-[Histology of pituitary gland](http://dentistry2012.weebly.com/uploads/2/3/5/2/23526594/histology_of_pituitary_gland_prac.pptx)

Lab#8

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Pitutary gland is divided into two parts

1)adenohypophysis

2)neurohypophysis

-adenohypophysis is subdivided into 3 parts:pars distalis(the anterior lobe of pituitary gland),pars intermedia and pars tubralis.

-neurohypophysis is subdivided into 3 parts:pars nervosa(the posteror lobe of pituatry gland),infundibular stalk and median emenince.

**Slide #1**:

we can see lightly-stained part and darkly-stained part

The lightly stained part is neurohypophysis and the darkly stained part is adenohypophysis.

The lowest part of the lightly stained area is pars nervosa(the largest),then we have the straight part which is the infundibular stalk,the end of the infundibular stalk is median eminence.

The lowest part of the darkly stained area is pars distalis.

The white area between pars distalis and pars nervosa>>>primitive cleft

Around this cleft is pars intermedia which is a transitional area.

Around the infudibular stalk,we can see pars tubralis but mostly anterior to it.

Slide#2:

another section if pituitary gland

Again the lightly stained area is neurohypophysis and the darkly stained area is adeonohypophysis.

In the lightly stained area,we can see the infundibular stalk and anterior to it there is the darkly stained pars tubralis.

The biggest part of the darkly stained area is pars distalis which is the anterior lobe of pituatry gland.

In this section, around the gland there is a C.T capsule.

We can see a transitional area between pars distalis and nervosa which is pars intermedia,we can see that its appearance is different from both pars nervosa and pars distalis, this area is pars intermedia.

In pars intermedia there is colloid-containing follicels.

We can consider the area is pars intermedia if we see one of the following:primitive cleft or\and colloid containg follicles….or if the general appearance is different from both pars nervosa and pars distalis.

Slide#3:

From left to right:pars distalis>>pars intermedia(colloid containg follicles)>>pars nervosa

Slide#4:

From left to right

Pars distalis>>>pars inermedia>>>pars nervosa

In pars intermedia,we can clearly see the colloid follicles.

In humans,The function of pars intermedia is unknown but in frogs and fish these cells around the colloid secret MSH(melanin stimulating hormone).

In pars nervosa,the cells with nuclei(oval in shape) are called pitucytes,these are modified glial cells(schwan cells)

Pars nervosa contain axons that are supported by pitucytes

The cell bodies of these axons are in the hypothalamus.

At the end of these axons,hormones will be stored(oxytocin and ADH).

These hormones are originally produced by the cell bodies in the hypothalamus and they travel along the axons and reach the end of the axons to be stored in pars nervosa

When the end of axons are filled with these two hormones,we called them hearing bodies.

Upon stimulation,hormones will be secreted from pars nervosa into capillaries.

In this section we can also see cells of pars distalis

Pink in color>>acidophills

Blue or purple in color>>basophills

The cells with lightly stained cytoplasm>>chromophobes(they cannot take up stain or can be lightly stained.

Slide#5 from left to right

Pars distalis>>pars intermedia>>pars nervosa

This section shows that pars intermedia is thick( it is not always thin layer)

Pars intermedia is especially thick in fish and frogs because it is active in secretion of MSH

The Blue circles in pars intermedia are colloid containing follicles.

Slide #6

The two sections on the left side are from pars distalis

Slide #7:

This section is also from pars distalis,we can see the three types of cells:

1)acidophilis:red to pink in color

2)basophilis:light blue

3)chromophobes:white because they don’t pick up stain

Slide #8:

another section from pars distalis

1)acidophils: pink in color

2)basophilis: dark purple

3)chromophobes: in this section they appear purple but lighter than basophils

Slide#9

:section from pars distalis

It shows the three types of cells

Acidophils>>red to pink in color

Basophilis>>dark purple

Chromophopes>>light blue(different from both basophilis and acidophilis)

Slide#10

From left to right

Chromophobes>acidophilis>basophils>section from pars nervosa(lightly\_stained),it looks like a neural tissue,these cells are pitucytes(oval in shape)

Slide #11

Section that shows (from left to right)

Pars nervosa>>pars intermedia>>pars distalis

Slide #12 :

two sections from pars nervosa

The one on the left side:we can see axons running across the section,we can see nuclei of pitucytes(oval in shape),we see something larg and rounded that looks like a cell but is not a cell,these are hearing bodies where hormones(oxy,ADH)are stored at the end of axons.

The section on the right side: show hearing bodies with special sliver stain

They stain dark-black with this special stain

In this section we can also see the nuclei of pitucytes.

Hearing bodies contain secretory granules

Section#13:

This is electron microscopy image of pars nervosa

In the upper part of the picture there is round white circles>>these are pitucytes

In the middle part>>hearing bodies with secretory granules

Below hearing bodies>>capillary(endothelial cells)

Slide#14

this is electron microscopy image of pars nervosa

We can see hearing bodies with secrotory granules

Hearing bodies have diffirent sizes,they can be very small or larg

On the left side of this section,there is lumen of a capillary(endothelial cells in the wall of capillary)

Capillaries of endocrine tissues are always fenestrated.