

1. Write an essay on the Carvenous sinus

The cavernous sinus within the human head is one of the dural venous sinuses[1] 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.

The cavernous sinus receives blood from:

Superior and inferior ophthalmic veins

Sphenoparietal sinus

Superficial middle cerebral veins

Inferior cerebral veins

NERVES

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 superior to inferior:

Oculomotor nerve

Trochlear nerve

Ophthalmic and maxillary branches of the trigeminal nerve

Structures passing through the medial wall:

Abducens nerve

Internal carotid artery accompanied by the Internal carotid plexus

FUNCTIONS

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

Applied anatomy

Arteriovenous fistula: Rupture of the internal carotid artery. It is an abnormal connection or passageway between an artery and a vein. It may be congenital, surgically created for hemodialysis treatments, or acquired due to pathologic process, such as trauma or erosion of an arterial aneurysm.

Pituitary adenoma, sitting on the bony sella turcica, will expand in the direction of least resistance and eventually compress the cavernous sinus. It is an abnormal growth.

Tumours and cancer

2. Discuss the walls of the nose

The nose is the most protruding part of the face. It bears the nostrils and is the first organ of the respiratory system.

The nasal cavity is a large, air-filled space above and behind the nose in the middle of the face. The nasal septum divides the cavity into two cavities,[1] also known as fossae.[2] Each cavity is the continuation of one of the two nostrils. The nasal cavity is the uppermost part of the respiratory system and provides the nasal passage for inhaled air from the nostrils to the nasopharynx and rest of the respiratory tract.

Divisions

The nasal cavity is the most superior part of the respiratory tract. It extends from the vestibule of the nose to the nasopharynx, and has three divisions:

Vestibule – the area surrounding the anterior external opening to the nasal cavity.

Respiratory region – lined by a ciliated psudeostratified epithelium, interspersed with mucus-secreting goblet cells.

Olfactory region – located at the apex of the nasal cavity. It is lined by olfactory cells with olfactory receptors.

Nasal Conchae

Projecting out of the lateral walls of the nasal cavity are curved shelves of bone. They are called conchae (or turbinates). There are three conchae – inferior, middle and superior.

They project into the nasal cavity, creating four pathways for the air to flow. These pathways are called meatuses:

1. Inferior meatus – between the inferior concha and floor of the nasal cavity.
2. Middle meatus – between the inferior and middle concha.
3. Superior meatus – between the middle and superior concha.

Vasculature

The nose has a very rich vascular supply – this allows it to effectively change humidity and temperature of inspired air. The nose receives blood from both the internal and external carotid arteries:

Internal carotid branches:

Anterior ethmoidal artery

Posterior ethmoidal artery

The ethmoidal arteries are branch of the ophthalmic artery. They descend into the nasal cavity through the cribriform plate

External carotid branches:

Sphenopalatine artery

Greater palatine artery

Superior labial artery

Lateral nasal arteries

The veins of the nose tend to follow the arteries. They drain into the pterygoid plexus, facial vein or cavernous sinus.

INNERVATION

Olfactory nerve

Nasopalatine nerve

Trigeminal nerve