

Cranial duramater and dural venous sinuses

Introduction

- cranial cavity contains : brain ,blood, CSF
- Brain is covered from outside to inside by:
- Three meninges or membranes-
 - 1.Dura mater : thick : pachymeninx
 - 2.arachnoid mater: spider web
 - 3.Pia mater: thin transparent vascular
- Arachnoid + pia = leptomeninx

Cranial dura

-*2 layers* : outer endosteal
 : inner meningeal

-*4 folds* : falx cerebri
 falx cerebelli
 tentorium cerebelli
 diaphragma sellae

-*Dural venous sinuses* are lodged along the lines of separation between the endosteal and meningeal layers

Spinal dura

- consists of meningeal layer only
- epidural (extradural) space : +nt
 - dural venous sinuses : -nt

Dural folds/processes/reflections

- I. Falx cerebri
- II. Falx cerebelli
- III. Tentorium cerebelli
- IV. Diaphragma sellae

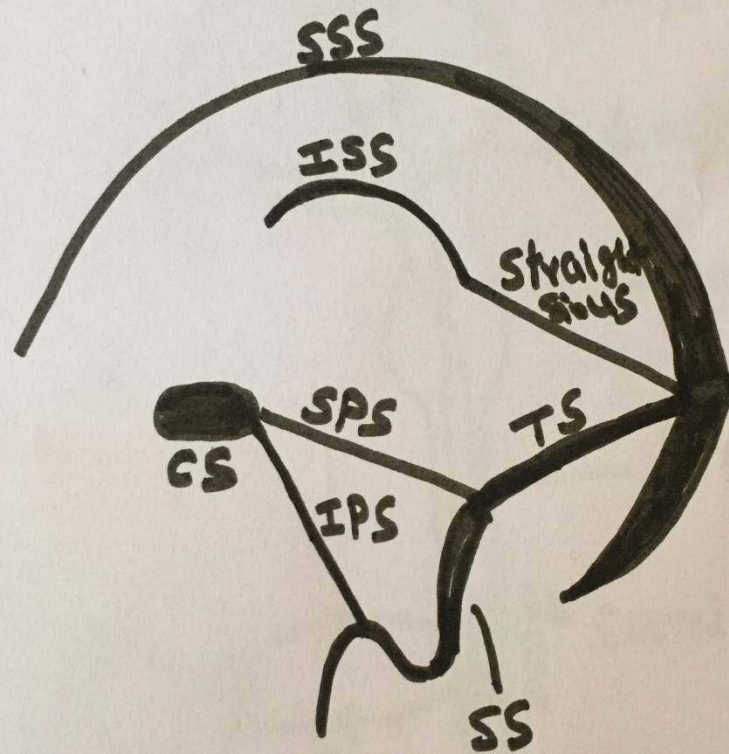
Characteristics of Dural venous sinuses

- lined with endothelium
- valve less
- devoid of muscular coat
- collect blood from
brain,meninges,orbit,scalp,nose....
- absorb the C.S.F through the granulation
tissue
- receive valve less emissary veins

Venous sinuses of duramater

- Situation : between endosteal and meningeal layers
- Classification:-**paired**:
 - 1)transverse
 - 2)sigmoid
 - 3)cavernous
 - 4)superior and inferior petrosal
 - 5)spheno-parietal
 - 6)petro-squamous

Dural venous sinuses



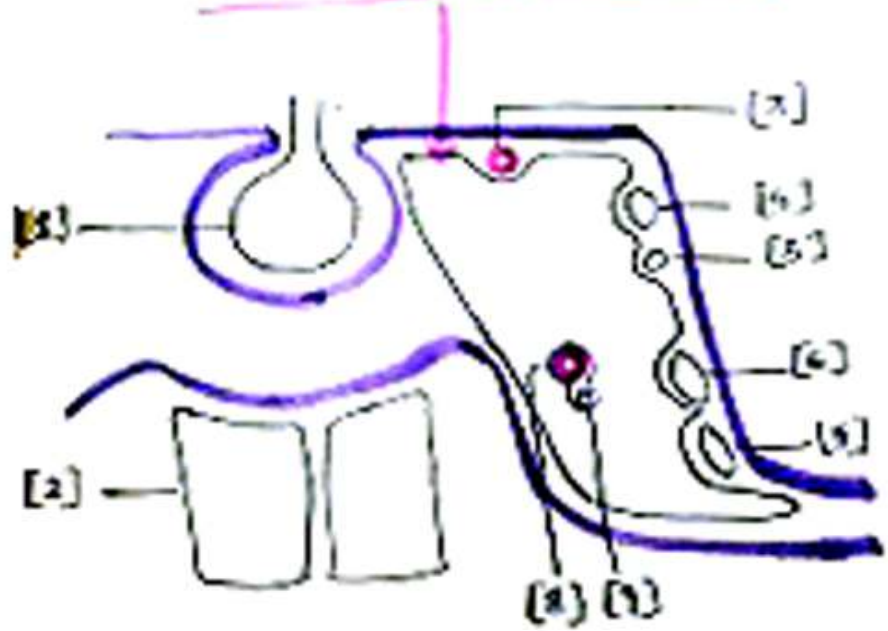
Unpaired sinuses

- superior sagittal
- inferior sagittal
- anterior intercavernous
- posterior intercavernous
- occipital
- straight
- basilar venous plexus

Applied anatomy

- pain sensitive
- dural origin of headache
- head injury and intracranial haemorrhage
- leptomeningitis : infection of leptomeninges
- tentorial herniation :
- bulging of the sellar diaphragm
- cranial dura Vs spinal dura

Cavernous Sinus.



- 1 - Hypophysis cerebri.
- 2 - Sphenoidal air sinus.
- 3 - Internal carotid artery
- 4 - IIIrd cranial nerve.
- 5 - IVth cranial nerve
- 6 } Vth cranial nerve divisions.
- 7 }
- 8 - ICA
- 9 - VIth cranial nerve

External relations of cavernous sinus:

-medially and below :

hypophysis cerebri and sphenoidal air sinus

-laterally : trigeminal cave , uncus of temporal lobe

-above : optic chiasma , carotid siphon

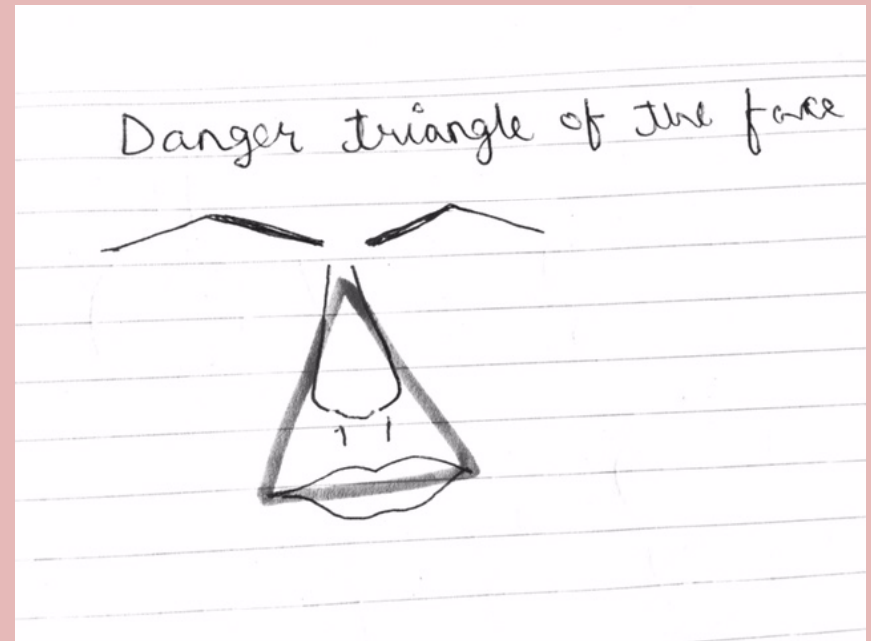
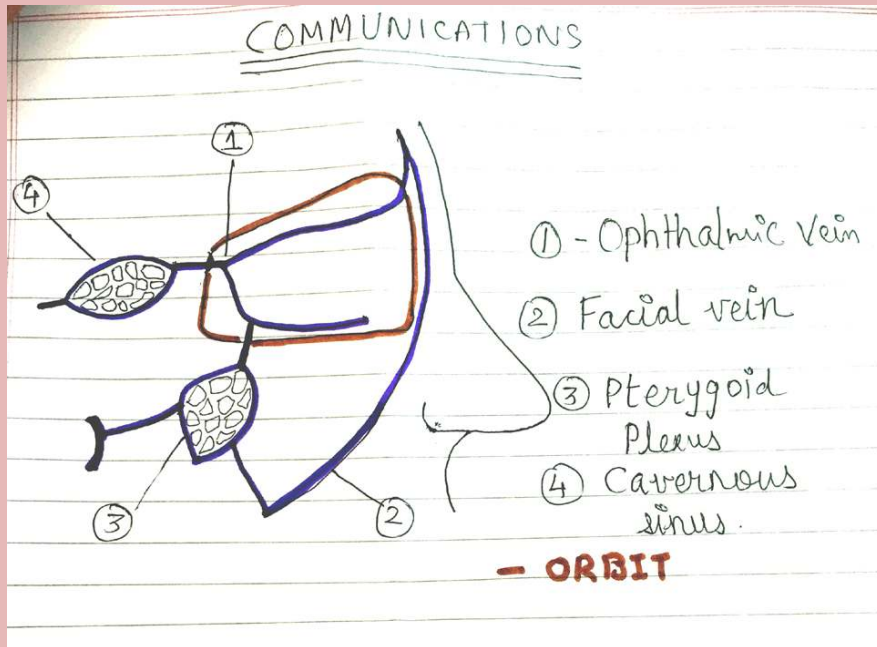
Factors regulating blood flow through cavernous sinus

- Carotid pulsations
- Gravity
- Change of position of head

TRIBUTARIES:

- *SUPERIOR OPHTHALMIC VEIN*
- *INFERIOR OPHTHALMIC VEIN*
- *CENTRAL VEIN OF RETINA*
- *SUPERFICIAL MIDDLE CEREBRAL VEIN*
- *FEW OF INFERIOR CEREBRAL VEINS*
- *SPHENO-PARIETAL SINUS*

communications



applied anatomy:

- 1) septic thrombosis:**-severe pain in eye and forehead;ophthalmoplegia;marked oedema of eyelids with exophthalmous;unilateral may become bilateral
- 2) pulsating exophthalmos:**arteriovenous communication between ICA and cavernous sinus due to fracture of base of skull
- 3) metastasis of tumor cells** to the Dural sinuses: from thorax,abdomen,pelvis because.....