

ADEBAYO BLESSING OMOLOLA

17/MHS01/013

MEDICINE AND SURGERY

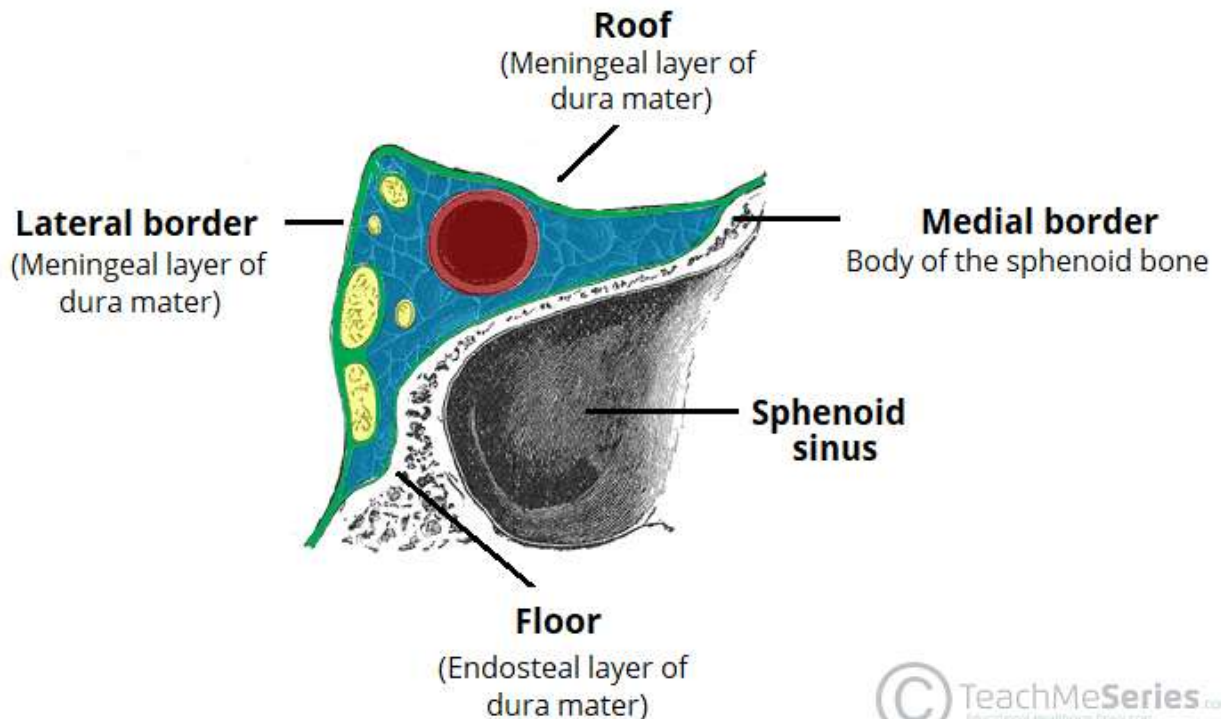
300 LEVEL

GROSS ANATOMY OF THE HEAD AND NECK

1. Write an essay on cavernous sinus
2. Discuss the walls of the nose

ANSWER

1. CAVERNOUS SINUS



The cavernous sinus is a paired dural venous sinus located within the cranial cavity. It is divided by septa into small 'caves' – from which it gets its name.

Each cavernous sinus has a close anatomical relationship with several key structures in the head, and is arguably the most clinically important venous sinus.

The cavernous sinuses are located within the middle cranial fossa, on either side of the sella turcica of the sphenoid bone (which contains the pituitary gland). They are enclosed by the endosteal and meningeal layers of the dura mater.

The borders of the cavernous sinus are as follows:

- Anterior – superior orbital fissure.
- Posterior – petrous part of the temporal bone.
- Medial – body of the sphenoid bone.
- Lateral – meningeal layer of the dura mater running from the roof to the floor of the middle cranial fossa.
- Roof – meningeal layer of the dura mater that attaches to the anterior and middle clinoid processes of the sphenoid bone.
- Floor – endosteal layer of dura mater that overlies the base of the greater wing of the sphenoid bone.

Content of the Cavernous Sinus:

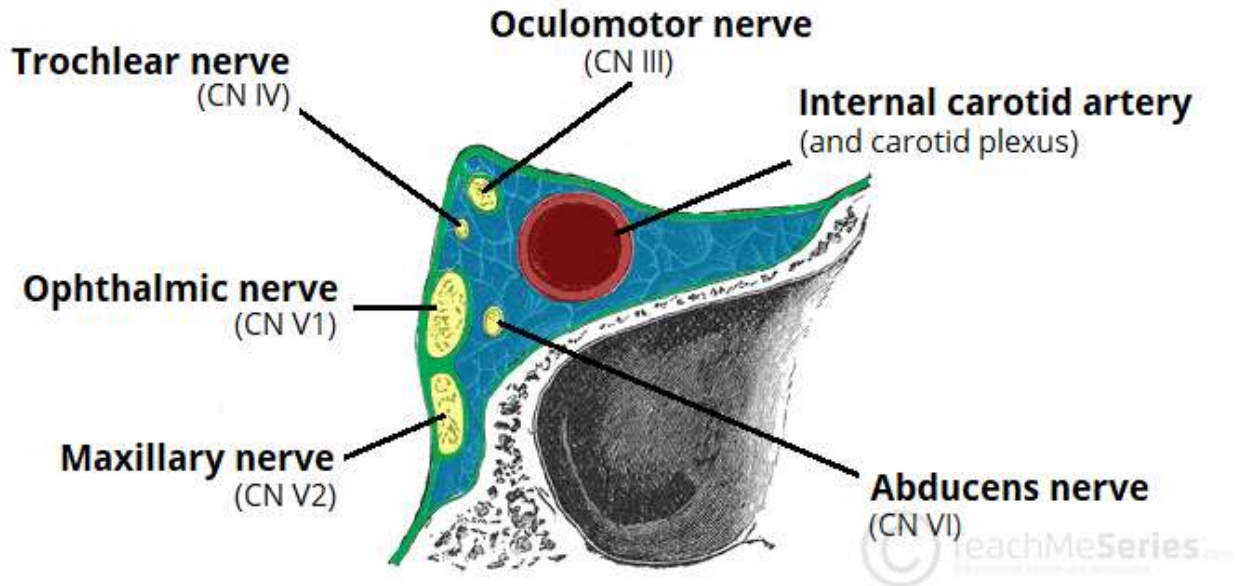
Several important structures pass through the cavernous sinus to enter the orbit. They can be sub-classified by whether they travel through the sinus itself, or through its lateral wall:

Contents that travel through cavernous sinus:

- Abducens nerve (CN VI)
- Carotid plexus (post-ganglionic sympathetic nerve fibres)
- Internal carotid artery (cavernous portion)

Contents that travel through lateral wall of cavernous sinus:

- Oculomotor nerve (CN III)
- Trochlear nerve (CN IV)
- Ophthalmic (V1) and maxillary (V2) branches of the trigeminal nerve



Each cavernous sinus receives venous drainage from:

- **Ophthalmic veins** (superior and inferior) – these enter the cavernous sinus via the superior orbital fissure.
- **Central vein of the retina** – drains into the superior ophthalmic vein, or directly into the cavernous sinus.
- **Sphenoparietal sinus** – empties into the anterior aspect of the cavernous sinus.
- **Superficial middle cerebral vein** – contributes to the venous drainage of the cerebrum
- **Pterygoid plexus** – located within the infratemporal fossa.

The cavernous sinuses empty into the superior and inferior petrosal sinuses, and ultimately, into the internal jugular vein. The left and right cavernous sinuses are connected in the midline by the anterior and posterior intercavernous sinuses. They travel through the sella turcica of the sphenoid bone.

2. WALLS OF THE NOSE

- Roof
- Floor
- Medial wall
- Lateral wall

The roof: Is curved and narrow, except at its posterior end. It is divided into 3 parts; Frontonasal, Ethmoidal, Sphenoidal. They are named from the bones forming each part.

The floor: It is wider than the roof and it is formed by the; palatine processes of the maxilla, horizontal plates of the palatine bone.

The medial wall: It is formed by the nasal septum, which is formed by the perpendicular plate of the ethmoid bone, the vomer, cartilage, and the nasal crests of the maxillary and palatine.

The lateral wall: Are irregular owing to three bony plates, the nasal conchae, which project inferiorly, somewhat like louvers. This wall is hallmarked by three nasal conchae (superior, middle, and inferior) that project inferiorly from the wall.

They divide the nasal cavity into four passages that have openings to the paranasal sinuses:

- **The sphenoethmoid recess** lies posterior to the superior concha and has the opening for the sphenoidal sinus.
- **The superior nasal meatus** lies between the superior and middle conchae and has openings to the posterior ethmoidal sinuses.
- **The middle nasal meatus** is longer and deeper than the superior nasal meatus. The frontal sinus communicates with the middle nasal meatus via the infundibulum, a passageway that opens into the semilunar hiatus (groove in the ethmoid bone). The maxillary sinus opens into the semilunar hiatus. An ethmoidal bulla (a round swelling formed by the middle ethmoidal cells, or air-filled cavities) is formed just above the semilunar hiatus. The middle and anterior ethmoidal sinuses drain into the middle nasal meatus.

- **The inferior nasal meatus** is found below the inferior nasal concha. The nasolacrimal duct opens into this meatus.

