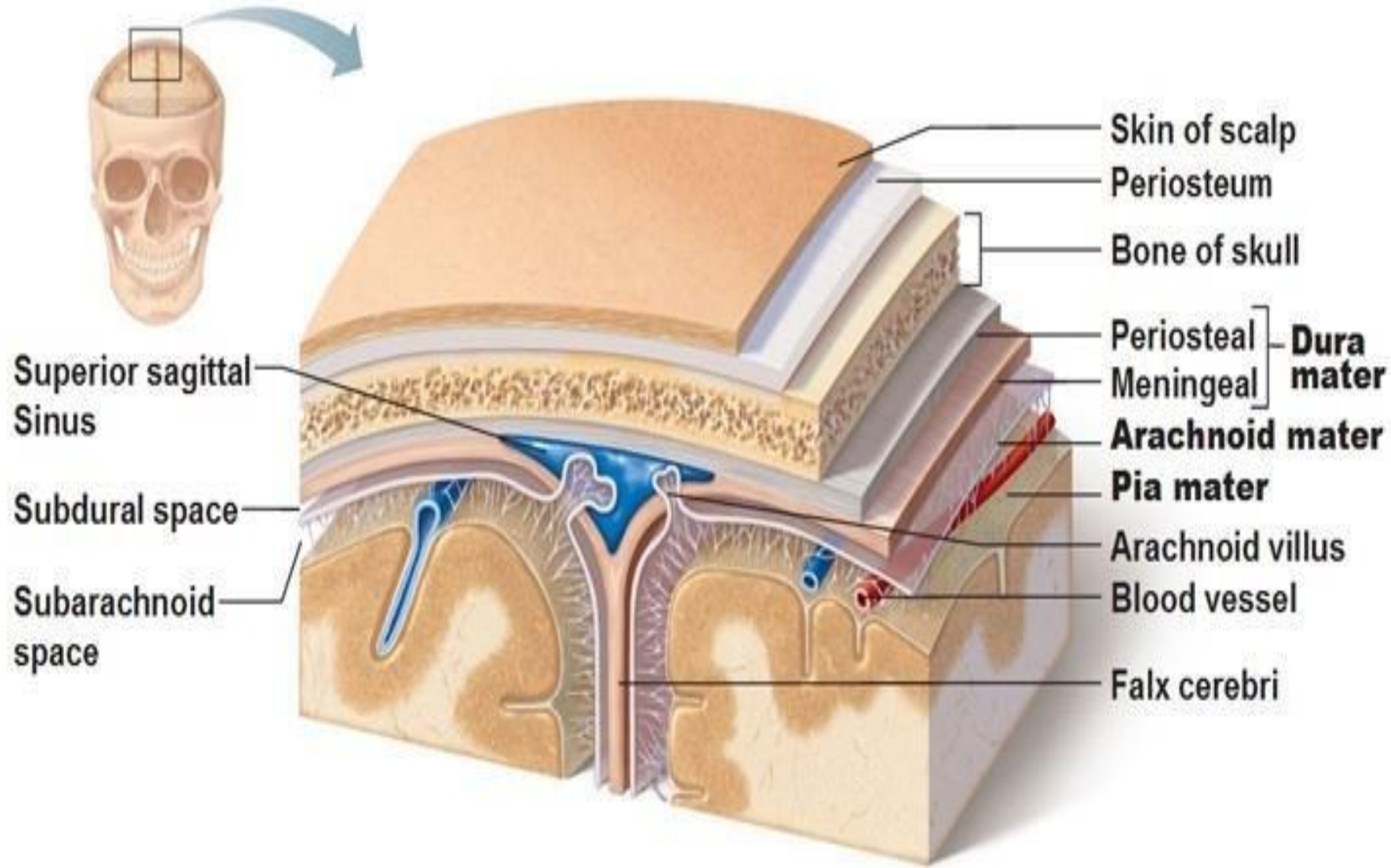
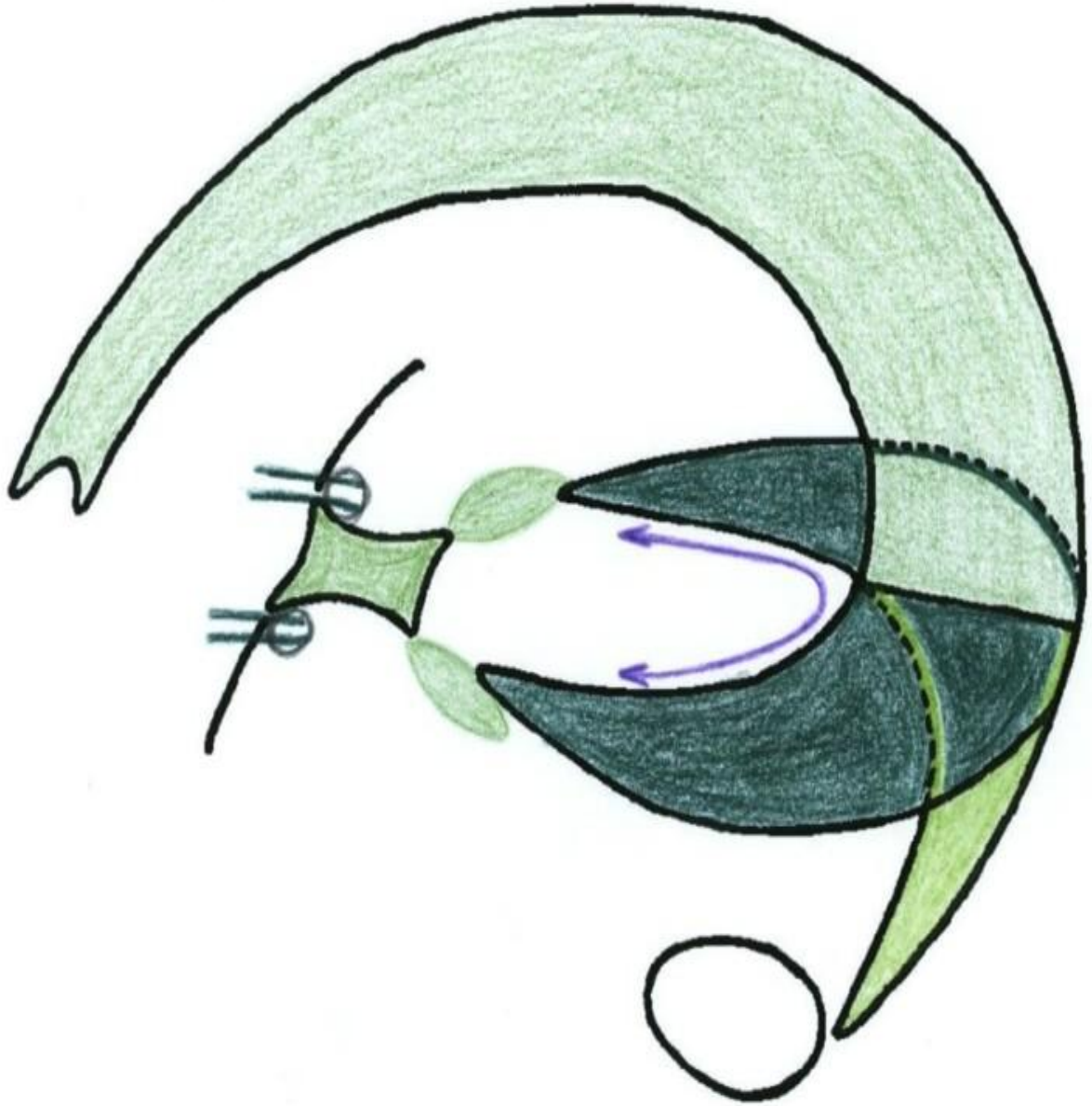

Skin of scalp
Periosteum
Bone of skull
Periosteal
Meningeal
Dura mater
Arachnoid mater
Pia mater
Arachnoid villus
Blood vessel
Falx cerebri
Superior sagittal Sinus
Subdural space
Subarachnoid space

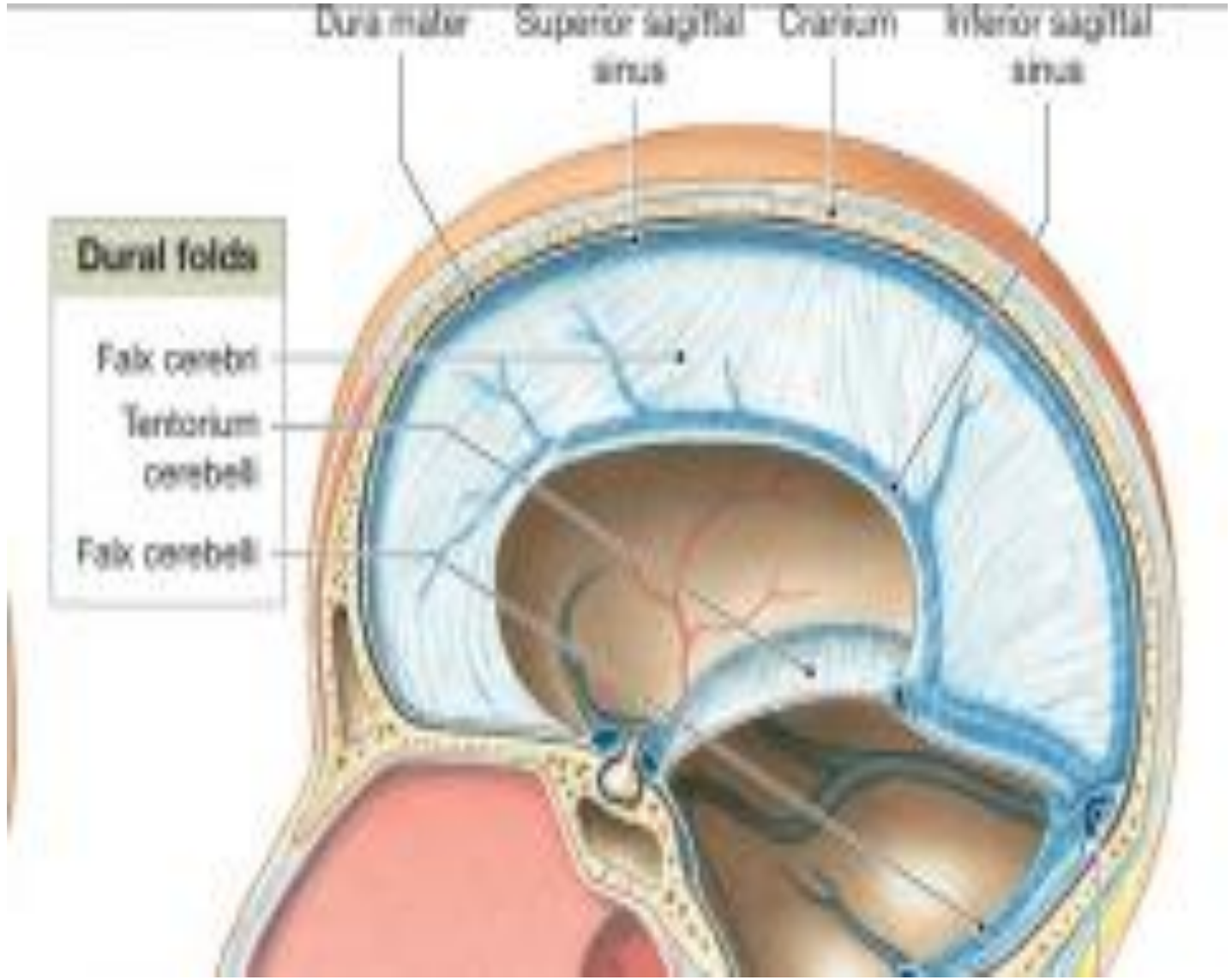


The falx cerebri encloses three dural venous sinuses, *viz.*

- • *Superior sagittal sinus,* along its upper attached border.

- • *Inferior sagittal sinus,* along its lower free border.

- • *Straight sinus,* along its line of attachment with the tentorium cerebelli.


Dura mater
Superior sagittal sinus
Cranium
Inferior sagittal sinus
Dural folds
Falx cerebri
Tentorium cerebelli
Falx cerebelli

Tentorium cerebelli

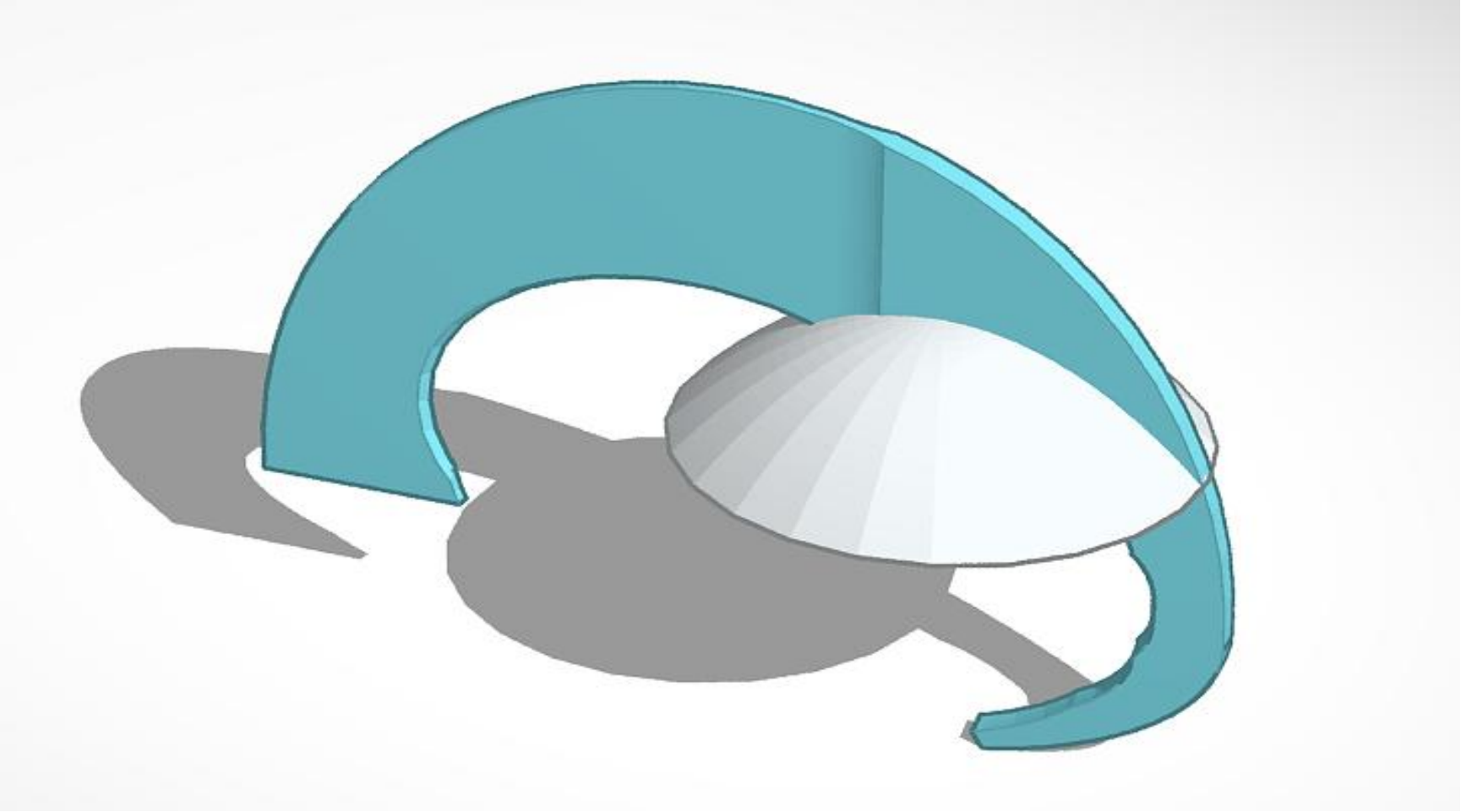
- is tent-like semilunar fold of dura mater which forms the sloping roof of the posterior cranial fossa, between the cerebellum below and the occipital lobes of cerebral hemispheres above.

- It prevents the cerebellum from being compressed by the heavy cerebrum.

-

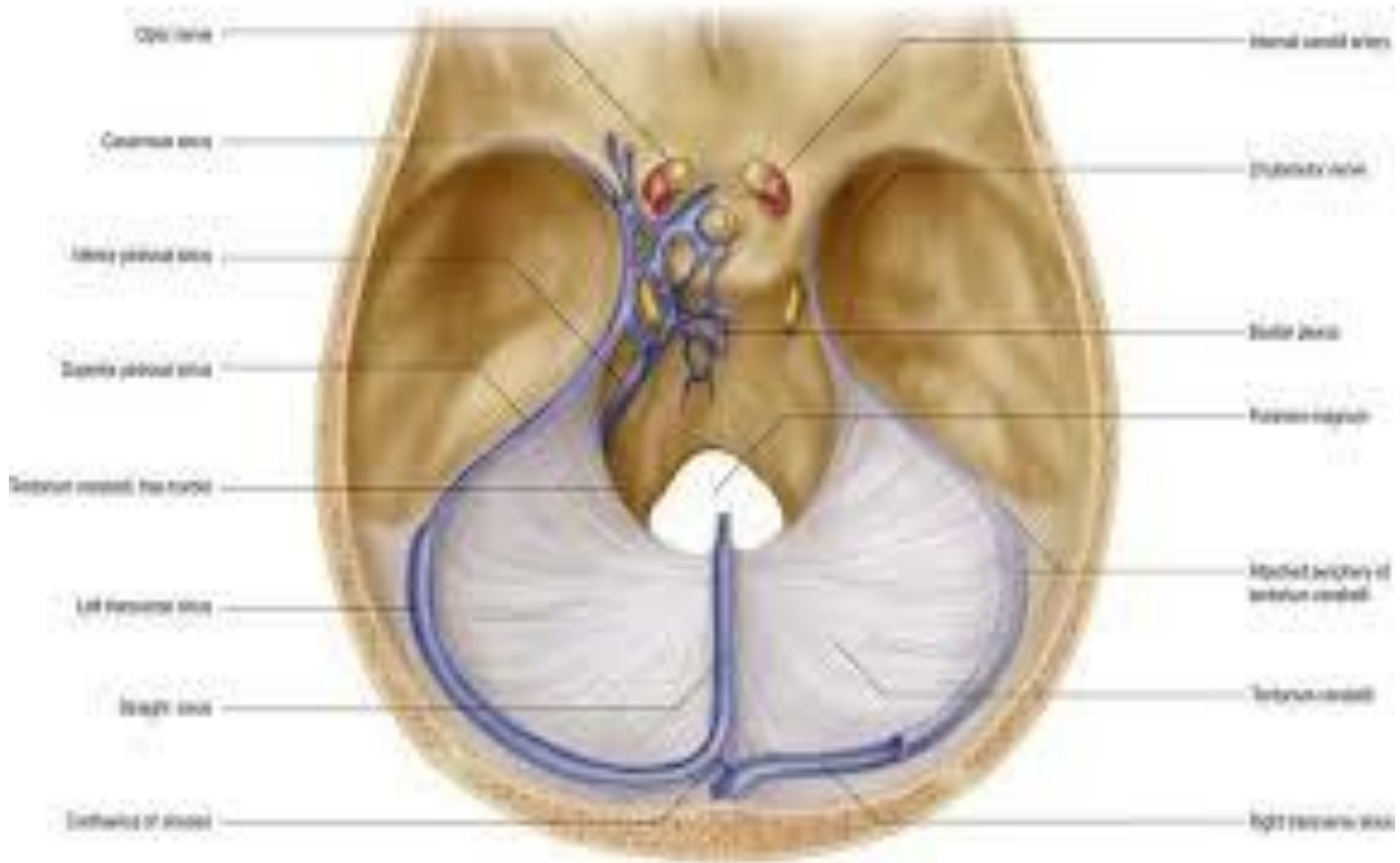
- It has two borders:
- (a) an outer convex attached border, and
- (b) an inner concave free border.
- The inner border bounds an oval space, the tentorial notch or the *door of tentorium* through which passes the midbrain to connect the hindbrain with the forebrain

3D design Tentorium Cerebelli and Fa



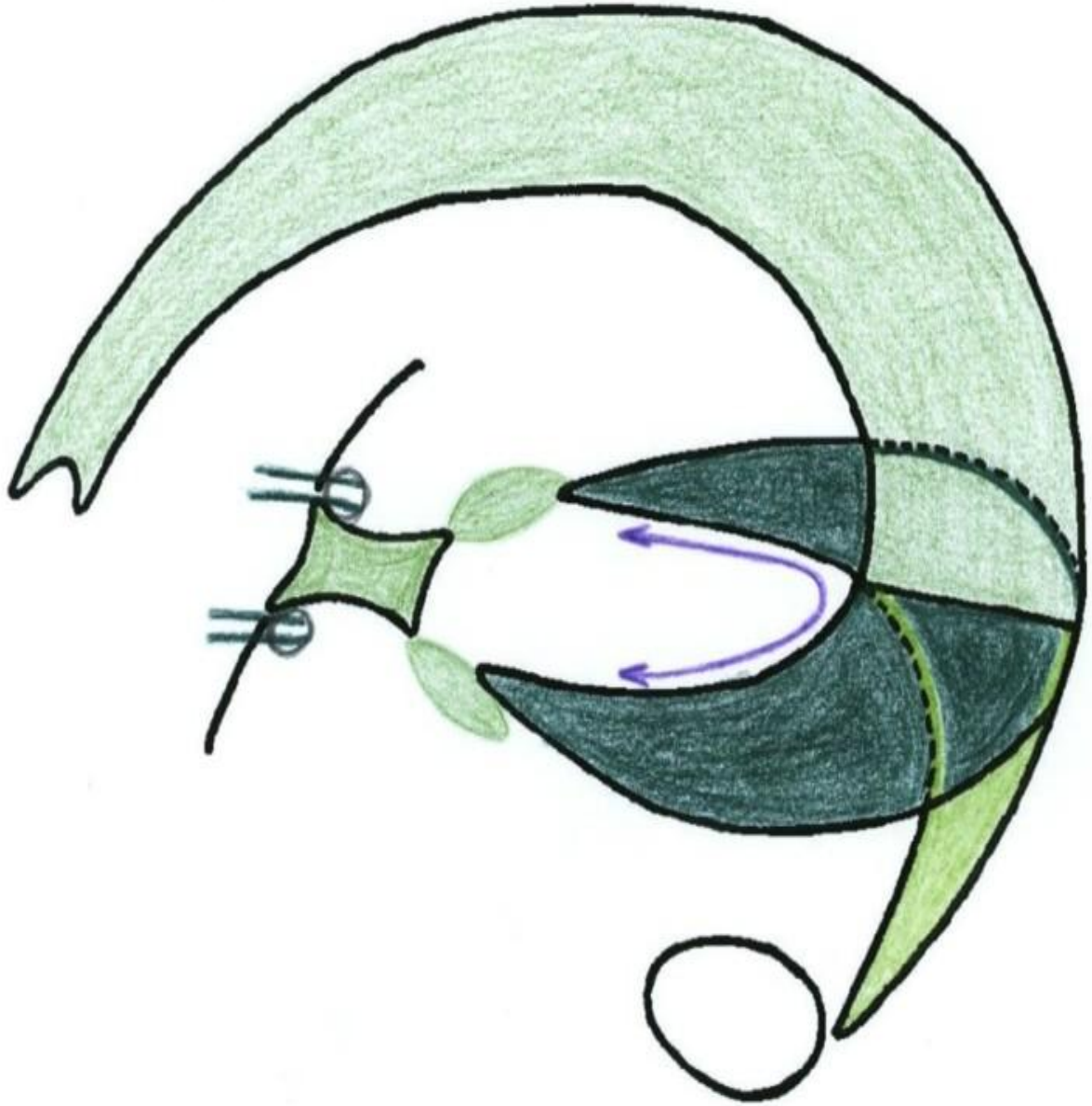
-
- On each side, the anterior half of the outer border is attached anterolaterally to the superior border of the petrous temporal bone and posterior clinoid process,
- and posterior half is attached posterolaterally to the lips of the transverse sulcus.
- The inner free border is ‘U’-shaped and its anterior ends are attached to the anterior clinoid processes.
- .

- Tentorium cerebelli contains four dural venous sinuses, two on either side:
- • Superior petrosal sinus, along the anterior half of its attached border.
- • Transverse sinus, along the posterior half of its attached border



Falx cerebelli

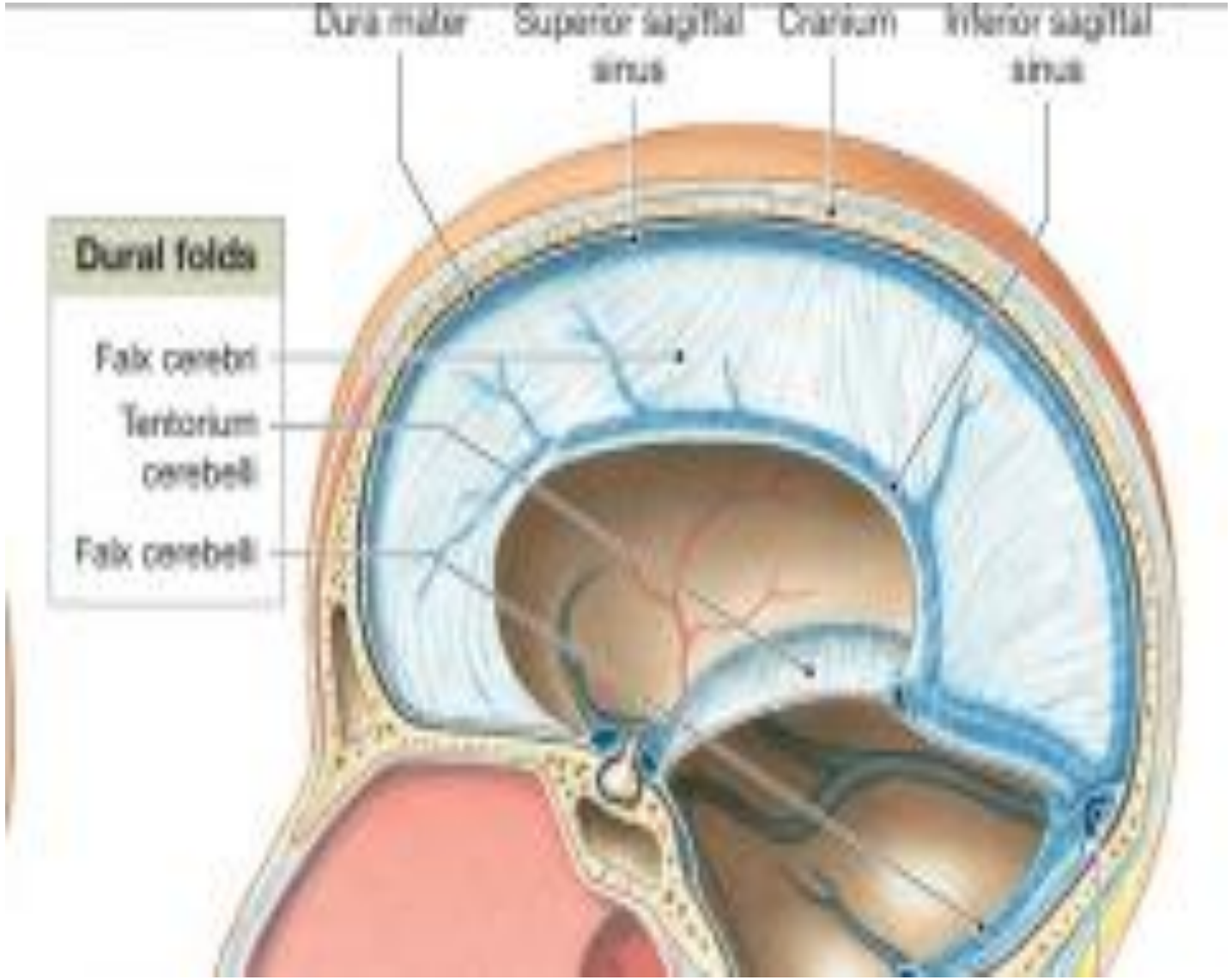
- Falx cerebelli is a small sickle-shaped fold of dura mater which intervenes between the two cerebellar hemispheres posteriorly.
-
- It is attached to the internal occipital crest by its outer border, and encloses the occipital venous sinus.

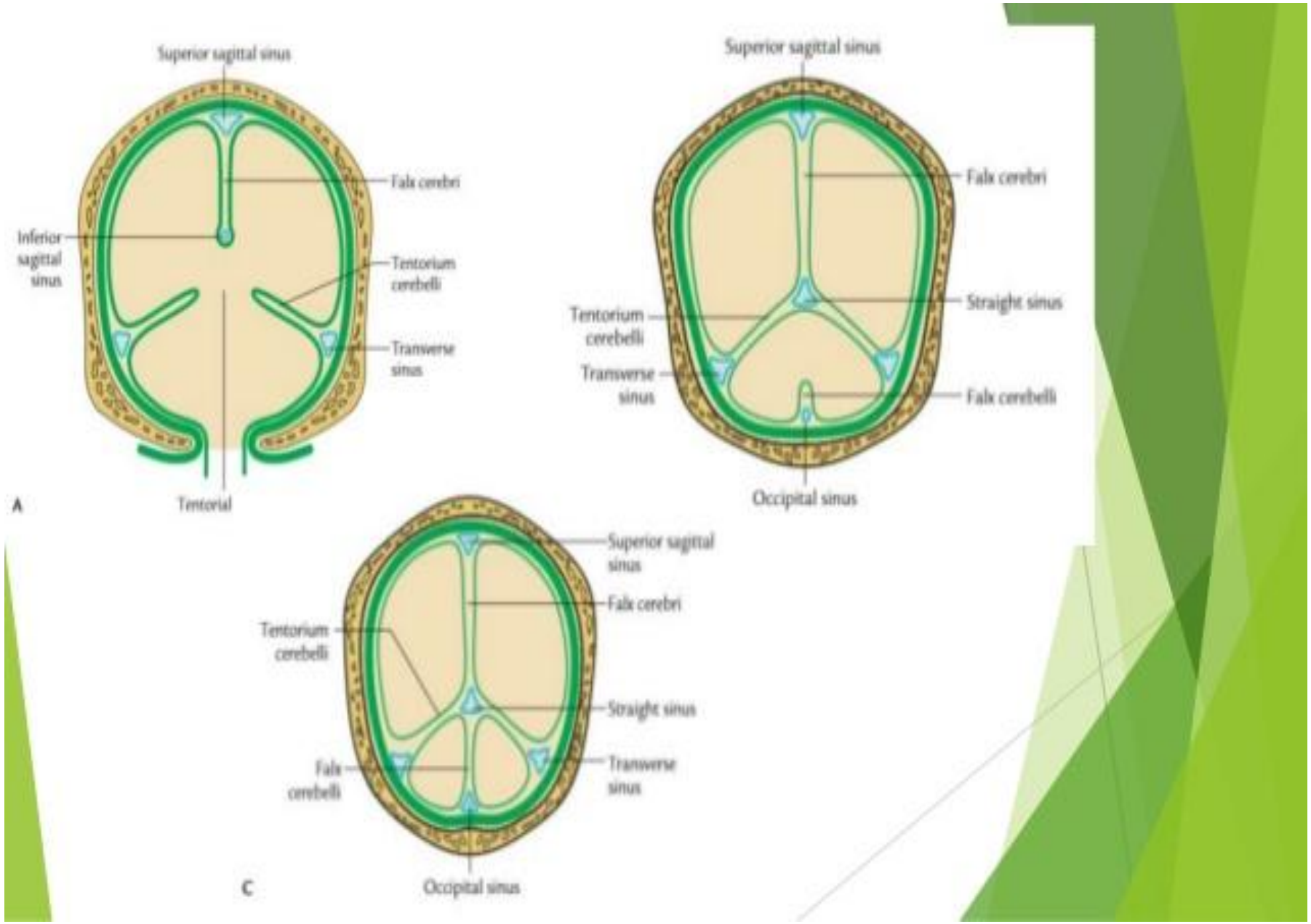


Diaphragma sellae (or tentorium hypophysii)

- Diaphragma sellae is a small circular fold of dura mater which roofs the pituitary fossa/sella turcica.

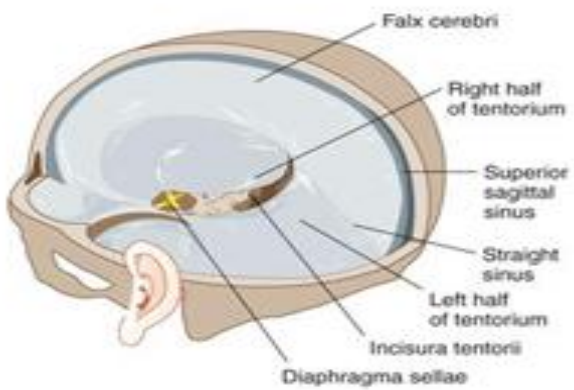
- It has an aperture in its centre to provide passage for the stalk of the pituitary gland.


Dura mater
Superior sagittal sinus
Cranium
Inferior sagittal sinus
Dural folds
Falx cerebri
Tentorium cerebelli
Falx cerebelli


Superior sagittal sinus
Falx cerebri
Inferior sagittal sinus
Tentorium cerebelli
Transverse sinus
Tentorial
A
Superior sagittal sinus
Falx cerebri
Straight sinus
Tentorium cerebelli
Transverse sinus
Falx cerebelli
Occipital sinus
Superior sagittal sinus
Falx cerebri
Tentorium cerebelli
Straight sinus
Falx cerebelli
Transverse sinus
C
Occipital sinus

The Cranial Meninges (*Cont.*)

- Dural Folds
  - Falx cerebri
  - Tentorium cerebelli
  - Falx cerebelli



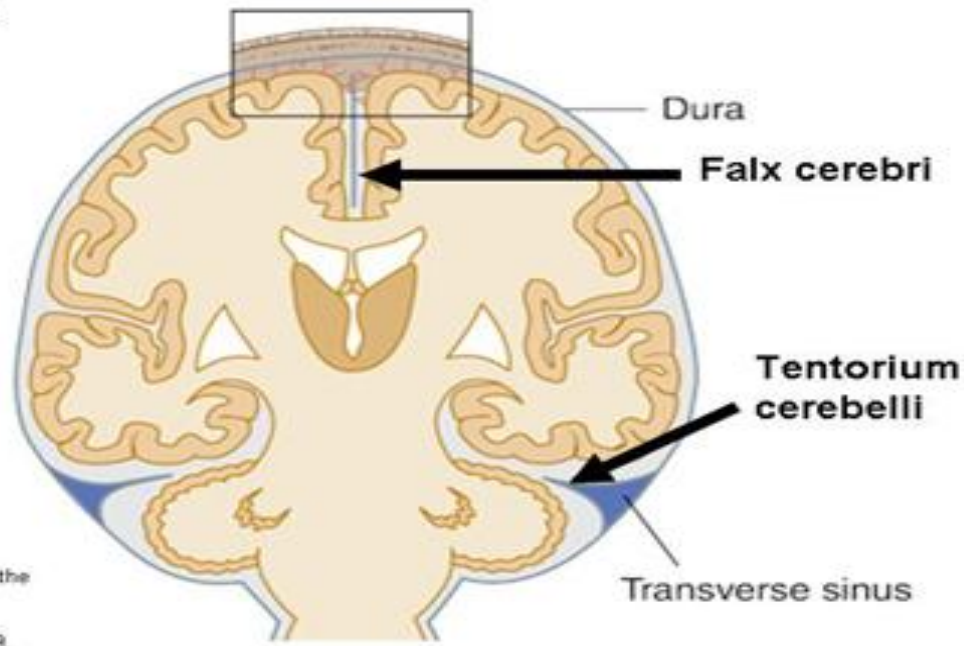


Figure 11-5 & 6. (5) Schematic illustration of a coronal section of the brain. Enlargement of the top. (6) Schematic illustration of dural folds. In: Waxman SG. *Clinical Neuroanatomy*, 26th ed. http://www.accessphysiotherapy.com. Accessed October 20, 2009.

- The dura is supplied by numerous branches of the internal carotid, ascending pharyngeal, maxillary, occipital and vertebral arteries.

N.B. Middle meningeal artery is the largest of the meningeal arteries and from clinical point of view is the most important for it is often damaged in head injuries

middle meningeal artery

- **The *middle meningeal artery*, a branch of maxillary artery**

enters the cranial cavity through the foramen spinosum to lie between the endosteal and meningeal layers of dura mater.

- **Its anterior and posterior branches, along with accompanying meningeal veins (between the arteries and bone) stand out prominently as if in relief on the external surface of the dura mater to groove and supply bones of the cranial vault.**

- **The anterior (frontal) branch crosses the *pterion*, on its inner aspect and the posterior (parietal) branch ascends backwards towards the lambda. A fracture of thin squamous temporal bone may cause a *middle meningeal haemorrhage* from the artery or vein, producing an extradural haematoma.**

Nerve supply of dura mater

- The nerve supply of dura mater is derived mainly from three sources:
- 1. Three divisions of trigeminal nerve
- 2. First three cervical spinal nerves
- 3. Cervical sympathetic trunk.

- The **supratentorial dura** is supplied by the meningeal branches from the three divisions of the trigeminal nerve:
- 1. In the anterior cranial fossa by meningeal branches of the anterior and posterior ethmoidal nerves.
- 2. In the middle cranial fossa by meningeal branches of maxillary and mandibular nerves.
- • The **infratentorial dura** is supplied by ascending meningeal branches of upper three cervical nerves.

- The stimulation of sensory nerve endings in the dura mater due to stretching causes pain and is the basis of certain forms of headache. Pain arising from supratentorial dura is referred to the forehead while pain arising from infratentorial dura is referred to the back of the neck and occiput. The role of the autonomic supply of the cranial dura mater is uncertain.
- **N.B**. The brain itself, the arachnoid mater, and the pia mater do not have sensory nerve endings. These are restricted only to the dura mater and cerebral vessels.

Characteristic features

- • Have no valves, hence the blood can flow in either direction in the sinuses,
- • Are devoid of smooth muscle fibres in their walls,
- • **Drain finally into the internal jugular veins**,
- • Have cerebral, diploic and some meningeal veins as their tributaries,
- • Communicate via valveless emissary veins with the extracranial veins through skull foramina.

Base of Skull, Internal Aspect

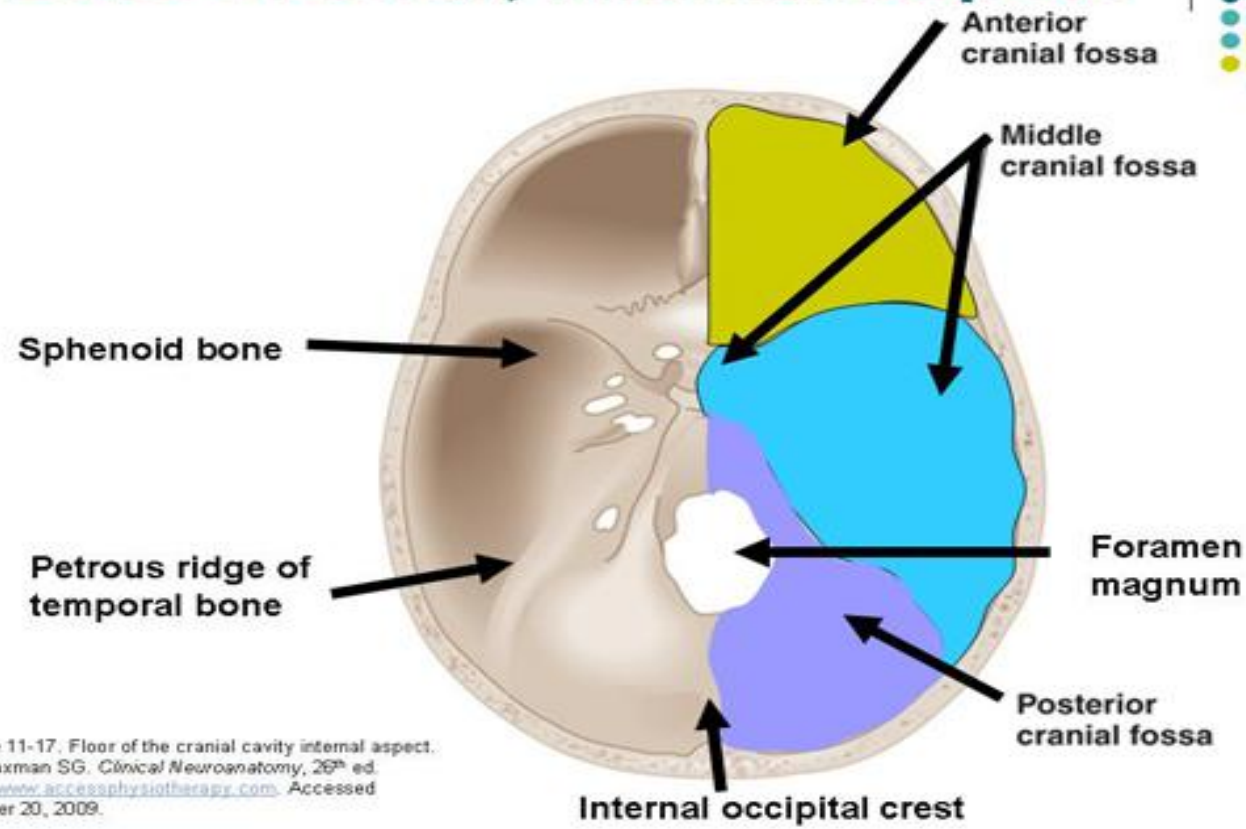
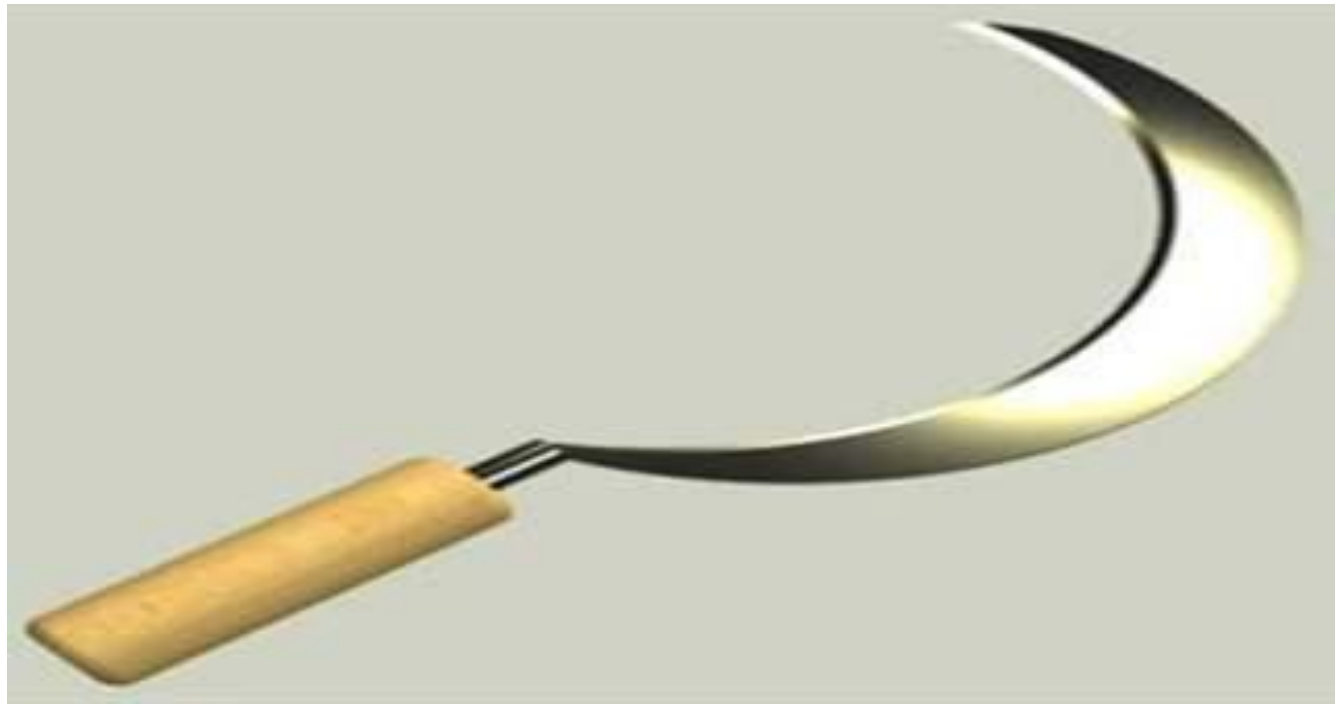


Figure 11-17. Floor of the cranial cavity internal aspect. In: Waxman SG. *Clinical Neuroanatomy*, 26th ed. http://www.accessphysiotherapy.com. Accessed October 20, 2009.

Shapes of dural folds and enclosed venous sinuses

Fold	Shape	Venous sinuses enclosed
Falx cerebri	Sickle-shaped	Superior sagittal, inferior sagittal and straight sinuses
Tentorium cerebelli	Tent-shaped (semilunar)	Transverse and superior petrosal sinuses
Falx cerebelli	Sickle-shaped	Occipital sinus
Diaphragma sellae	Horizontal fold	Anterior and posterior intercavernous sinuses



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