

## Lab 2

we will look into several **angled** horizontal sections ( orbitomeatal plane ) i.e passing from the orbit into the ear

### Figure I page 76 :

looking at the key on the left side this section passed through the frontal lobe ,highest point (top) of corpus collosum ,and in the back it passed through lowest point of occipital lobe.

we can notice the corpus collosum (**C**) on both sides lateral to it the body of lateral ventricle (**D**) which ends in a wide area in the back called **trigone (F)** the point where the body inferior and posterior horns meet lateral to the lateral horn we see the corona radiata (**P**) as long as we don't see the boundaries of internal capsule it is the corona radiata which lies above the internal capsule .

Boundaries of anterior limb : caudate and lentiform

Boundaries of posterior limb : thalamus and lentiform

If any of these boundaries is not present it will be corona radiata (which is above the internal capsule ).

### Figure II page 77 :

looking at the key we notice that this section passed through the frontal lobe genu of corpus collosum then in the back it passed through part of the thalamus and the cerebellum not the occipital lobe so it didn't pass through the posterior horn.

looking at this section we should be able to recognize the genu (B) splenium (**K**) anterior horn of lateral ventricle (**C**) and between the ant horns septum lucidum (D) and part of the fornix (I) head of caudate (G)thalamus (H) corona radiata (S) because there is **no** lentiform so we can't call it internal capsule one of the boundaries which is the lentiform is not present and the cavity in the back trigon.

### Figure III page 78 :

using this angled horizontal section we can recognize **4 out of 5 parts** of internal capsule : ant limb, post limb, genu and retrolentiform (the part behind the lentiform which has the optic radiation). we can also see the thalamus , genu and splenium

this section is very very important it will come in the exam because it has many applications the doctor might ask about the parts of internal capsule, lesions affecting them and blood supply of certain structures

why is the post limb the most important one? it has descending pyramidal and extrapyramidal tracts and **sensory radiation** ascending up from the thalamic ventrobasal complex nucleus through the **VPL** (from the body ) and **VPM** (from the face) to reach the somatosensory cortex.

**\*\*what will happen if an extensive lesion affected all parts of internal capsule ?**

If lesion affects the **post limb** → contralateral spastic hemiplegia spastic paralysis, contralateral hemi face, contralateral **temporary** hemianesthesia (temporary coz damage to sensory radiation will be regained at the level of the thalamus crudely)

**Retrolentiform** → contralateral homonymous hemianopia coz the optic radiation is affected.

**Sublentiform** → it will affect auditory radiation causing bilateral partial deafness more in the contralateral ear.

Blood supply applications :

what is the blood supply of caudate ? striate branches of middle cerebral thalamus ? post cerebral and parts of ant and post choroidal arteries.

retrolentiform ? part of anterior choroidal artery

### Figure IV page 79 :

looking at the key the section passed through the frontal lobe , genu or body of corpus collosum , thalamus , and because it is angled it passed through the posterior part of midbrain (tectum) and in the back it passed through the cerebellum , it didn't pass through the occipital or parietal lobes . This section only passed through the temporal and frontal so which parts of lateral ventricle it has ? ant and inf horn.

How can we recognize the inferior horn ? through the hippocampus.

As long as we see the **cerebellum** this means that the section **didn't** pass through the occipital lobe nor the posterior horn of the lateral ventricle .

so we can see the frontal (A) and temporal lobe (W) inferior horn , cerebellum, genu or body of corpus collosum(D) the doctor will give us a hint for example if the cavity is the body of lateral then it is the body of corpus collosum and body of caudate , anterior limb of internal capsule (J) thalamus (O) lentiform(M+N) and post limb (L), retrolentiform behind the lentiform near the inferior horn and tectum (superior colliculus T) which is the post part of mid brain with its 4 colliculi .

if the inferior horn of lateral ventricle expanded it will press on the fibers of the retrolentiform which has the optic radiation contra homonymous hemianopia.

This section shows all of the following except :

post limb of internal capsule (yes) , inferior horn of temporal lobe (yes) , cerebellum (yes) either genu or body of corpus collosum ( yes)

occipital lobe (no coz it shows the cerebellum ) , splenium (no because as long as we see the cerebellum this means that the section is **below** the splenium )

### **Figure v page 80 :**

using the key this section passed through the frontal lobe part of ant horn midbrain and cerebellum not through parietal, occipital or insula.

we can see the **midbrain(L)** instead of the thalamus we also see the hippocampus(T) and inferior horn so it passed through the frontal

(A) and temporal lobes (R) and part of ant horn (X) head of caudate (V) and putamen (U), between them the anterior limb there is no posterior limb instead of it we have crus cerebri (which is also known as cerebral peduncle) substantia nigra and tectum, cerebellum (O) we can't see red nucleus here.

Does this section have occipital lobe ?

No, only frontal and temporal because we have the cerebellum .

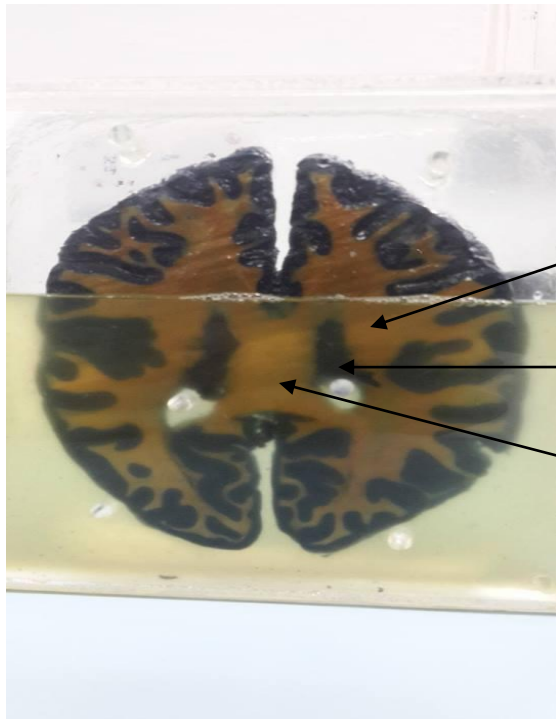
The crus has only motor fibers corticospinal, corticobulbar and corticopontine with its sub types {frontopontine, temporo-pontine, occipitopontine, parietopontine}

Superior cerebellar peduncle connects the cerebellum to midbrain it contains the dentato rubro thalamo cortical tract (Q).

### **Figure VI page 81 :**

Notice from the key this is the lowest section it passed through the frontal (B) & temporal (G) lobes pons (M) and cerebellum (P) pons has crossed fibers forming the middle cerebellar peduncle (MCP) which receives axons of pontine nuclei of opposite side, it is also part of the **cerebrocerebellum**.

Practical sections :

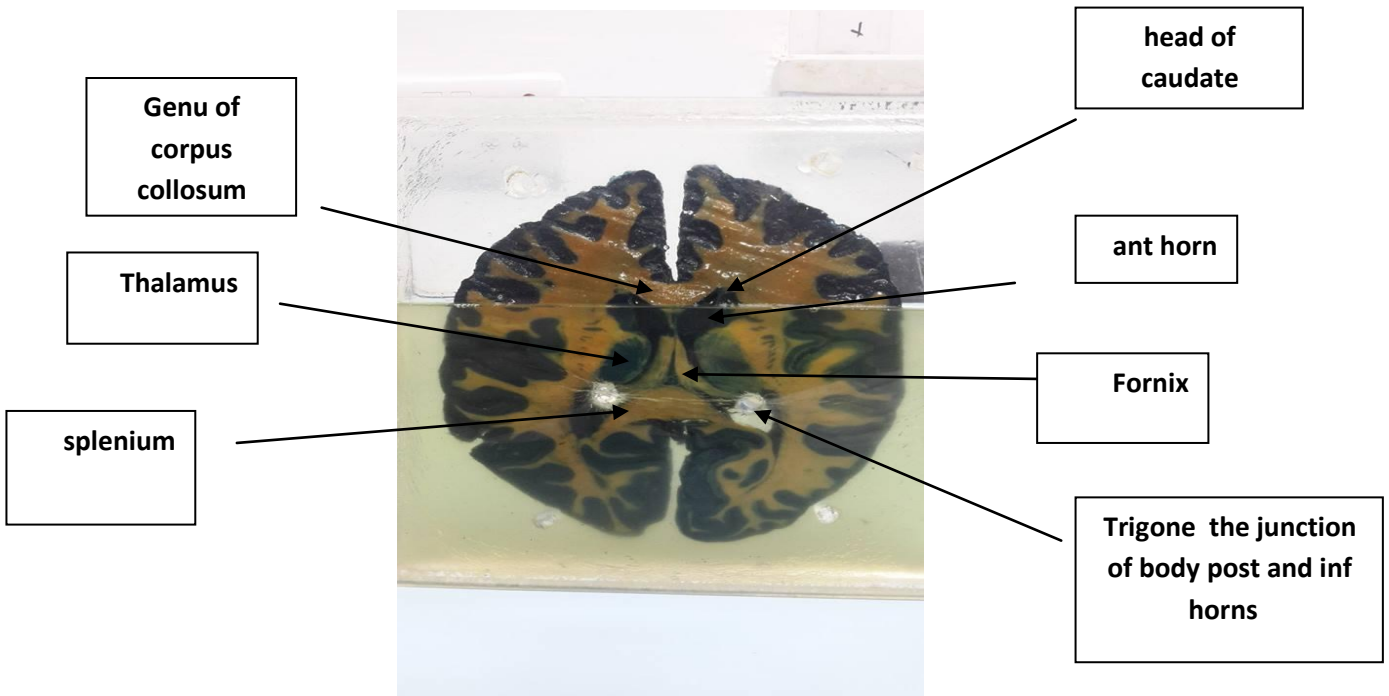


Corona radiata

lateral ventricle

corpus callosum

No thalamus or lentiform so it is for sure corona radiata that is above the internal capsule .



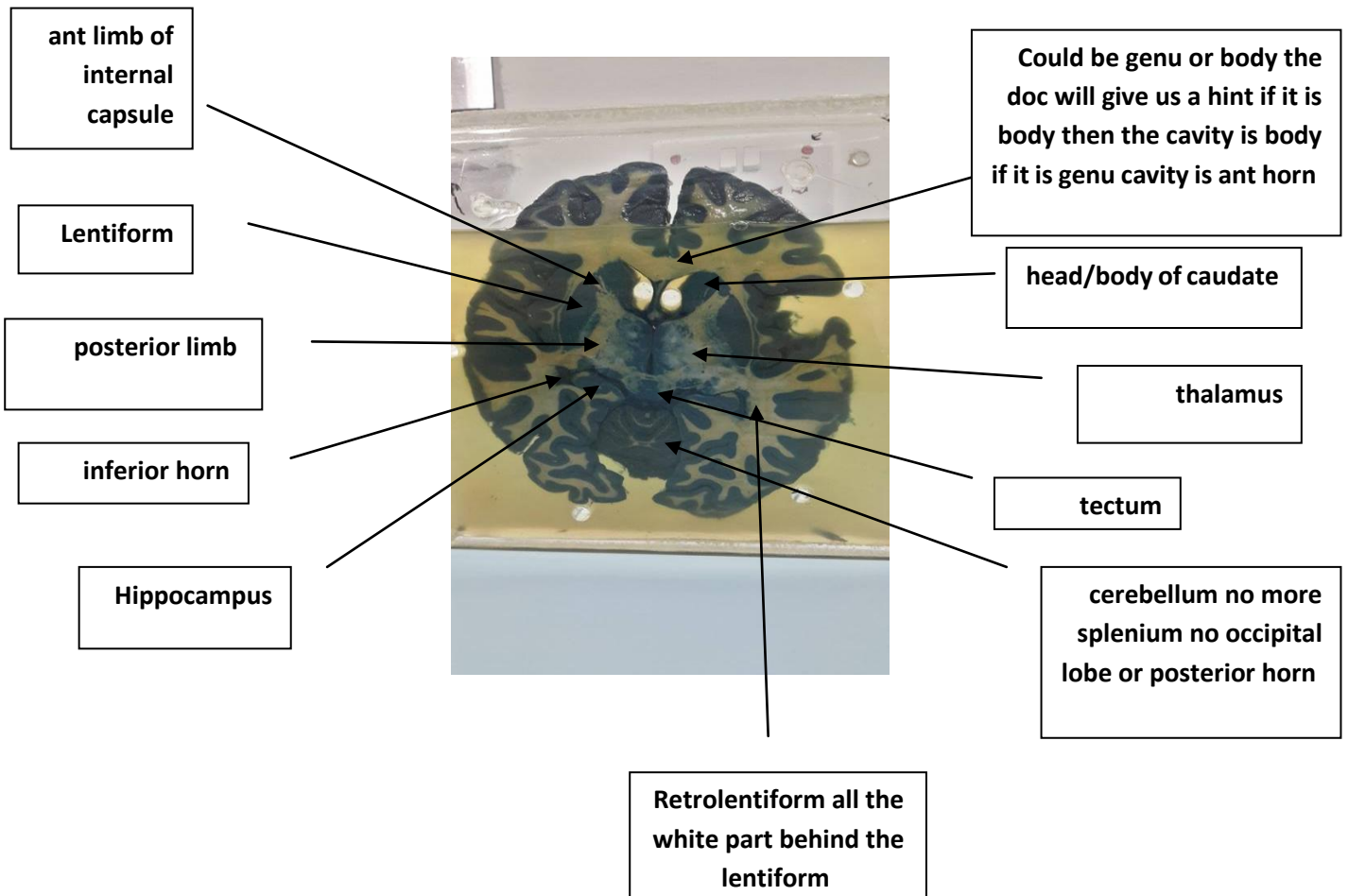
head of caudate

ant horn

Fornix

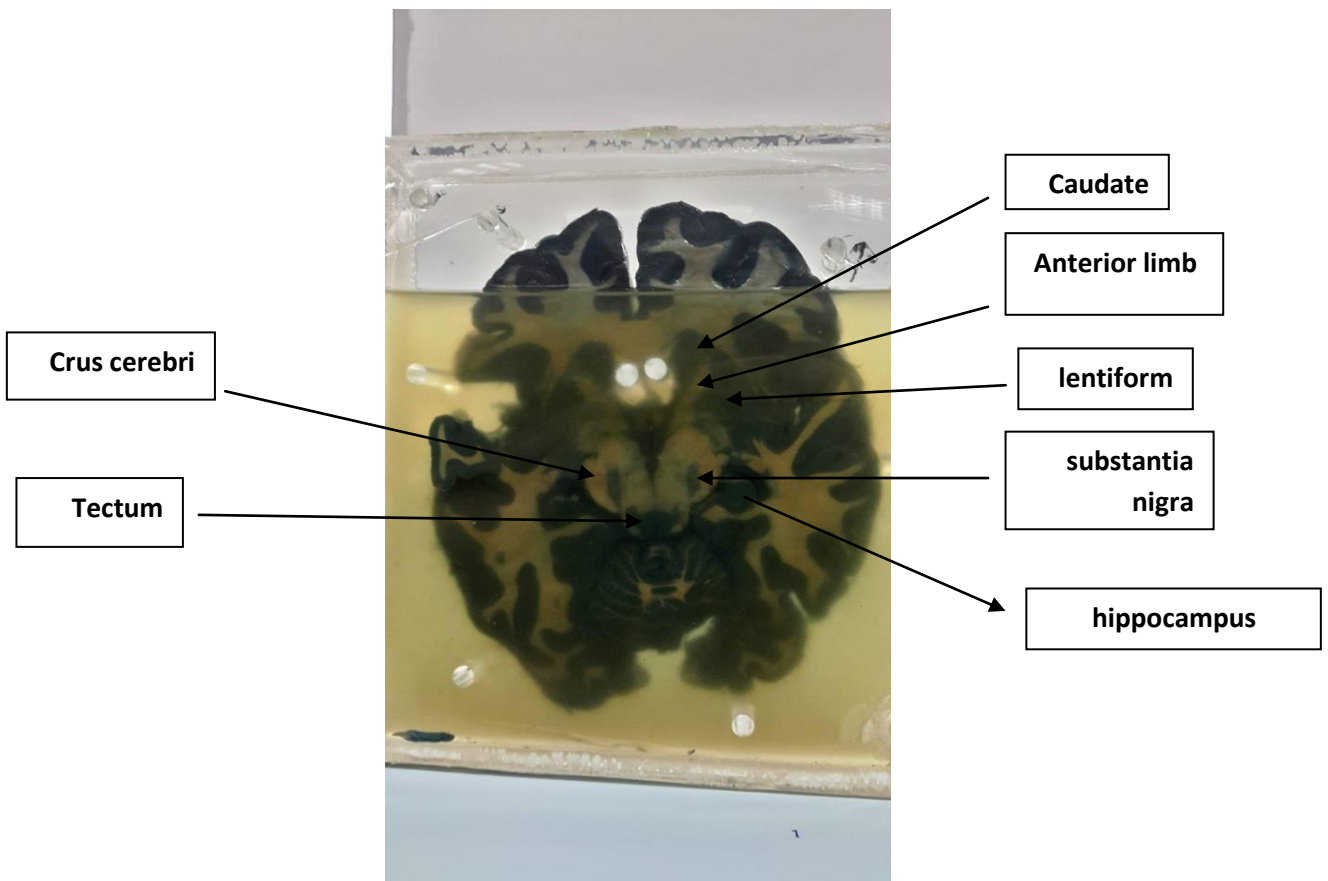
Trigone the junction of body post and inf horns

What runs in the lower part of occipital lobe it is trigone rather than posterior horn . Can we recognize lentiform or internal capsule here? NO



This section is diagonal it passed through the thalamus and the tectum of the midbrain also passed through the temporal (we can see the **hippocampus** and **inferior** horn) and frontal lobes **NOT the occipital lobe coz we can see the cerebellum also 4 parts of internal capsule .**

the larger the cerebellum appears the lower the section



In this section instead of passing through the thalamus it passed through the **midbrain and** instead of posterior limb **crus cerebri** the post limb has sensory and motor the crus only motor. Still we can see the lentiform and caudate so anterior limb of internal capsule is present but we don't have lentiform so no posterior limb. It also passes through the cerebellum so no occipital lobe or splenium only frontal and temporal lobes (hippocampus is present).

This section shows both ant and post limbs of internal capsule ?  
False only the anterior.

crus cerebri has the corticospinal ,corticobulbar ,corticopontine with all its parts .

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