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DEPARTMENT: MEDICINE AND SURGERY

LEVEL: 300

assignment 2

1) Write an essay on the carvenous sinus

ANSWERS

The Carvenous sinus within the human head is one of the dural venous sinuses creating a cavity called the lateral sellar compartment bordered by the temporal bone of the skull and the sphenoid bone, lateral to the sella turcica

STRUCTURE OF THE CARVENOUS SINUS

The carvenous sinus is one of the dural venous sinuses of the head. It is a network of veins that sit in a cavity, approximately 1x2cm in size in an adult. The carotid siphon of the internal carotid artery and cranial nerves III, IV, V (Branches of V1 and V2) and VI all pass through this blood filled space

STRUCTURES RELATED TO IT

Superiorly: Optic tract, optic chiasma, internalcarotid artery

Inferiorly: Foramen lacerum and the junction of the body and greater wing of sphenoid bone

Medially: Hypophysis cerebri or (pituitary gland) and sphenoidal air sinus

Laterally: Temporal lobe with uncus

Anteriorly: Superior orbital fissure and the apex of the orbit

Posteriorly: Apex of petrous temporal bone

VENOUS CONNECTIONS

The carvenous sinus receives blood from:

1) Superior and inferior opthalmic veins

2) Sphenoparietal sinus

3) Superficial middle cerebral veins

4) Inferior cerebral veins

Blood leaves thee sinus via superior and inferior petrosal sinuses as well as via the emissary veins through the foraminanof the skull (mostly through foramen ovale). There are also connections with the pterygoid plexus of veins via inferior ophthalmic vein, deep facial vein and emissary veins

Apart from the blood which passes through a venous sinus, several anatomical structures, including some cranial nerves and their branches, also pass through the sinus.

Structures within the outer(lateral) wall of the compartment from the superior to inferior:

1) Oculomotor nerve

2) Trochlear nerve

3) Opthalmic and maxillary branches of the trigeminal nerve

Structures passing through the medial wall:

1) Abducens nerve

2) Internal carotid artery accompanied by the internal carotid plexus

As a venous sinus, the carvenous sinus receives blood from the superior and inferior ophtalmic veins and from superficial cortical veins, and is connected to the basilar plexus of veins posteriorly. The carvenous sinus drains by two larger channels, the superior and inferior petrosal sinuses, ultimately inti the the internal jugular vein via the sigmoid sinus, also draining with emissary vein to pterygoid plexus

CLINICAL SIGNIFICANCE

The pituitary gland lies between the two paired carvenous sinuses. An abnormally growing pituitary adenoma, sitting on the bony sella turcica, will expand in the direction of least resistance and eventually compress the carvenous sinus. Carvenous sinus syndrome may result from mass effect of these tumors and cause ophthalmoplegia (from compression of the oculomotor nerve, trochlear nerve and abducens nerve), ophthalmic sensory loss (from compression of ophthalmic nerve), and maxillary sensory loss(from compression of the maxillary nerve).

2) Discusss the walls of the nose

ANSWERS

The Nose or nasal cavity has 4 walls. They are:

1) Roof

2) Floor

3) Medial wall

4) Lateral wall

THE ROOF

The roof is curved and narrow, except at its posterior end. It is divided into 3 parts:

1) Frontonasal

2) Sphenoidal

3) Ethmoidal

They are named from the bones forming each part

THE FLOOR

The floor is wider than the roof. It is formed by:

1) Palatine process of maxillae

2) Horizontal plates of the palatine bone

THE MEDIAL WALL

The mediall wall is formed by the nasal septum

THE LATERAL WALL

The lateral wall are irregularly owing to three bony plates, the nasal conchae, which project inferiorly, somewhat like louvers.

Features on the lateral wall:

1)Superior nasal concha

2)Middle nasal concha

3)Inferior nasal concha

ARTERIAL SUPPLY

The arterial supply of the medial and lateral walls of the nasal cavity is from five sources:

1) Anterior ethmoidal artery (from the ophthalmic artery)

2) Posterior ethmoidal artery (from the ophthalmic artery)

3) Sphenopalatine artery (from the maxillary artery)

4) Greater palatine artery (from the mazillary artery)

5) Septal branch of the superior labial artery ( from the facial artery)

The anterior part of the nasal septum is the site (kiesselbach area) of an anastomotic arterial plexus involving all five arteries supplying the septum.

The external nose also receives blood from the 1st and 5th arteries

VENOUS DRAINAGE

A rich submucosal venous plexus deep to the nasal mucosadrains into the sphenopalatine, facial and ophthalmic veins.

INNERVATIONS

1) Olfactory nerve

2) Branches of the ophthalmic which include the anterior and posterior ethmoidal veins

3) Maxillary nerves