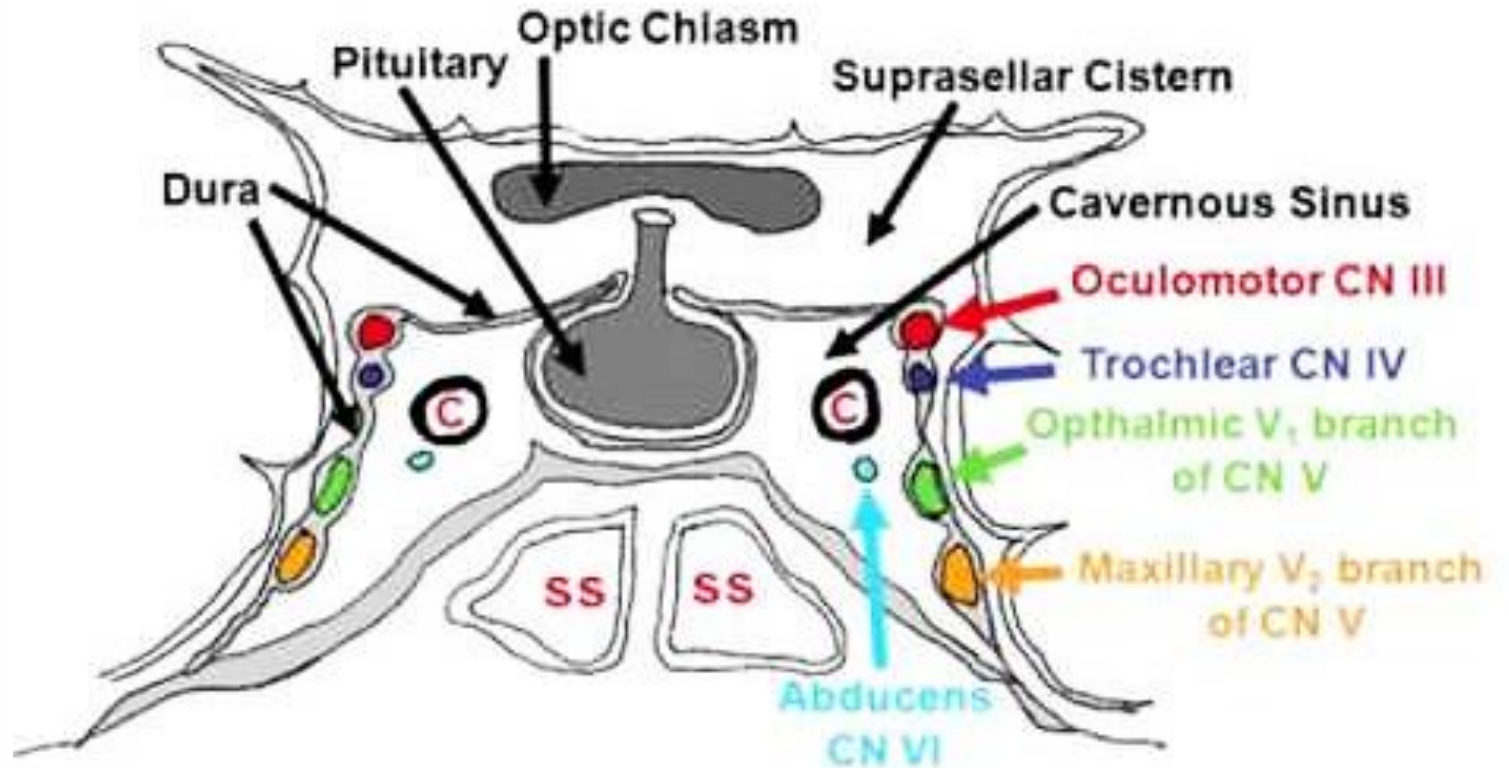
## Relations:

### Medially

- Sphenoid air sinus
- Pituitary gland

### Laterally

- Trigeminal ganglion
- Uncus of temporal lobe



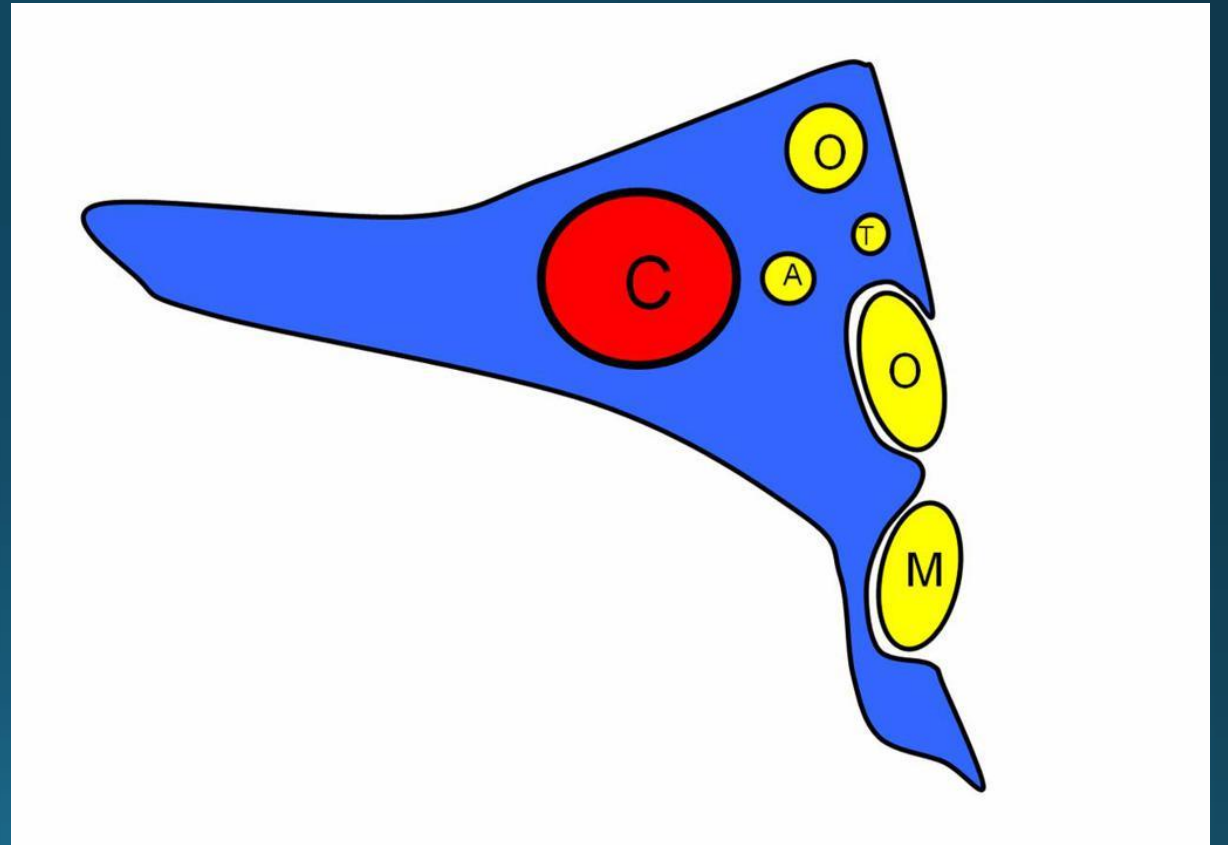
# Cavernous sinus

- Communicate
- Spongy appearance



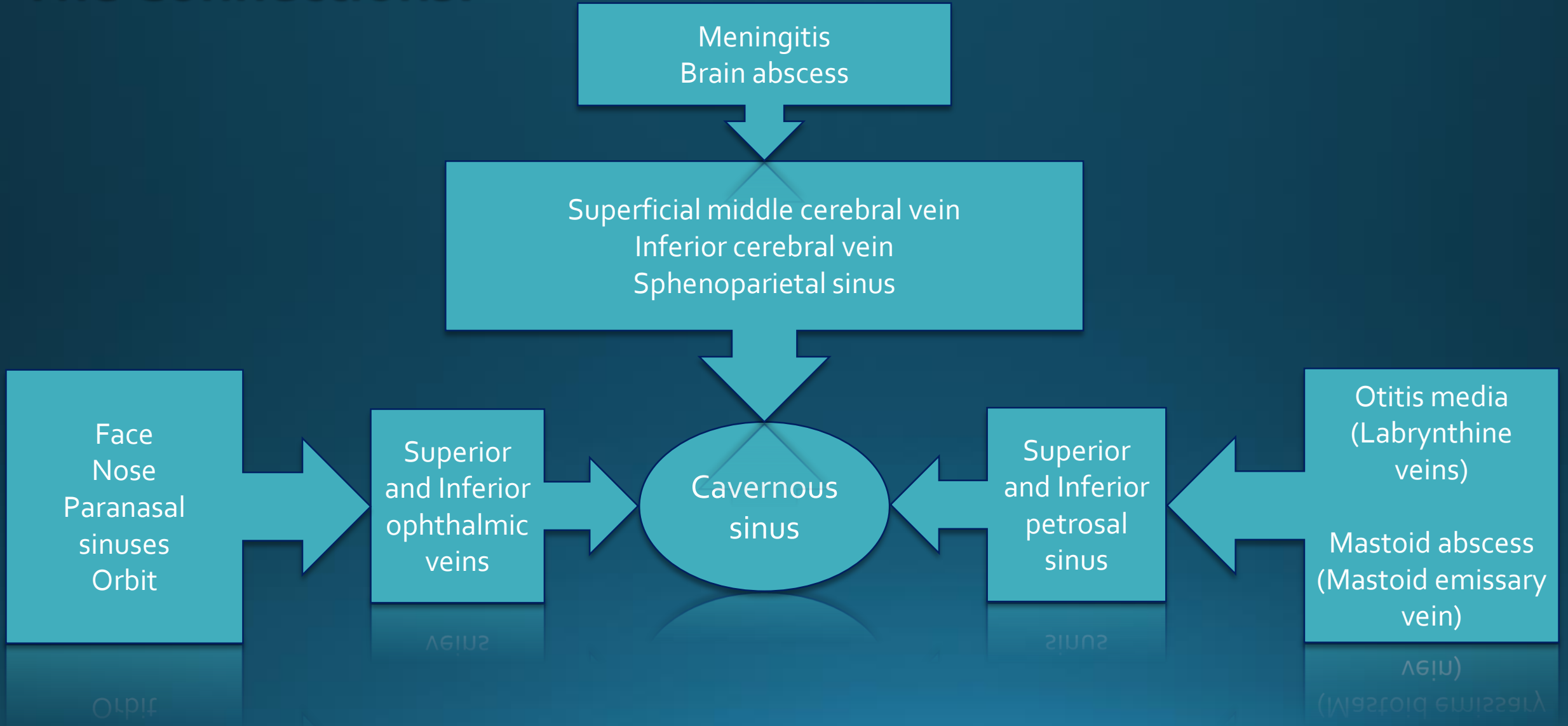
# O TOM CAT

- O: oculomotor nerve
- T: trochlear nerve
- O: ophthalmic nerve
- M: maxillary nerve
- C: internal carotid artery
- A: abducent nerve
- T: trochlear nerve





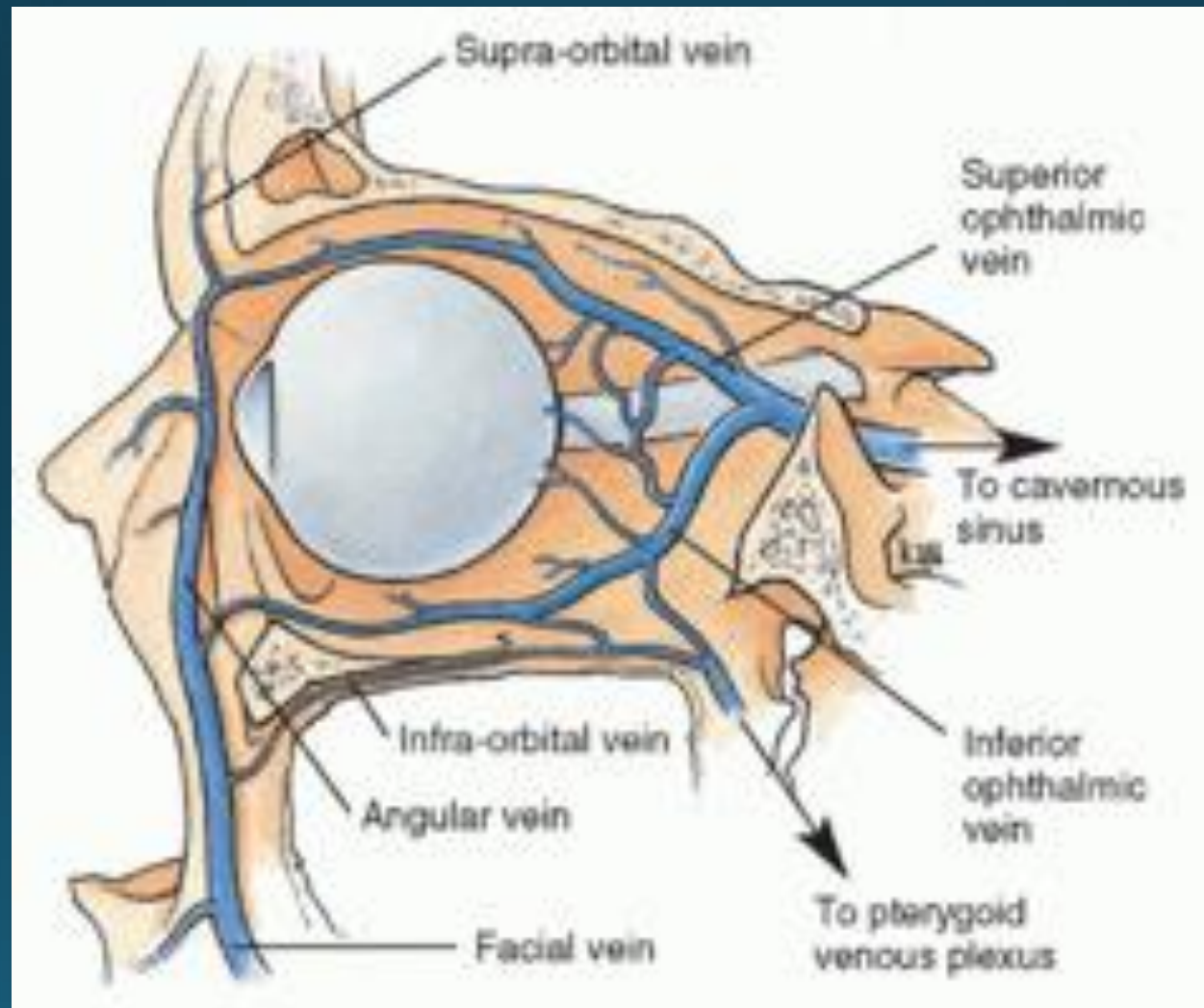
# The Connections!



**Quiz/** Name the routes of communication between the cavernous sinus and the veins of the face.

1. Superior ophthalmic veins
2. Deep facial vein
3. pterygoid plexus of veins
4. emissary vein through the foramen Ovale

# Routes of communication between the cavernous sinus and the veins of the face



# Tributaries of cavernous sinus

## A. Anteriorly

- Ophthalmic vein
- Spheno-parietal sinus

## B. Posteriorly

- Superior petrosal sinus
- Inferior petrosal sinus

## C. Medially

- Anterior & posterior intercavernous sinuses

## D. Superior

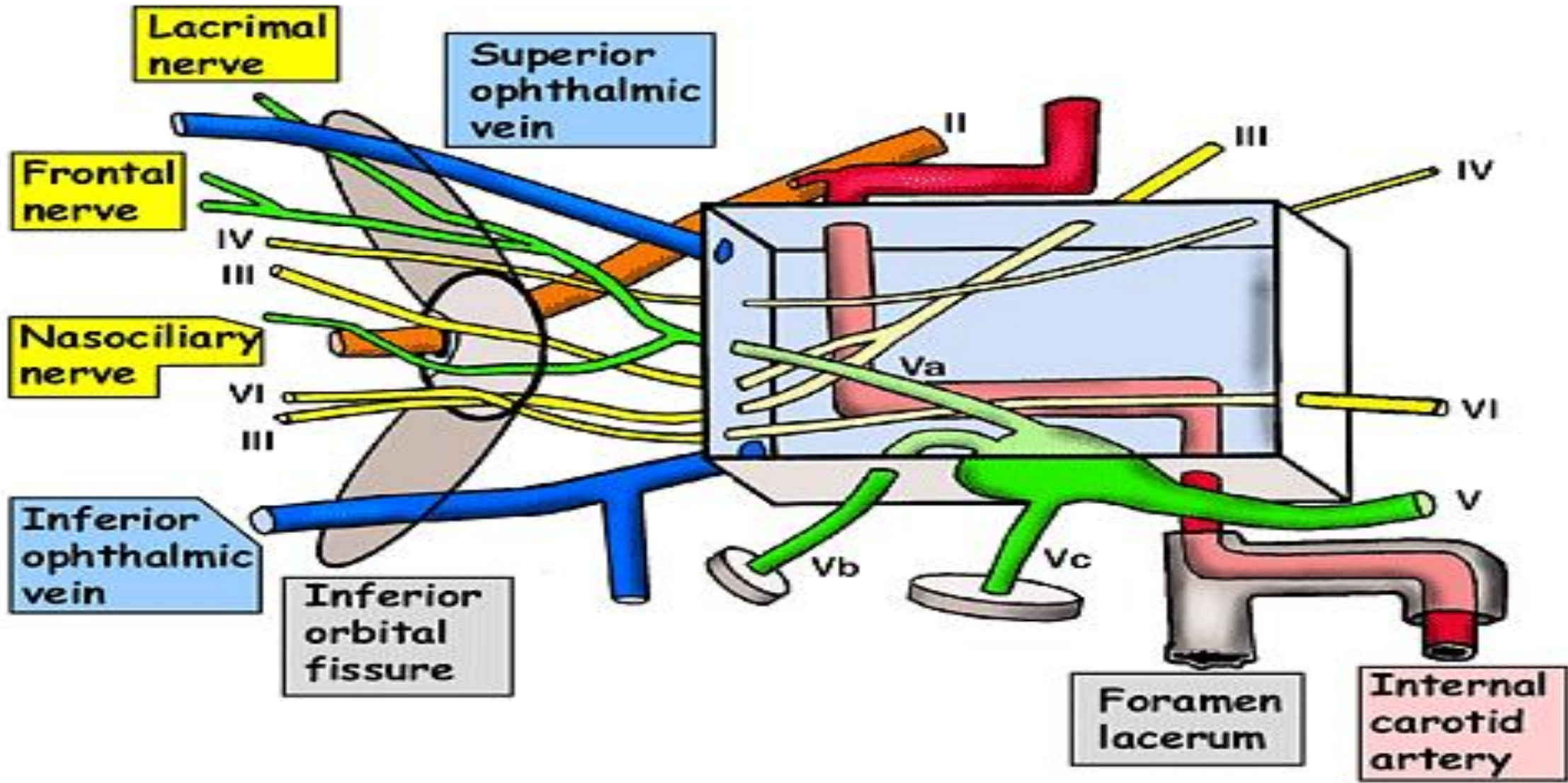
- Superficial middle cerebral vein
- Veins from inferior surface of brain

## E. Inferior

- Emissary vein through the carotid canal which connects the sinus with internal jugular vein
- Emissary vein through the foramen ovale which connects the sinus with pterygoid venous plexus



# CAVERNOUS SINUS LEFT SIDE LATERAL VIEW



# Cavernous sinus Thrombosis

## Causes:

- Bacterial infection that has spread from the sinuses, teeth, ears, eyes, nose, or skin of the face

## Symptoms:

- Bulging eyeball, usually on one side of face
- Cannot move the eye in a particular direction
- Drooping eyelids
- Headaches
- Vision loss



## Blood supply of brain

Brain – Internal carotid

- Vertebral art.
- Choroid plexus

Skull – Mid.Meningeal art.

(Foramen spinosum)

Br. of 1<sup>st</sup> part Max.art.

(Ext. Carotid art.)

## Venous drainage of brain

Brain – Ext.cerebral veins

- Ineter. cerebral veins
- Terminal veins

- Great cerebral vein

(Union of 2 int.cereb.veins)

- Basal veins

(Drain into Grt.Cereb.vein)

Skull - Diploic veins

- Emissary veins

Ventricles - CSF

Ultimately drain into  
Venous sinuses

Internal Jugular Vein