

ANATOMY OF dural venous sinuses

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DURAL VENOUS SINUSES

D. V. S.

DURAL VENOUS SINUSES

Definition: venous channels located between the inner & outer layers of dura matter.

[1]=SINGLE

- 1.S.S.S. (superior sagittal sinus)
- 2.I.S.S. (inferior sagittal sinus)
- 3.Straight sinus.
- 4.Occipital sinus
- 5.Basilar plexus of veins
- 6.Inter-cavernous sinuses:-
 - 1-Anterior.
 - 2-Middle.
 - 3-Posterior.

[2]=PAIRED

- 1.S.PA.S. (spheno-parietal sinus)
- 2.C.S. (cavernous sinus)
- 3.S.P.S. (superior petrosal sinus)
- 4.I.P.S. (inferior petrosal sinus)
- 5.T.S. (transverse sinus)
- 6.S.S. (sigmoid sinus)

1 A 1

single

D.V.S.



SUPERIOR SAGITTAL SINUS

S. S. S.

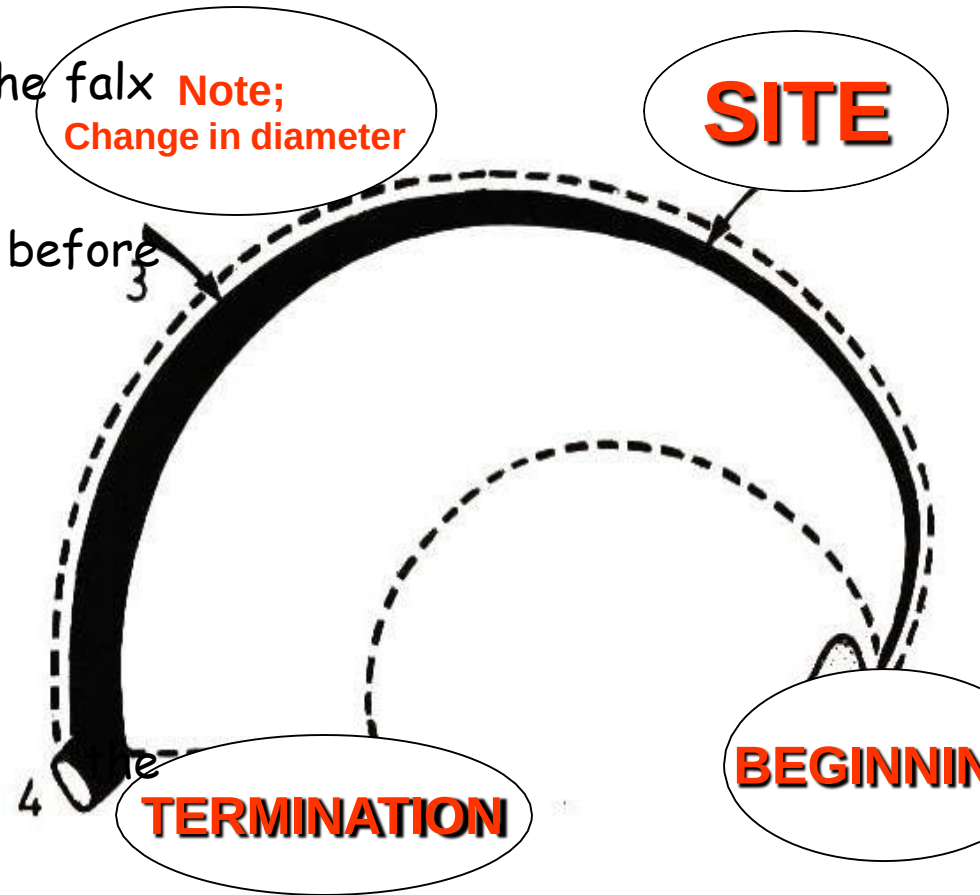
Site:

- It lies in the upper convex border of the falx cerebri.
- Its diameter increases from before backwards;
- it is about 1 cm at its termination.

Beginning: Begins anteriorly at the foramen caecum (next slide).

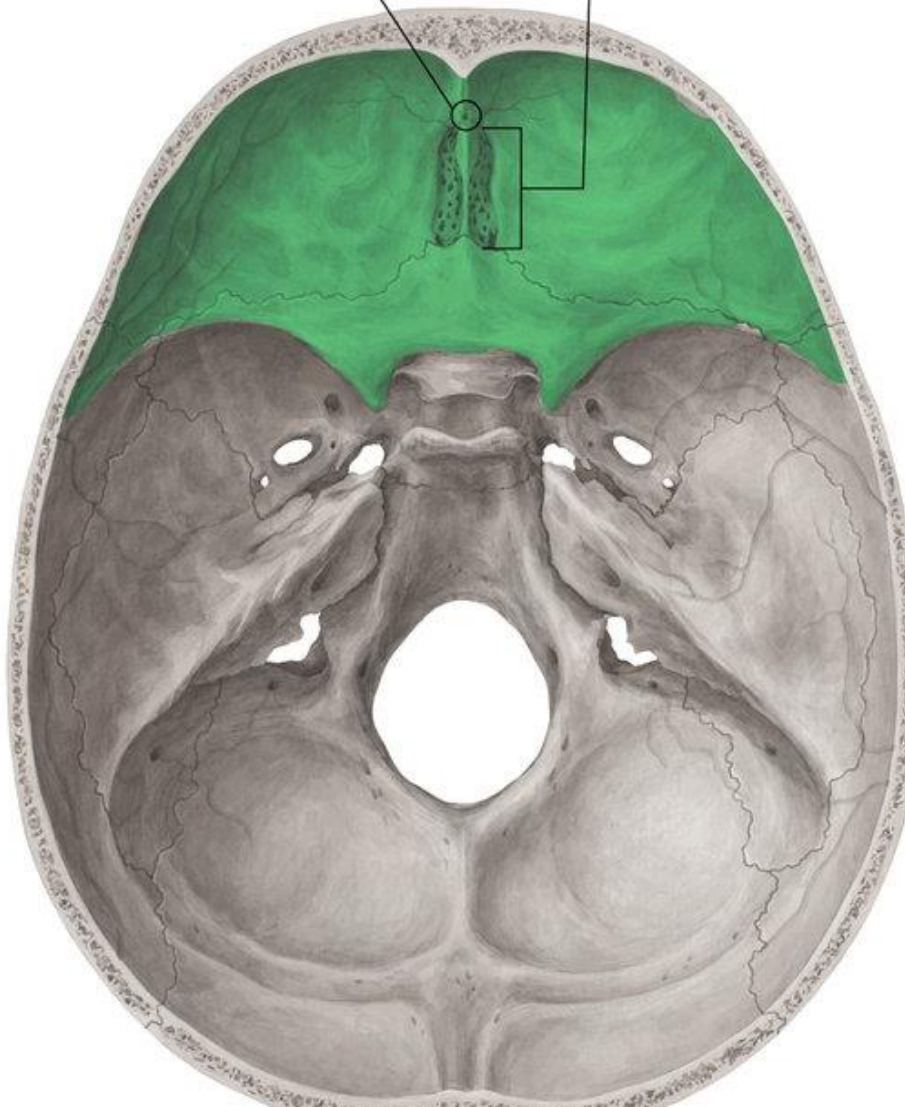
Termination: usually continues as the right transverse sinus (most common) or unites with straight sinus to form a venous confluent (least common).

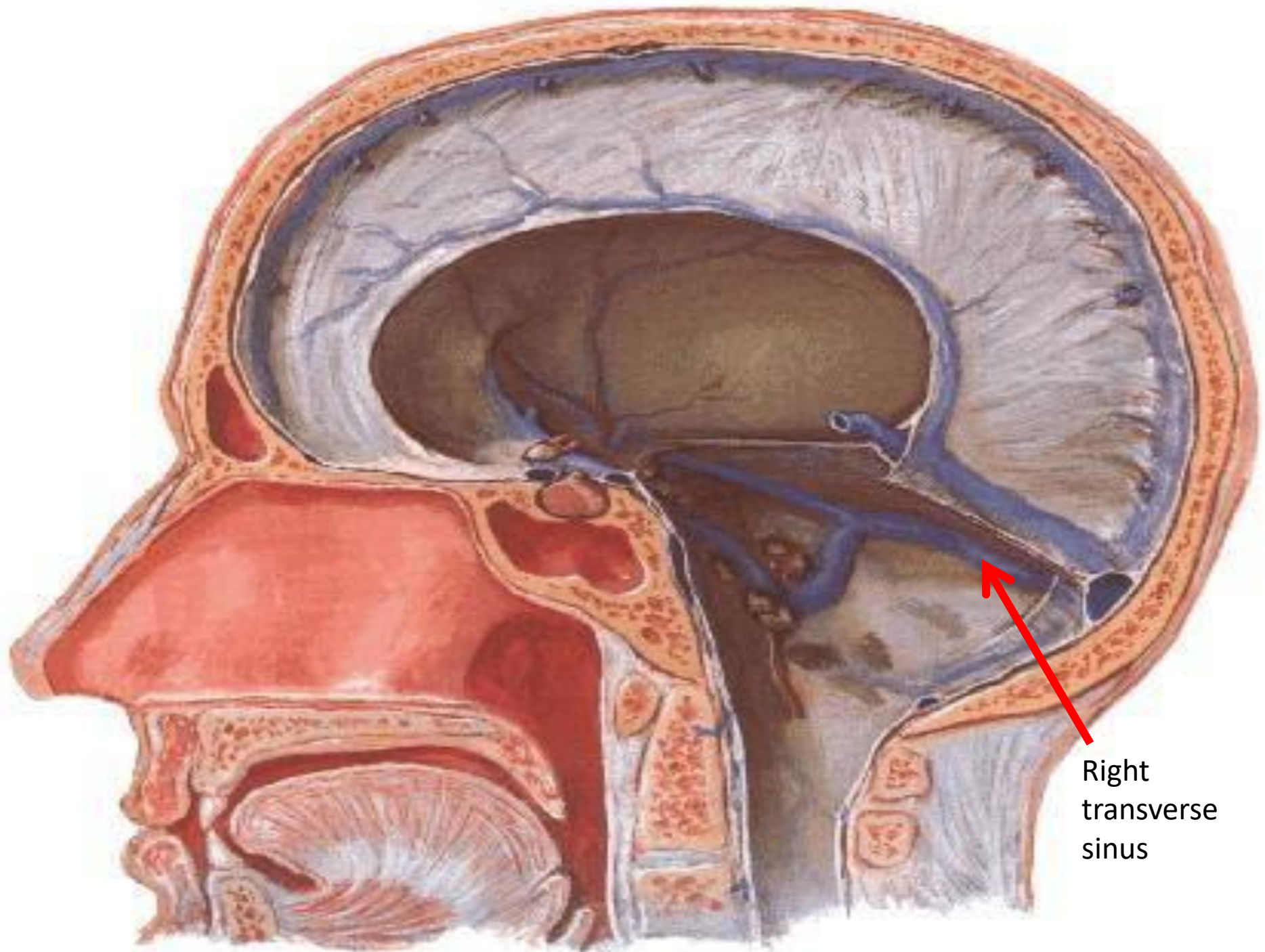
venous confluent : it typically refers to the point where multiple veins come together to form a larger vein or a venous structure.



Foramen cecum

Foramina of cribriform plate





Right
transverse
sinus

TRIBUTARIES

1 Lacunae lateralis:-

- *usually three.
- *dilated venous channels.

2 Arachnoid villi & granulations:- (A.G.)

- *to filter C.S.F. (Cerebrospinal Fluid) into venous stream.

3 Superior cerebral veins:-

- *Passes forward opposite the direction of blood stream (next slide).

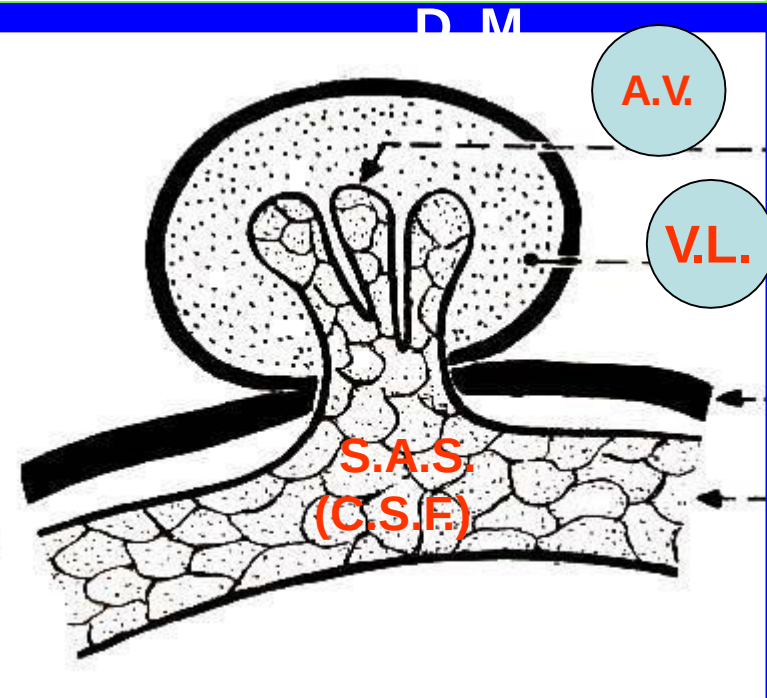
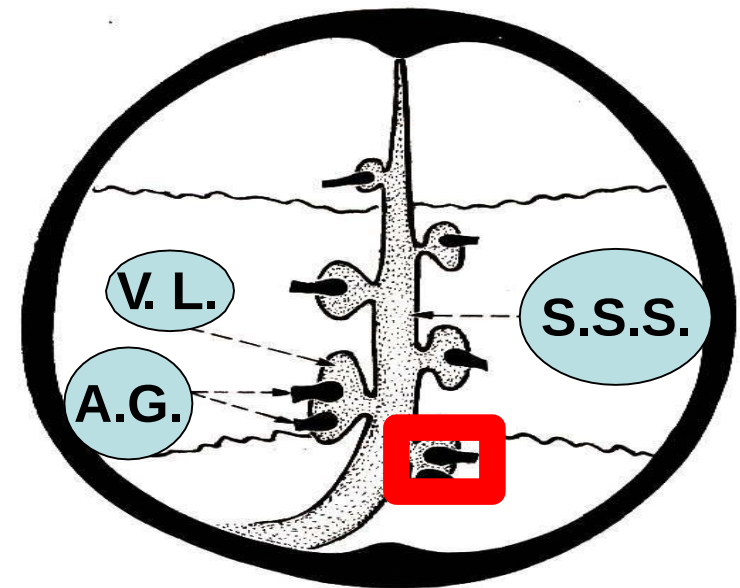
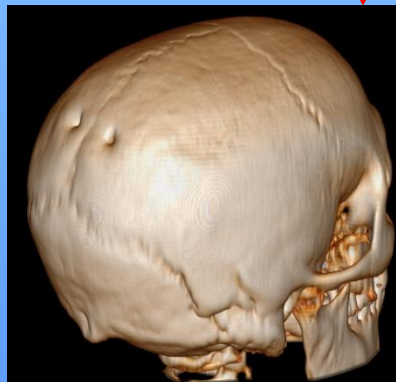
4 Emissary vein:-

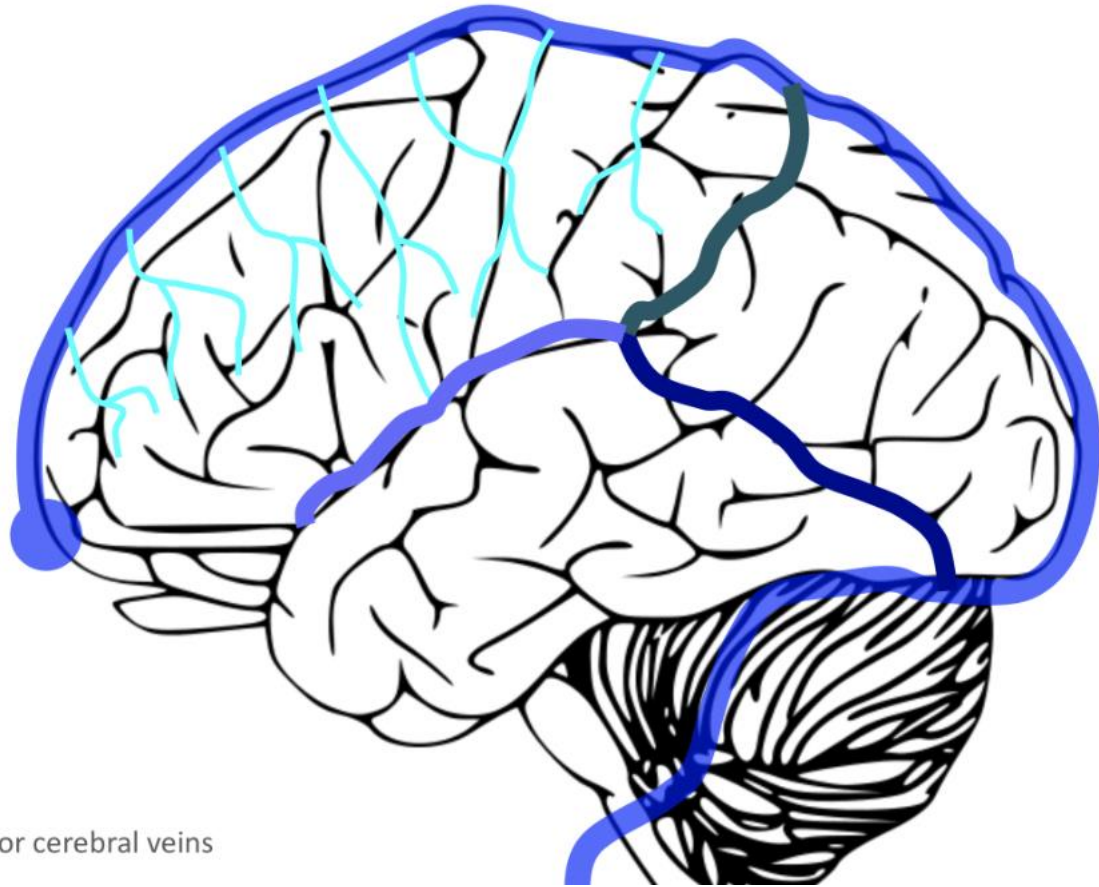
- *Passing through parietal foramen connecting veins of SCALP.

5 Emissary vein:-

- *Passing through foramen caecum connecting veins of nose.

6 Diploic vein:-





Superior cerebral veins

2*

**INFERIOR
SAGITTAL
SINUS**



Site

- *In posterior 2/3
- *of lower free margin of falx cerebri.

Beginning

Termination

- *Joins great cerebral vein of Galen
- * to form straight sinus.
- *at anterior free border of tentorium cerebelli.

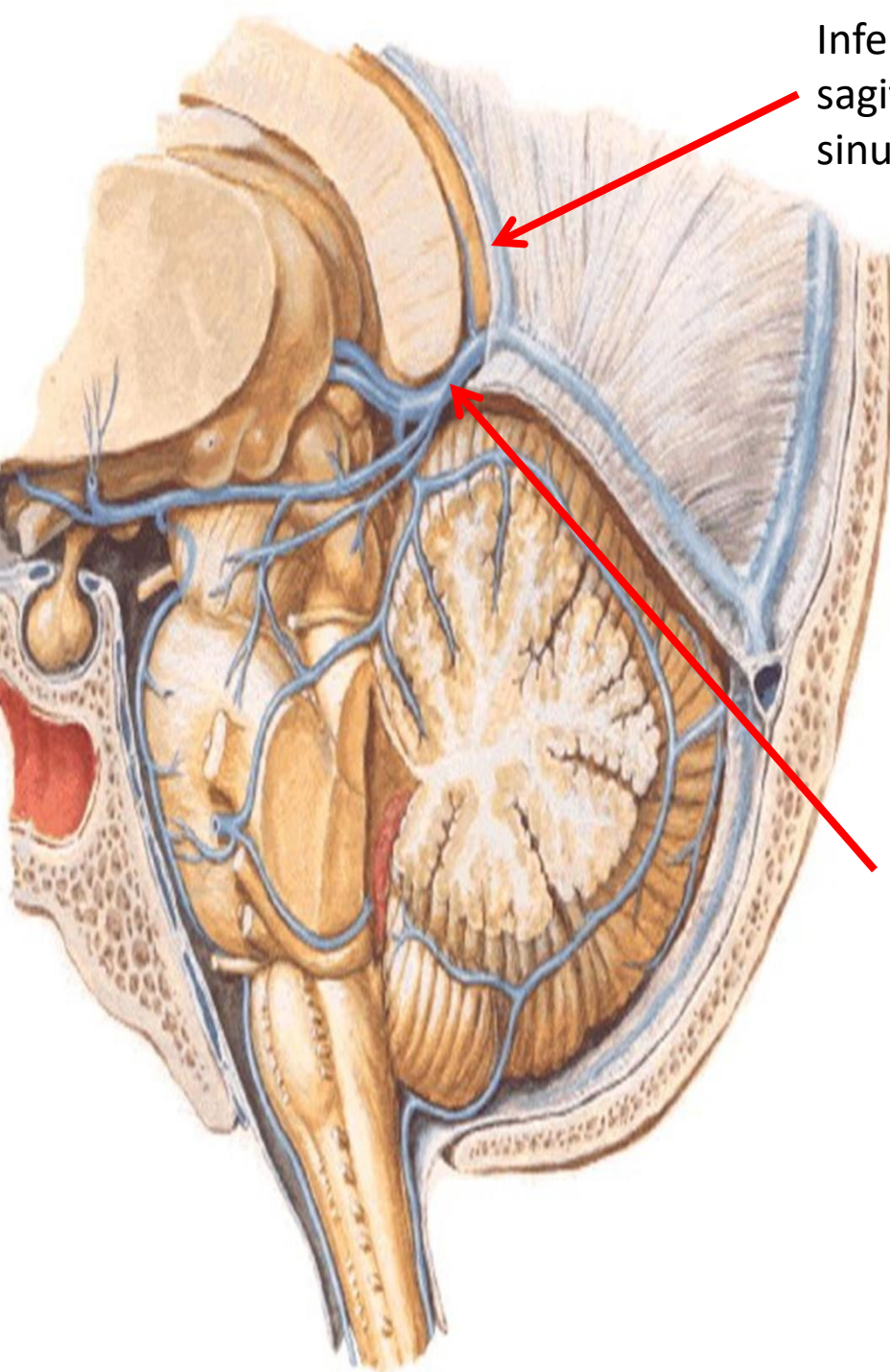
Tributaries

1-Cerebral veins:-

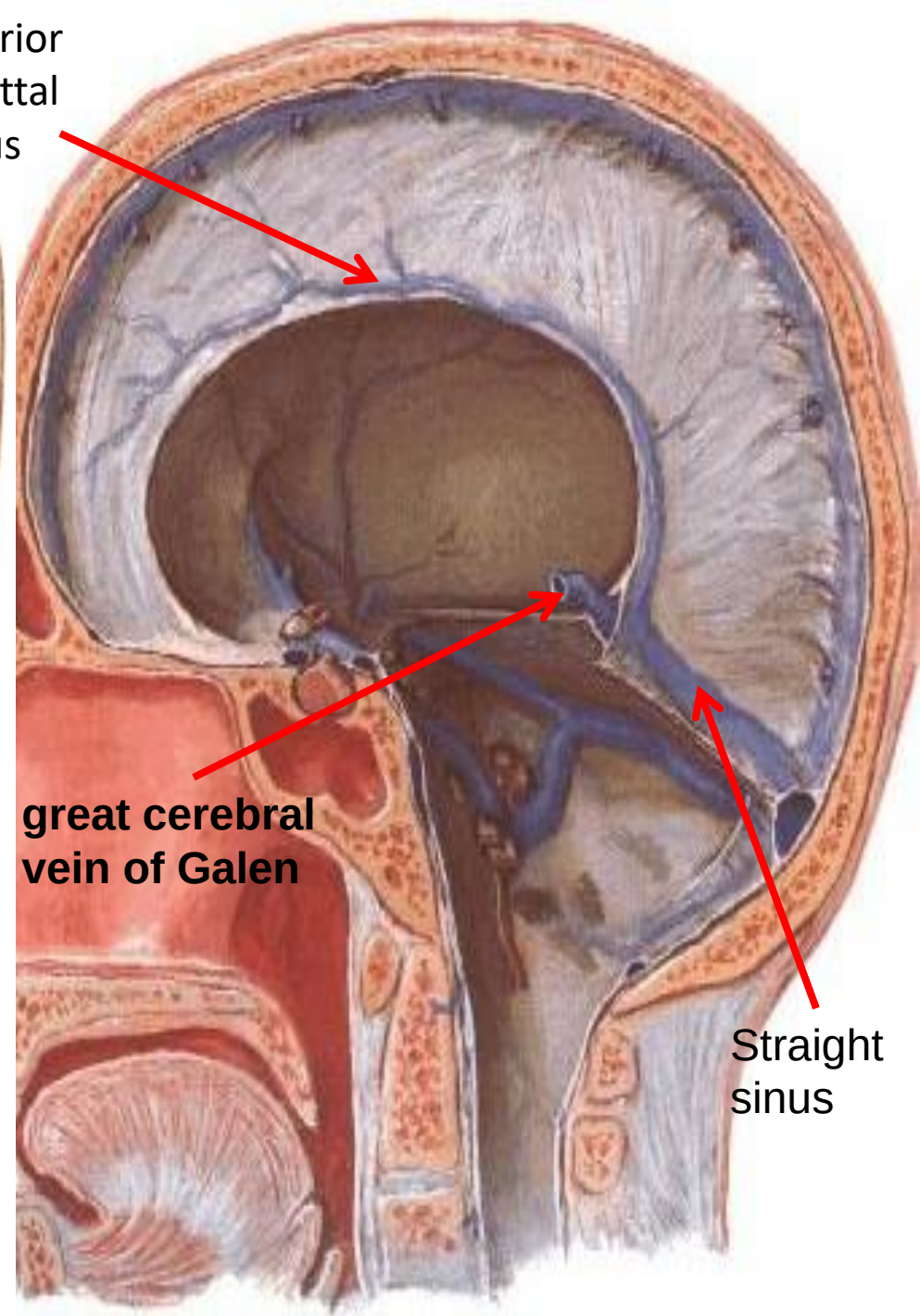
- *from medial surface of cerebral hemi-sphere.

2-Veins from falx cerebri





Inferior
sagittal
sinus

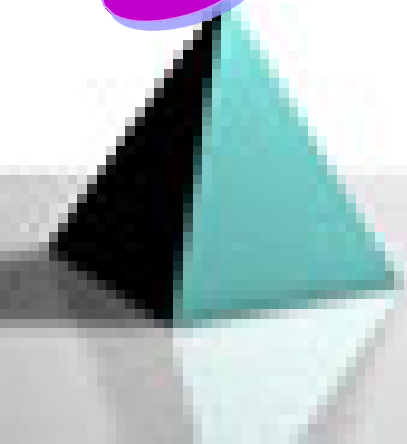


great cerebral
vein of Galen

Straight
sinus



STRAIGHT
SINUS



Site

along line of junction of base of falx cerebri with tentorium cerebelli.

Beginning

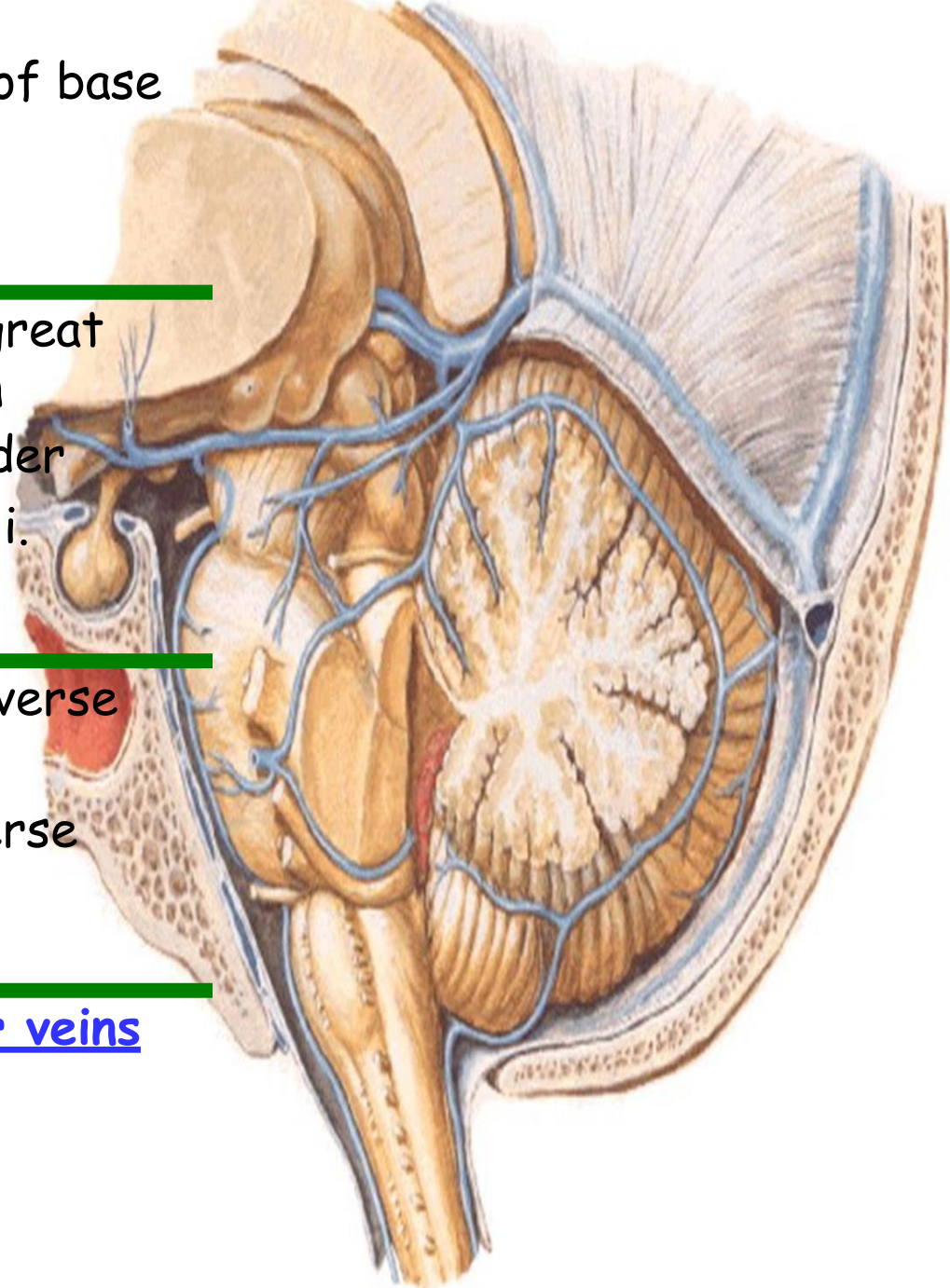
- *Joining of I.S.S. & great cerebral vein of Galen
- *at anterior free border of tentorium cerebelli.

Termination

- * Mainly:- Left Transverse Sinus.
- * May:- Right Transverse Sinus.
- * Venous confluent.

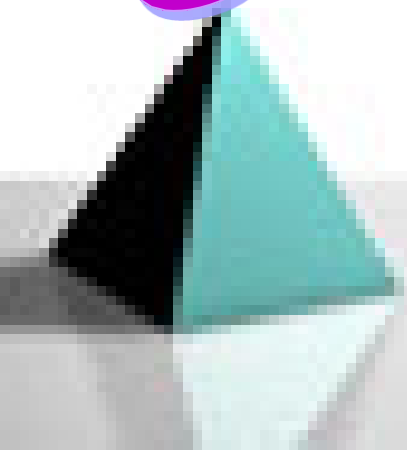
Tributaries

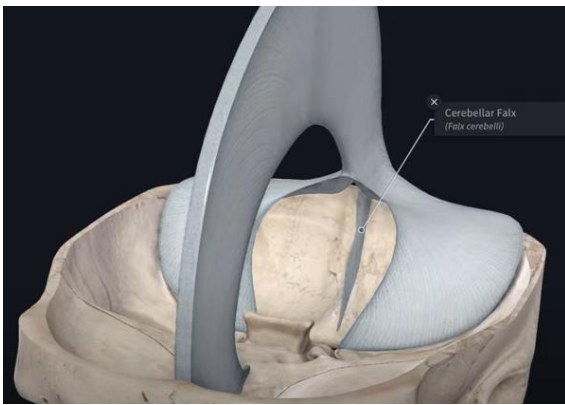
Superior cerebellar veins





OCCIPITAL
SINUS





Site

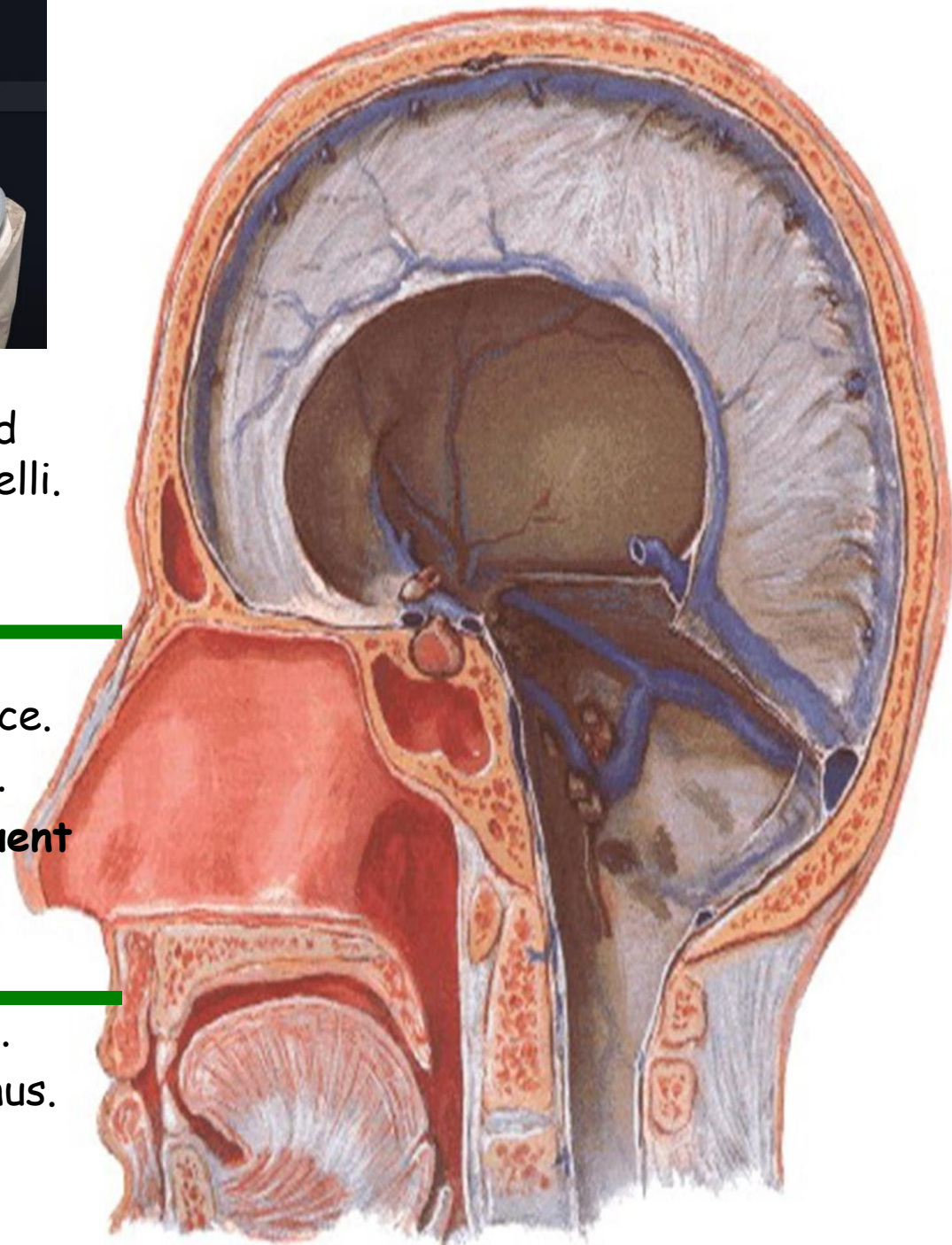
In posterior attached border of falx cerebelli.

Beginning

- *opposite internal occipital protuberance.
- *Transverse sinuses.
- *form **venous confluent**

Termination

- *At foramen magnum.
- *to end in sigmoid sinus.



5* BASILAR PLEXUS SINUSES

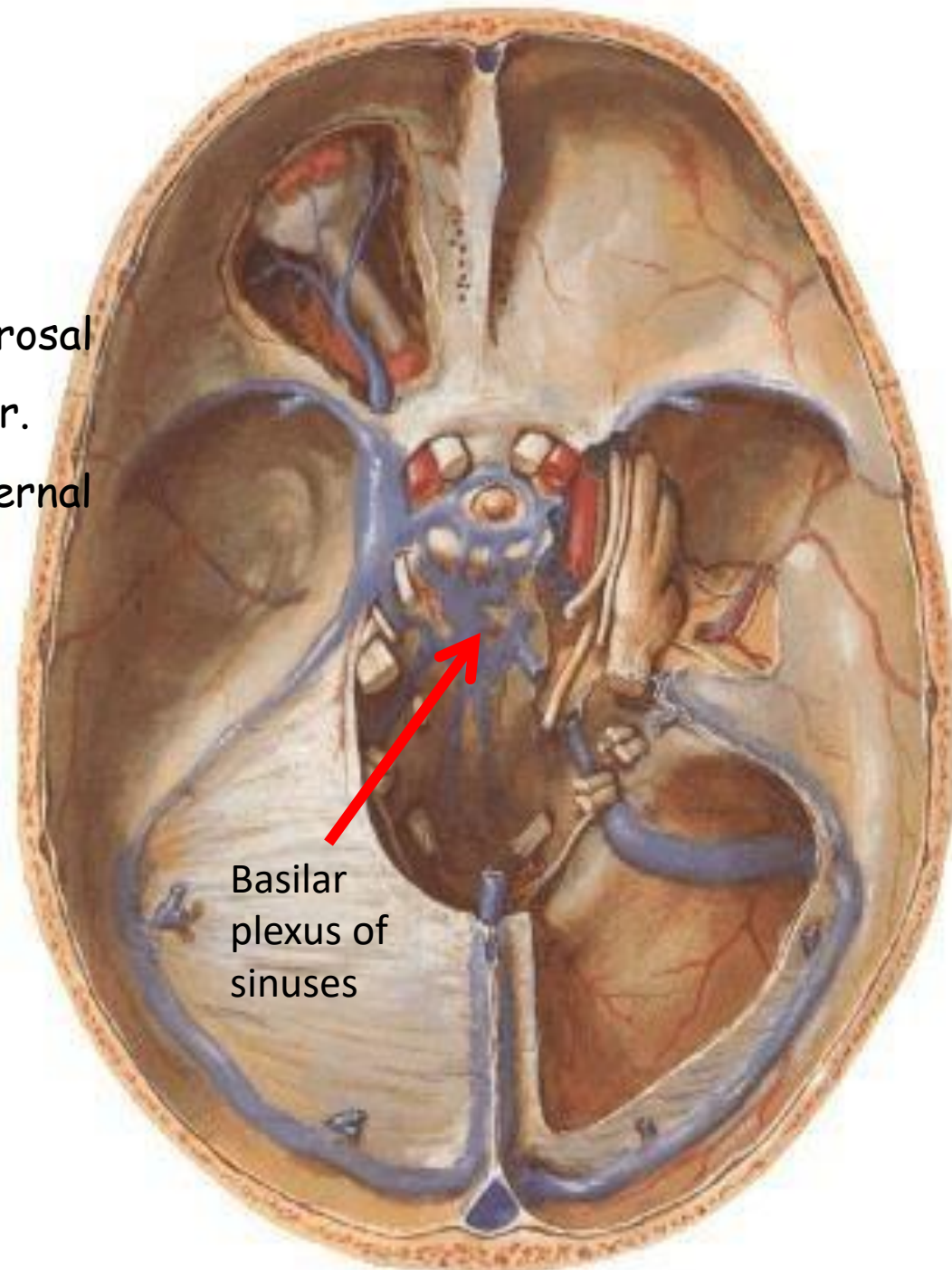
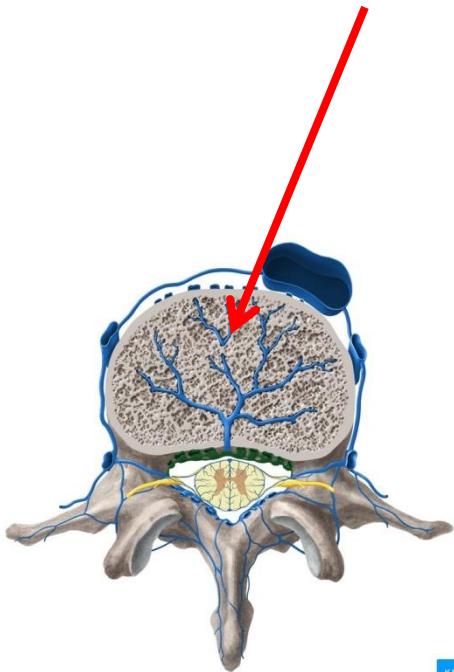


Site:

- Over the clivus of the skull.

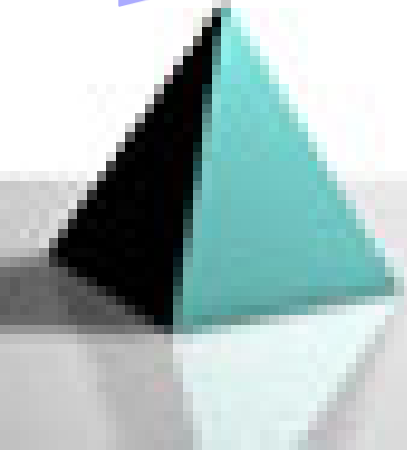
Connection:

- Connect the inferior petrosal sinuses on both sides together.
- Communicates with the internal vertebral venous plexus.





INTERCAVERNOUS SINUSES



- **Site:**

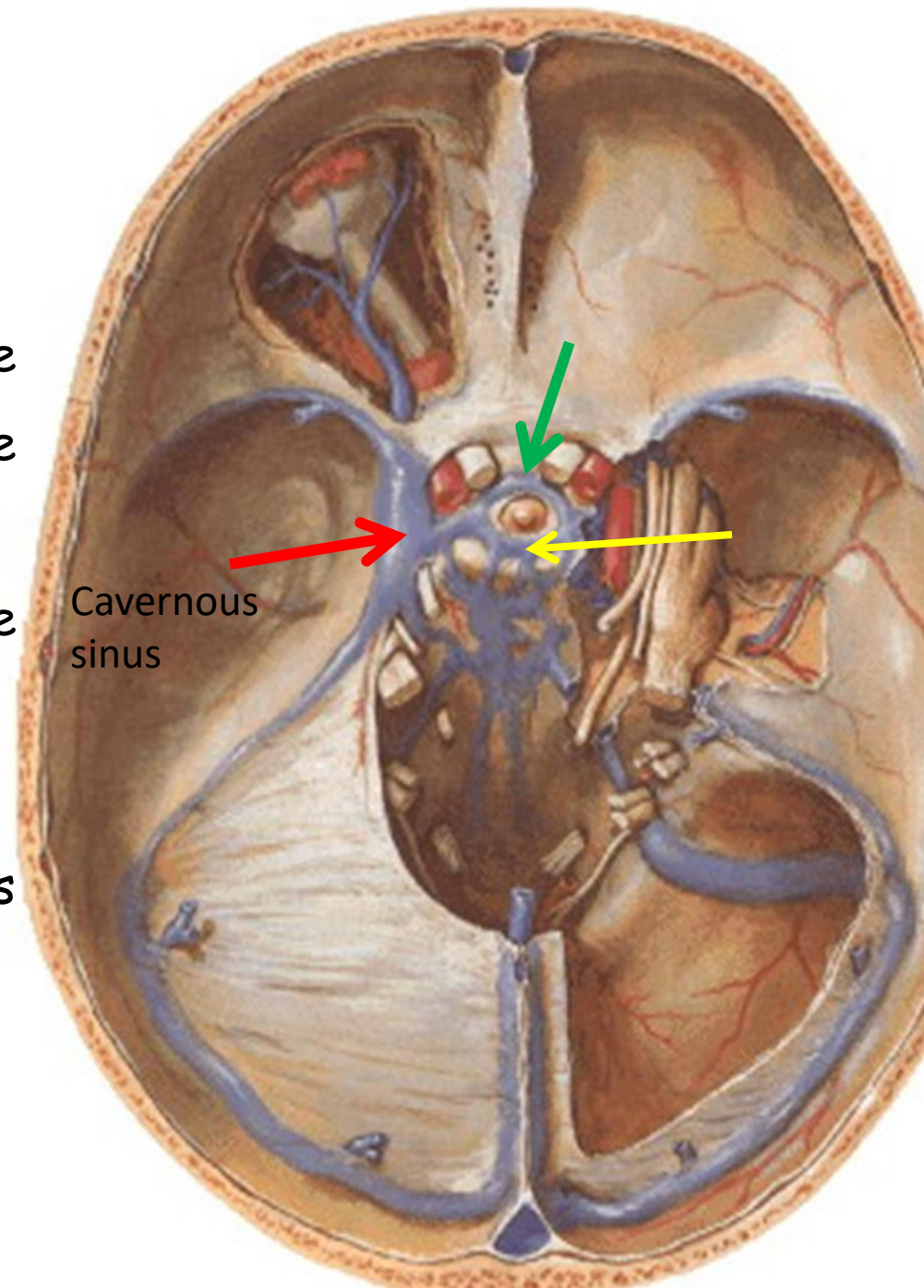
- **The anterior:** in the anterior margin of the diaphragma sellae.

- **The posterior:** in the posterior margin of the diaphragma sellae.

- **The middle:** below the hypophysis cerebri.

- **Connection:**

- Connect the cavernous sinuses on both sides together.



I B I

paired

D. V. S.



CAVERNOUS SINUS



Site

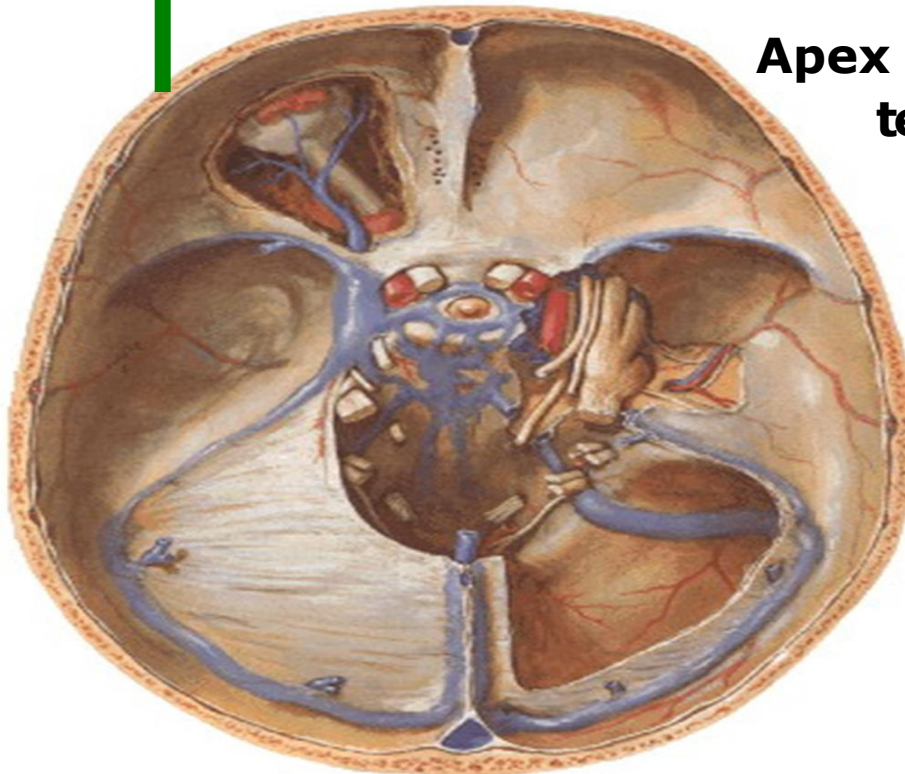
=One on each side of sella turcica.

Beginning

- Anteriorly:-
superior orbital fissure.

Termination

- Posteriorly:-
apex of petrous bone.
-To be:-
(1)- Superior petrosal sinus.
(2)- Inferior petrosal sinus.



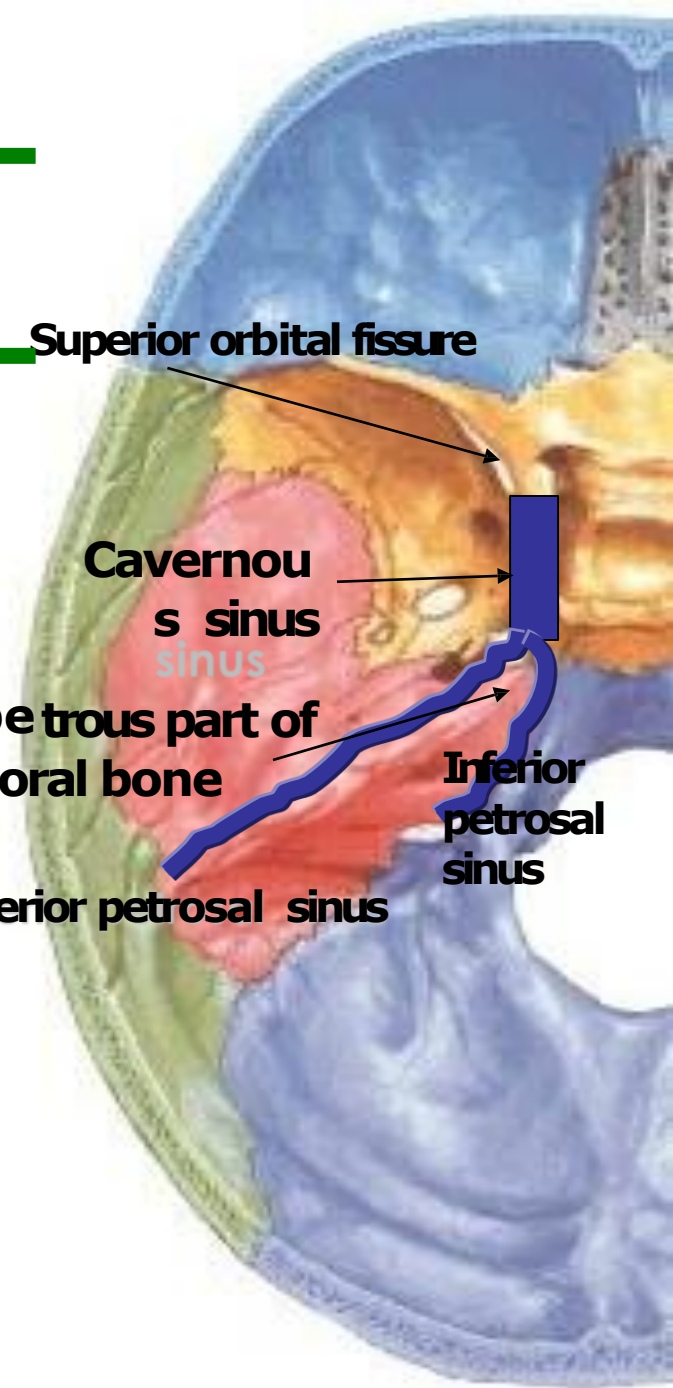
**Apex of petrous part of
temporal bone**

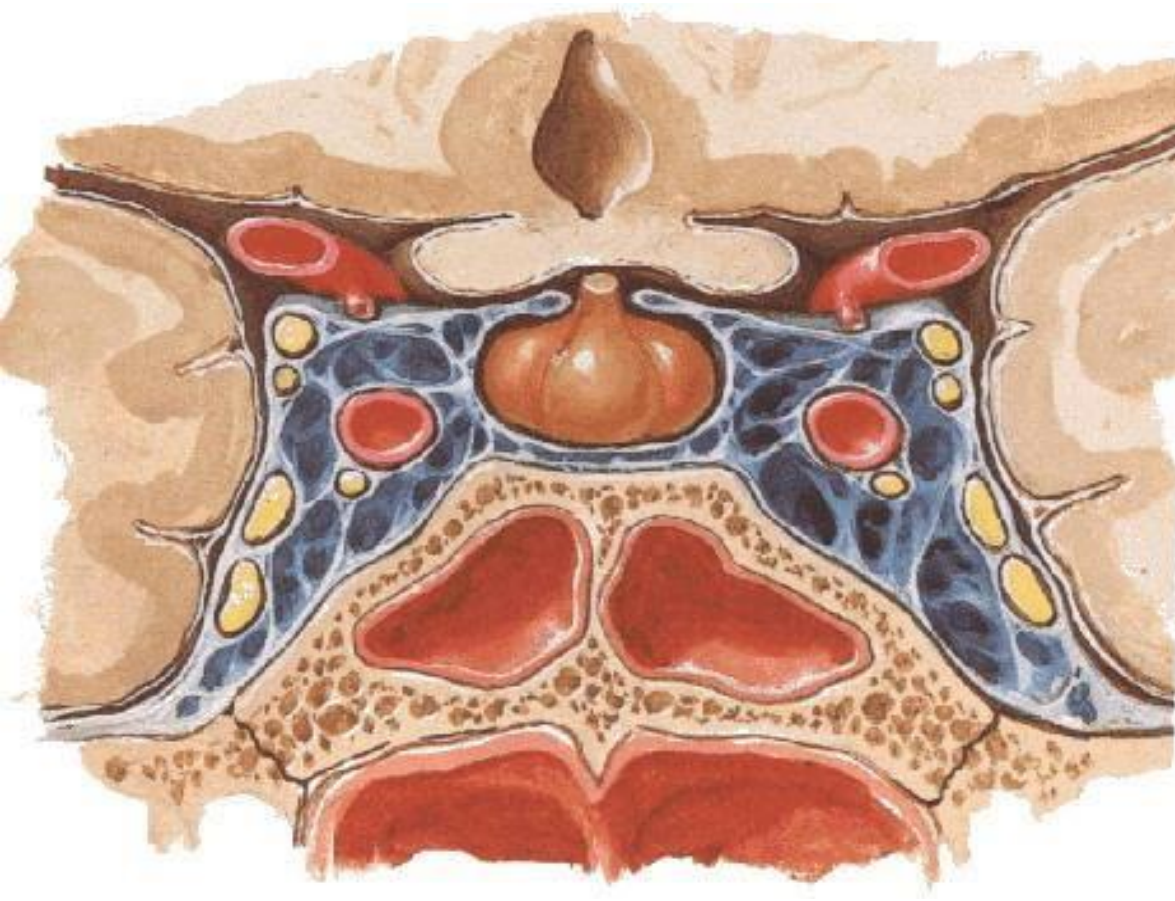
Superior petrosal sinus

Superior orbital fissure

**Cavernou
s sinus
sinus**

**Inferior
petrosal
sinus**



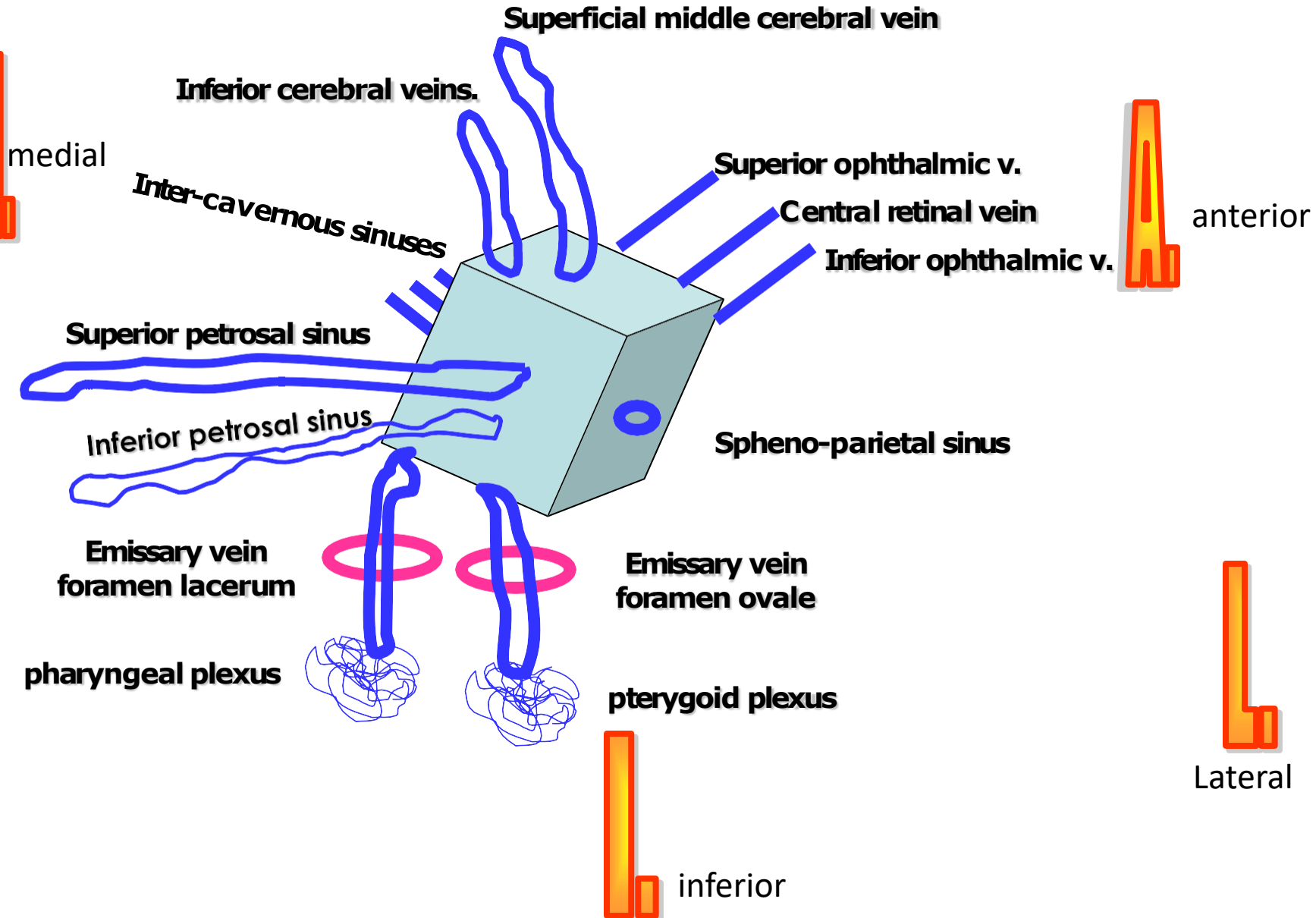


Cavernous sinus is the most important sinus. WHY?

1. It contains important structures.
2. It has tributaries from different places.

Tributaries

S. superior



2]=INTERNAL RELATIONS:- [CONTENTS OF CAVERNOUS SINUS]

1-Lateral wall:-

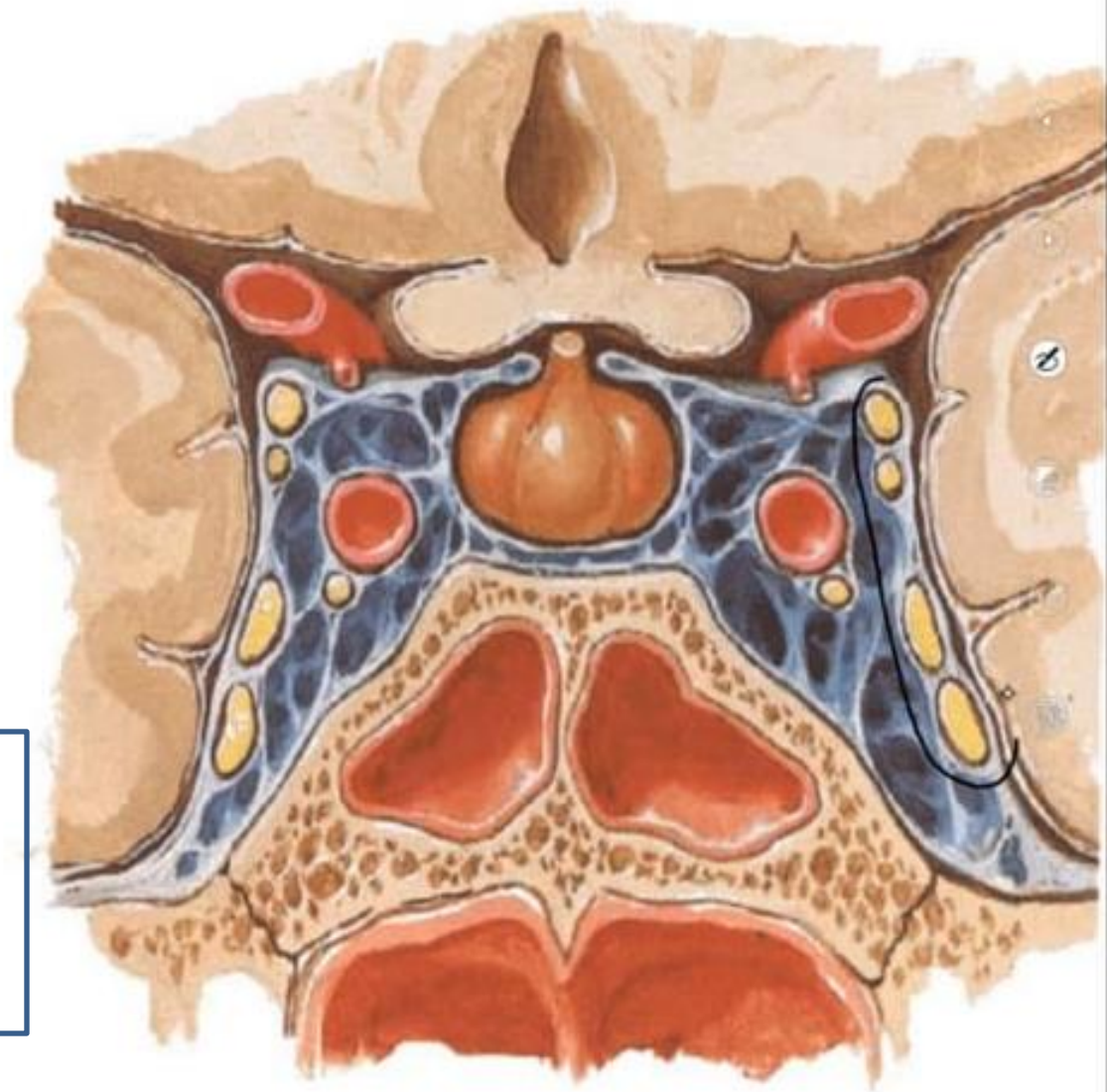
from above downwards;

- 1-Occulomotor nerve.
- 2-Trochlear nerve.
- 3-Ophthalmic nerve.
- 4-Maxillary nerve.

2-Floor:-

- 1-Internal carotid artery.
- 2-Sympathetic plexus around the artery.
- 3-Abducent nerve:-
infralateral to the artery.

Internal carotid artery contains blood that flows inside it → this flow prevents the stagnation of the blood inside cavernous sinus.



➤ Questions that you may have in your exam..

Q1- oculomotor N passes through :

A- lateral wall. ✓

B- medial wall.

C- superior wall.

D- Middle part.

E- floor.

Q2- ICA passes in cavernous sinus through:

A- lateral wall.

B- medial wall.

C- superior wall.

D- Middle part.

E- floor. ✓

Spheno-parietal sinus



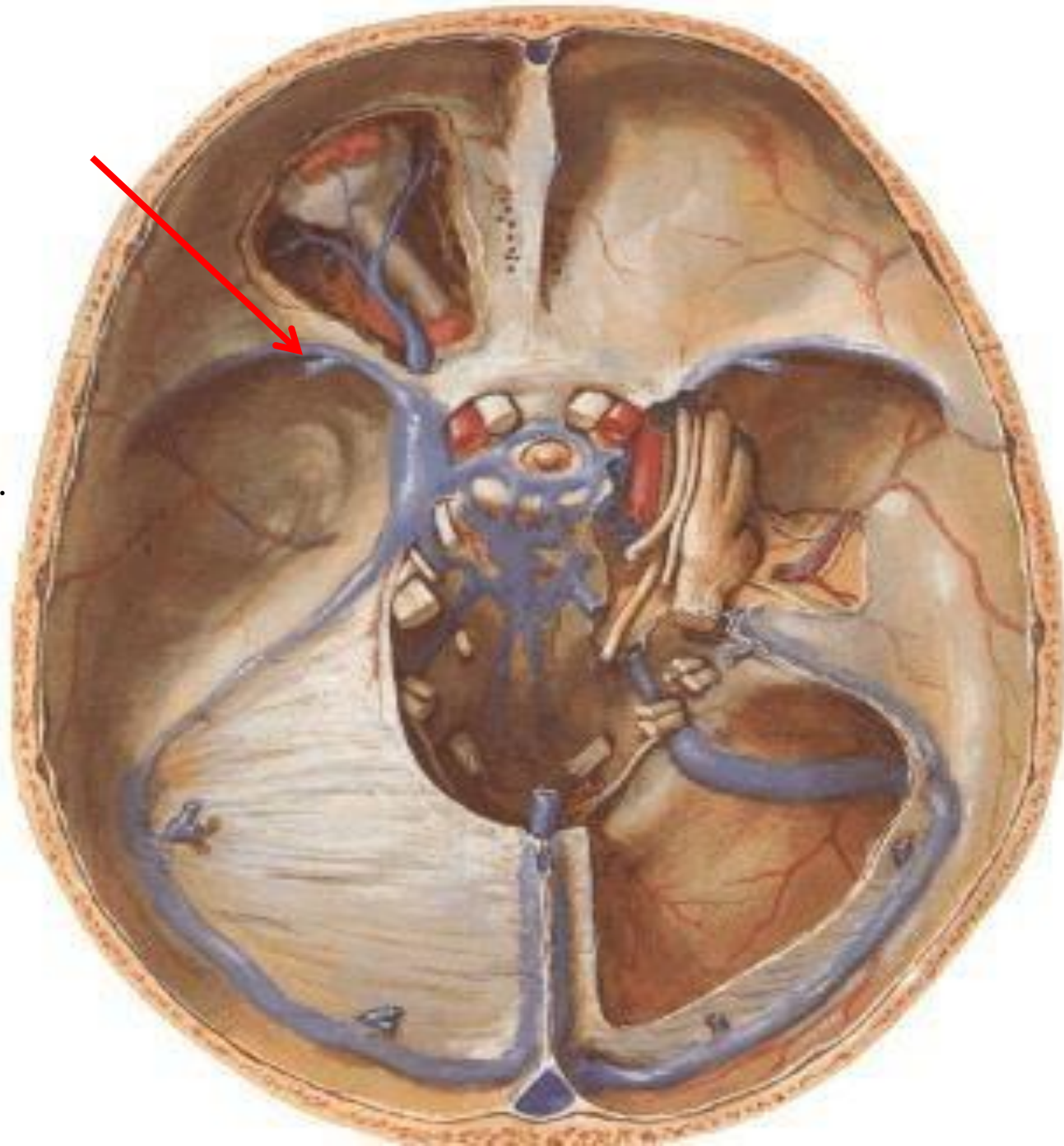
2

Site:

- Along the posterior free border of lesser wing of sphenoid.

Connection:

- Opens in to the anterior part of the cavernous sinus.

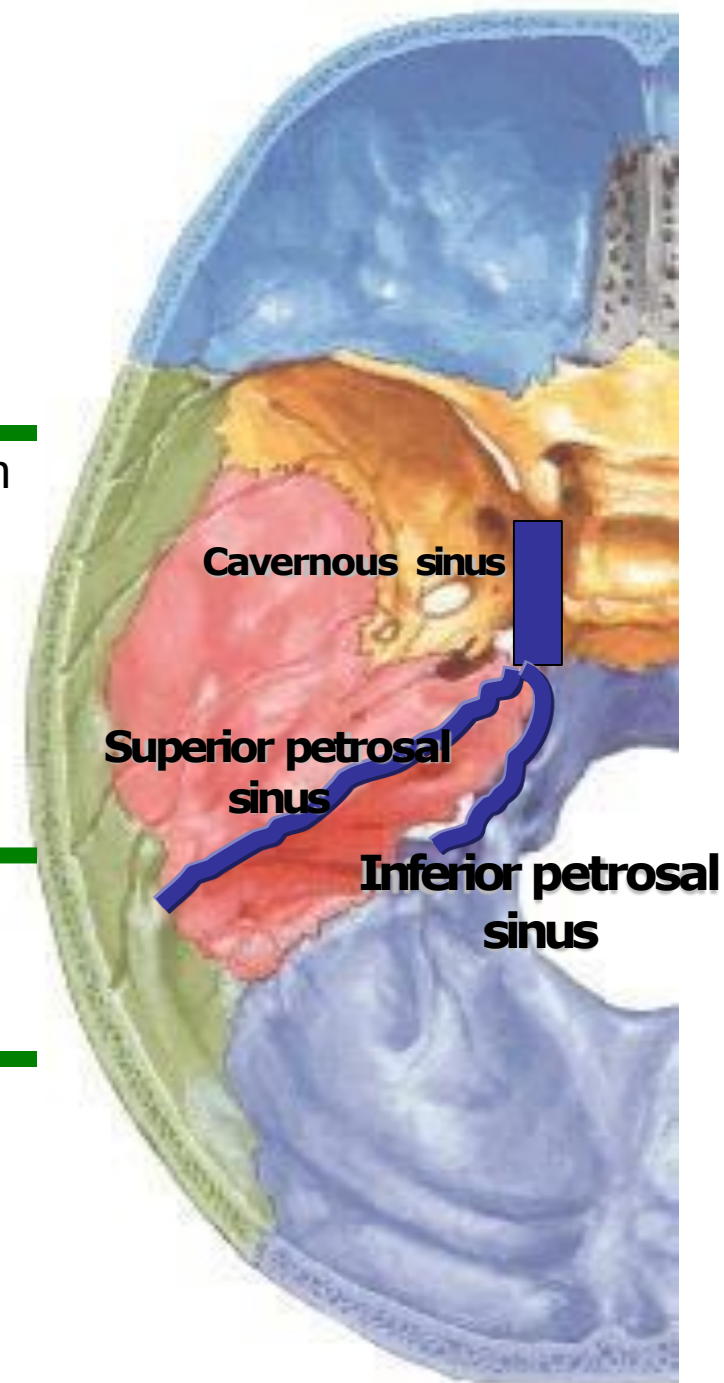


PETROSAL SINUSES

[SUPERIOR & INFERIOR]



	S P S	I P S
Site	Along the upper border of the petrous part of the temporal bone; In the attached margin of the tentorium cerebelli.	Along the angle between the petrous part of the temporal bone and the occipital bone.
Beginning	Posterior end of the cavernous sinus.	Posterior end of the cavernous sinus.



Termination

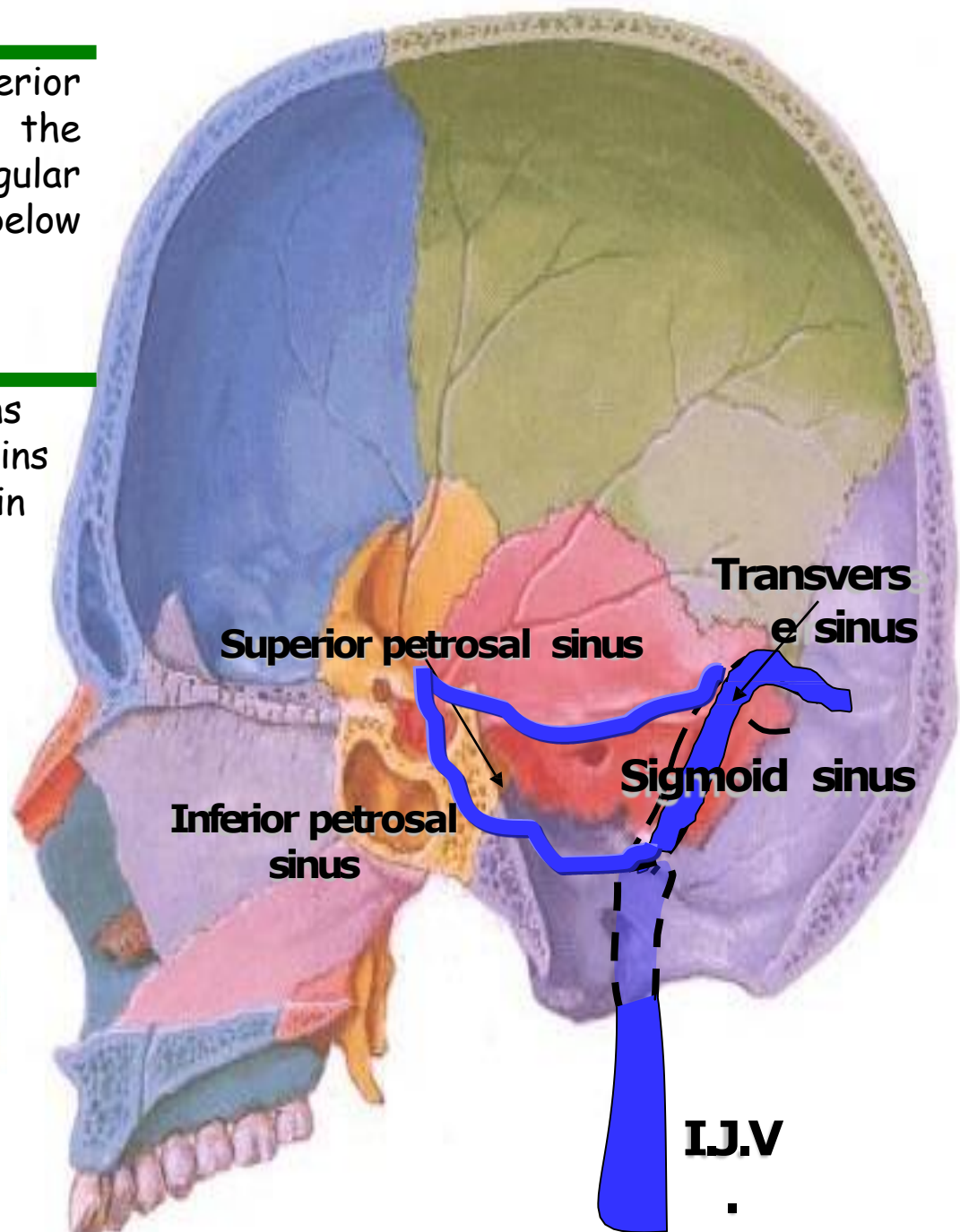
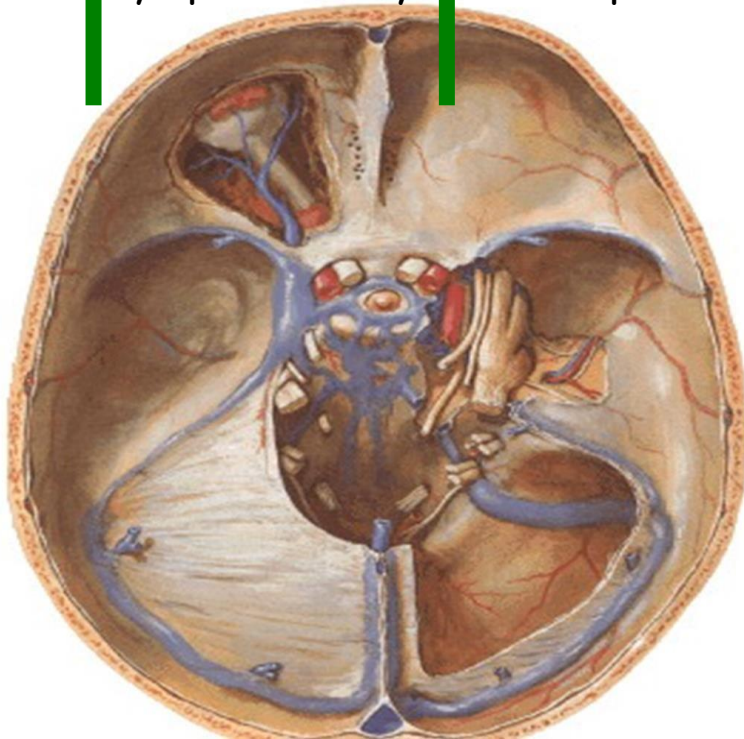
At the junction of the transverse and the sigmoid sinus.

Joins the superior bulb of the internal jugular vein (just below the skull).

Tributaries:

cerebellar veins- inferior
cerebral veins-
veins from
tympanic cavity

Cerebellar veins
labyrinthine veins
veins from brain
stem Basilar
venous plexus.



TRANSVERSE SINUSES



5

Site:

- Along the transverse groove in the attached margin of the tentorium cerebelli.

Beginning:

- The right sinus: continuation of the superior sagittal sinus.
- The left sinus: continuation of the straight sinus.

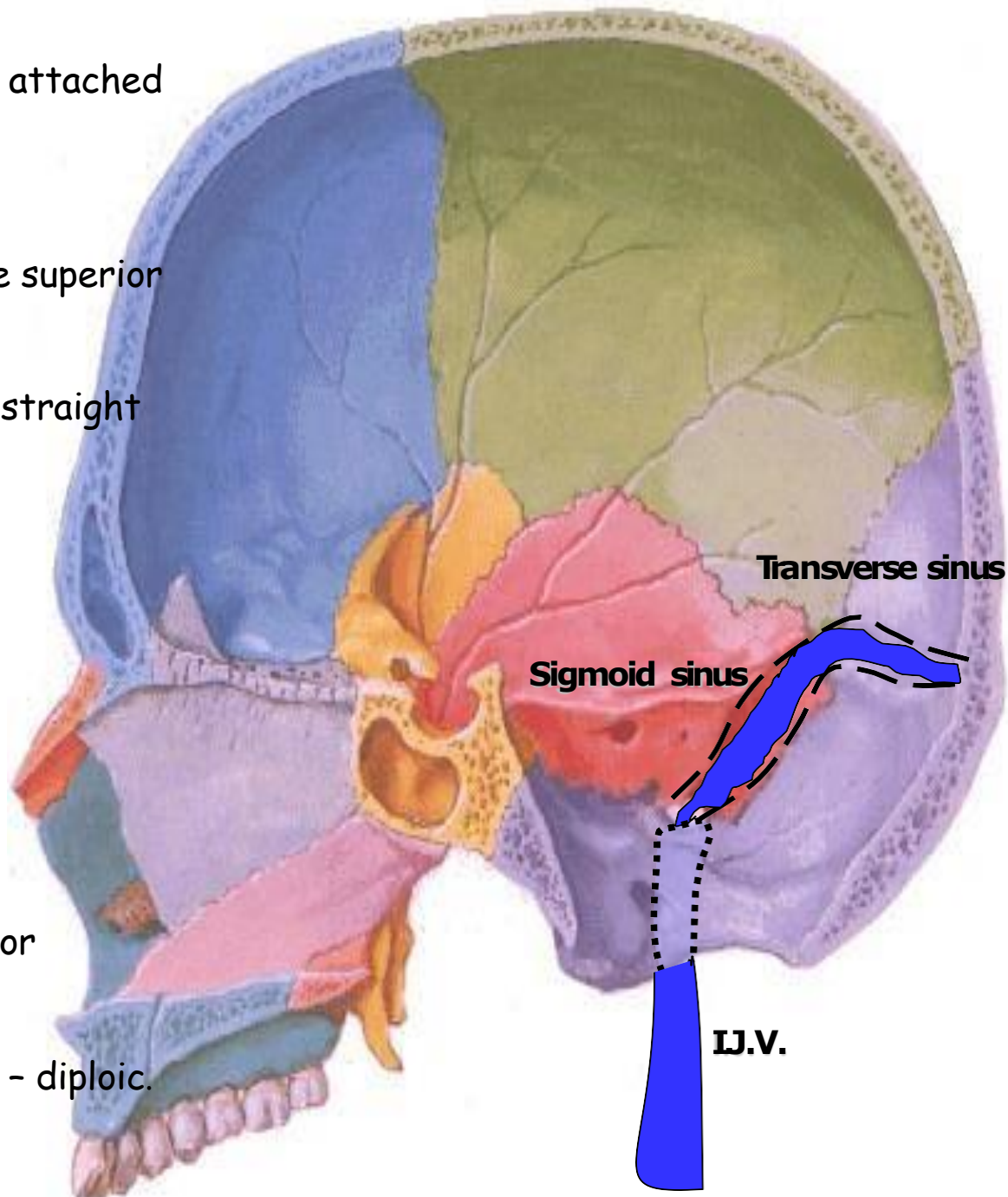
(the reverse may occur or both sinuses may begin from the confluence of the sinuses).

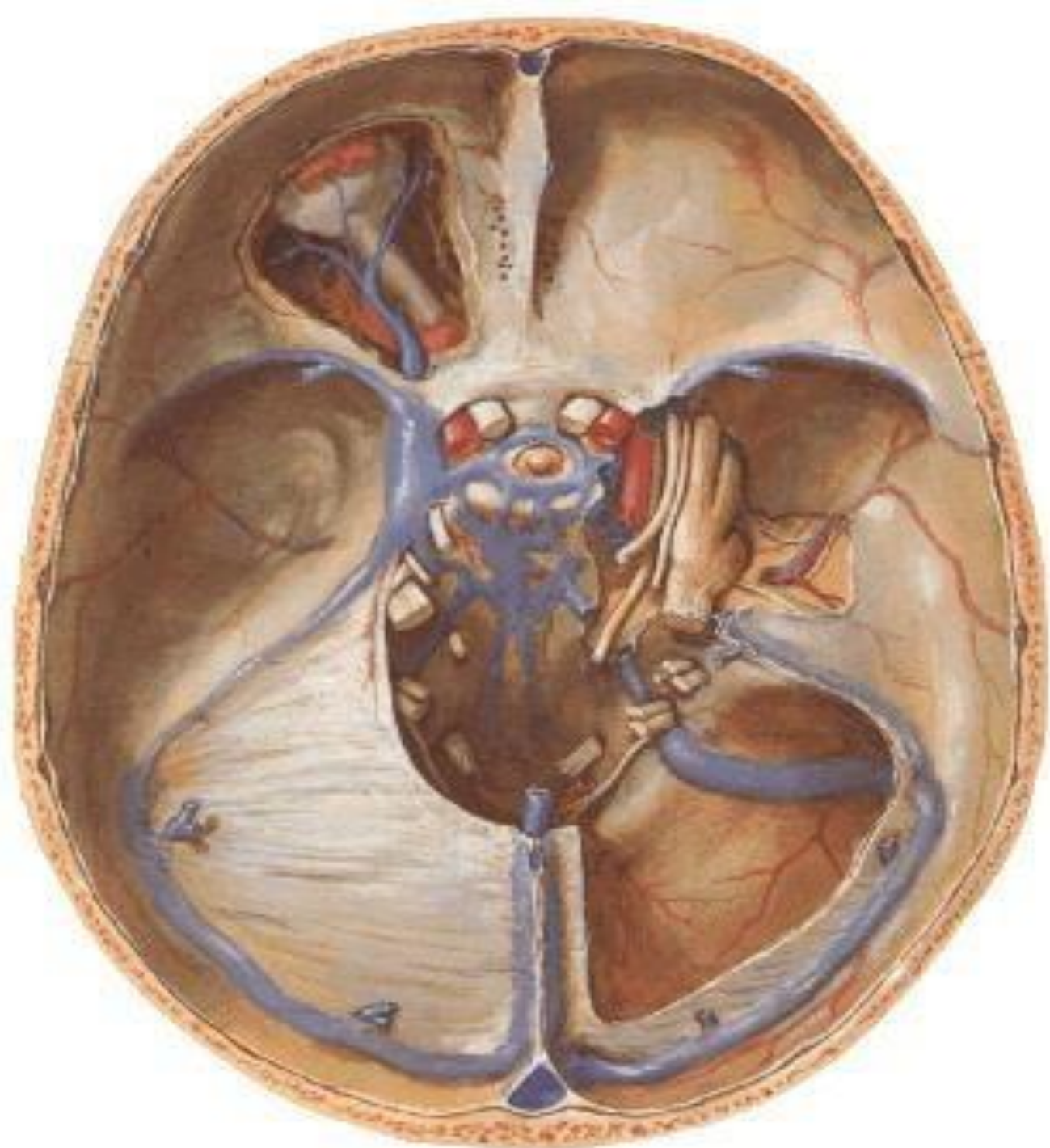
Termination:

- Continue as sigmoid sinus.

Tributaries:

- 2 sinuses → occipital sinus - superior petrosal sinus.
- 2 veins → inferior cerebellar veins - diploic.





S I G M O I D

S I N U S E S



6

Site:

- Along the S-shaped sigmoid groove.

Beginning:

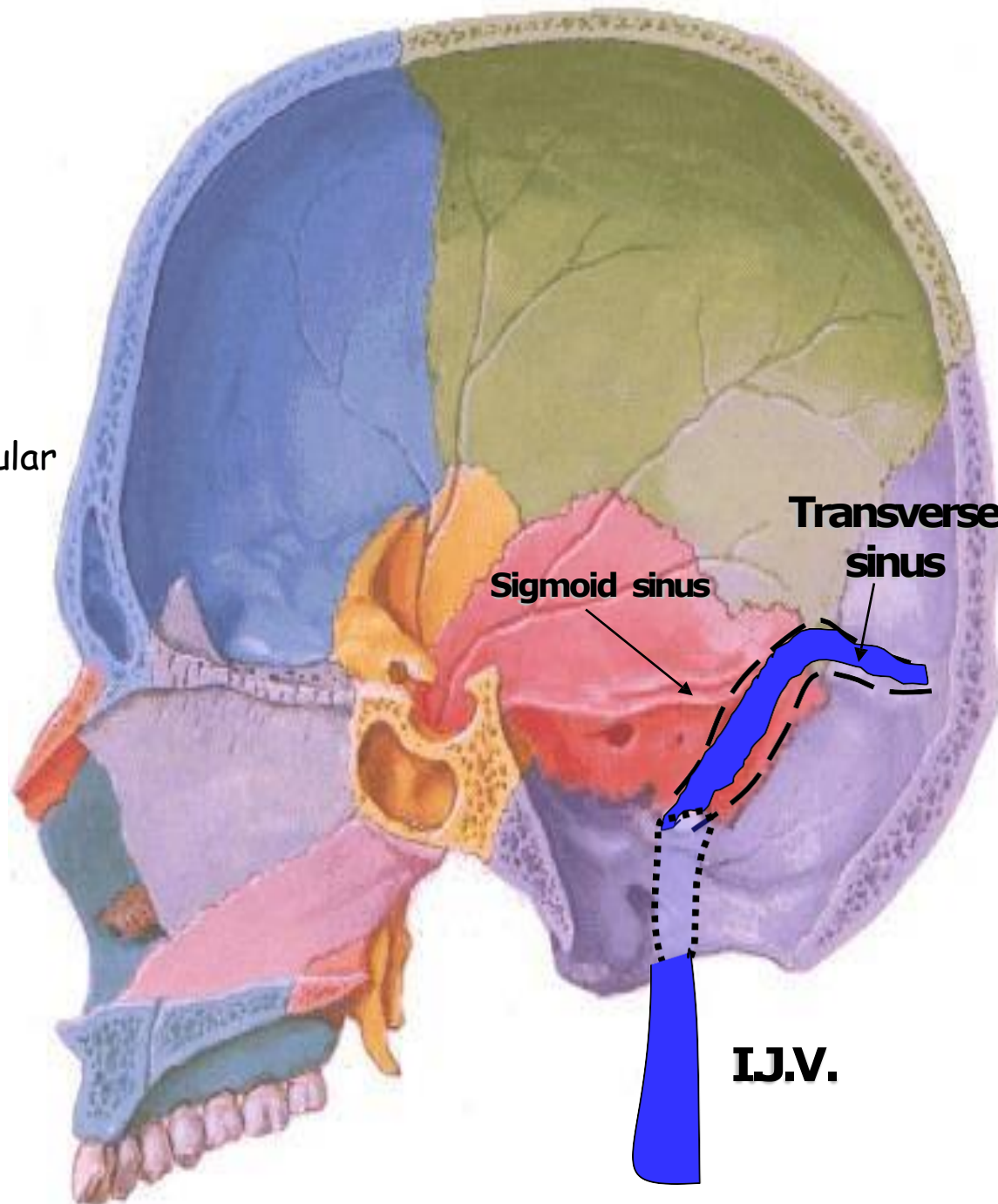
- Continuation of the transverse sinus.

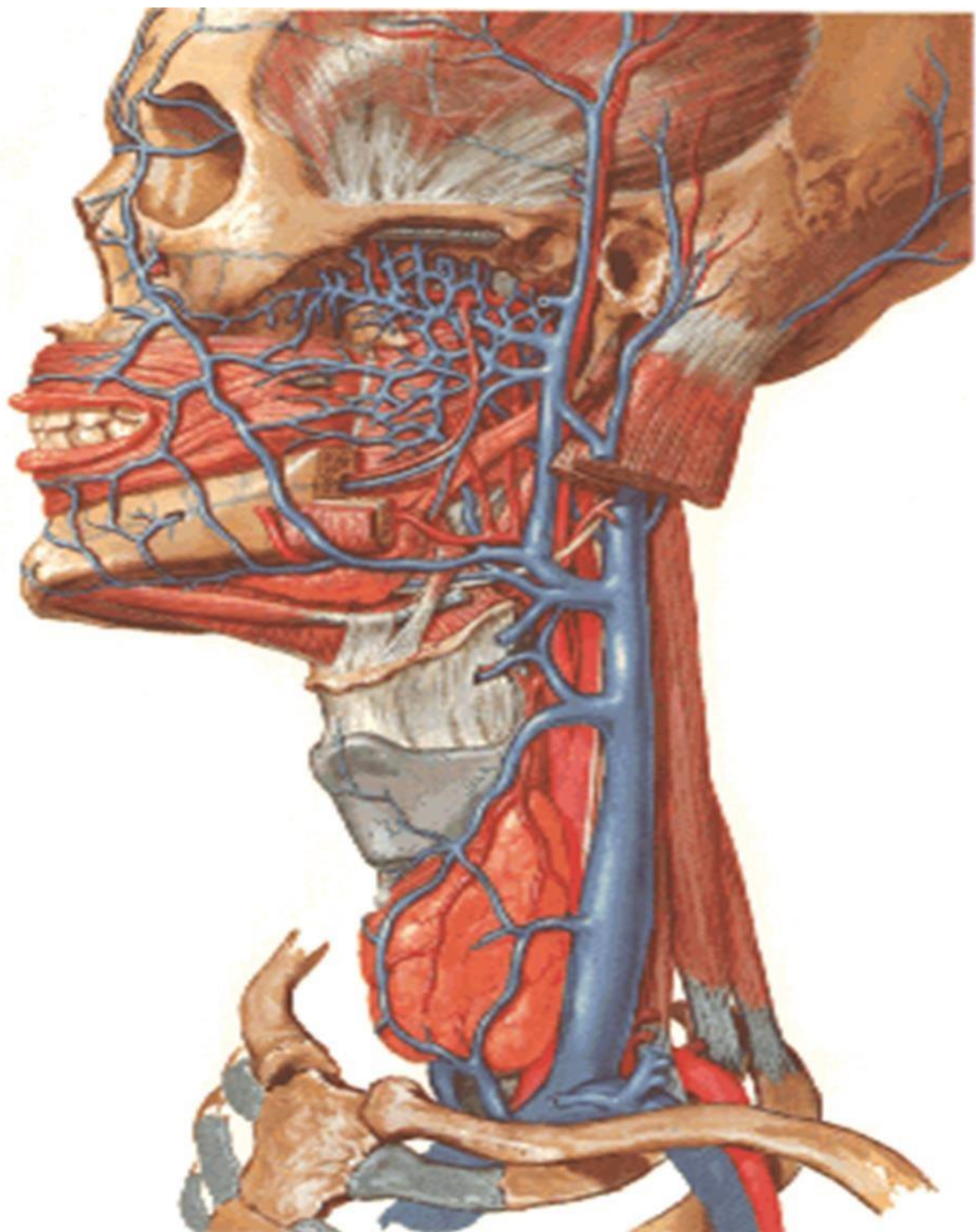
Termination:

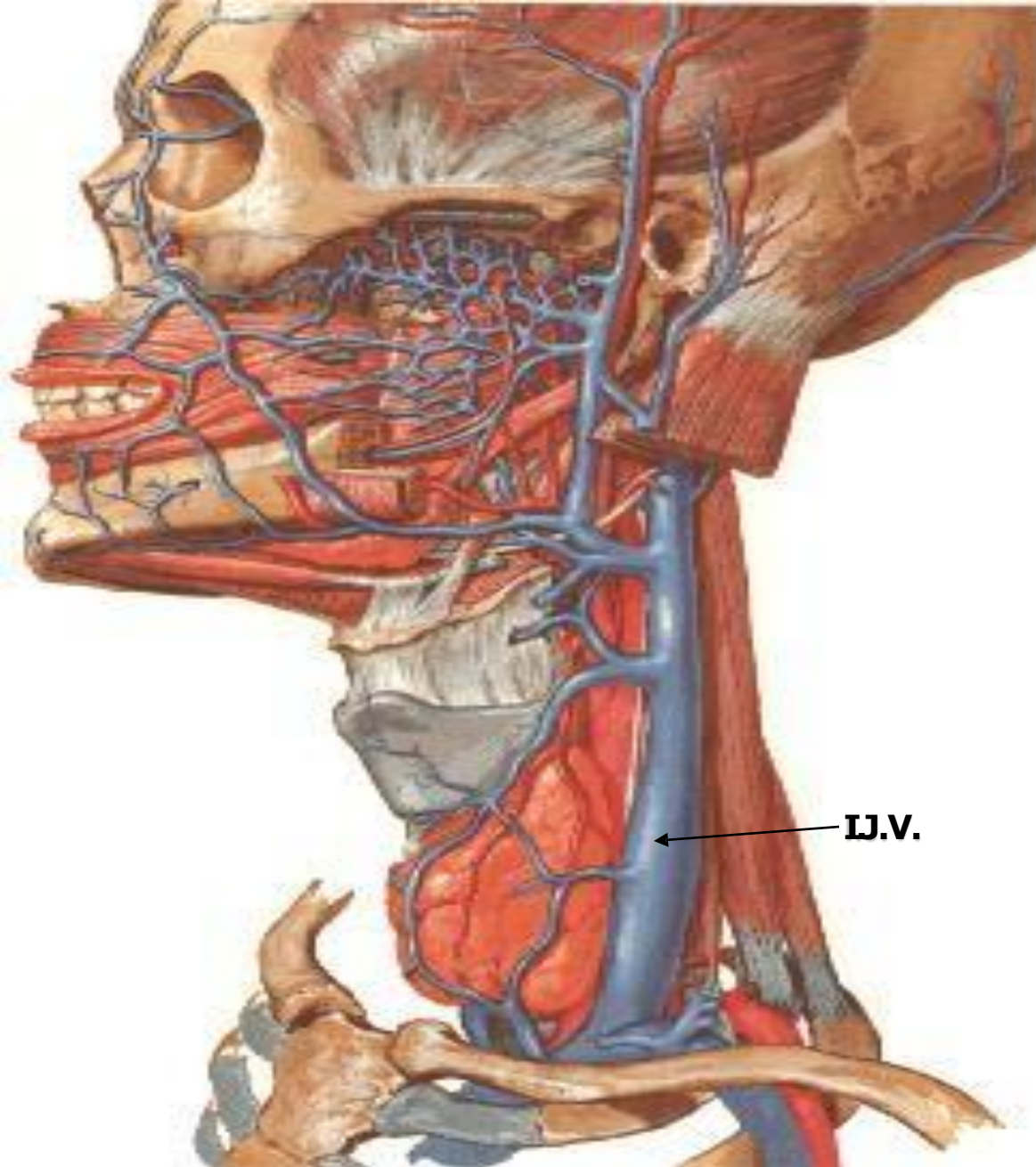
- Passes through the jugular foramen where it continues as the internal jugular vein.

Tributaries:

- Occipital sinus.
- Emissary veins.
- Diploic veins.







IJV.