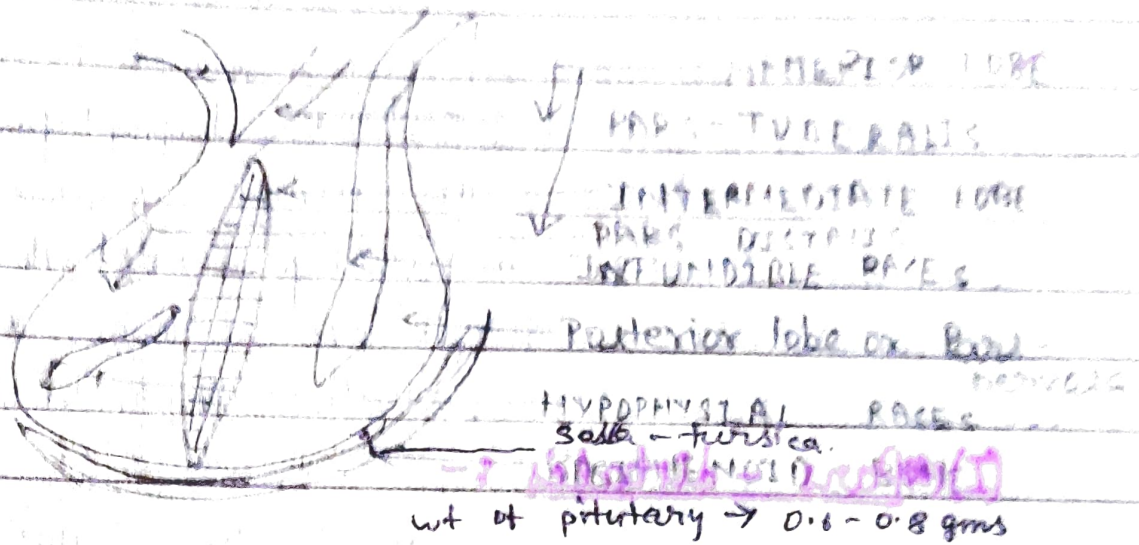


* Pituitary gland *



- \rightarrow Pituitary gland was discovered by Obvassier and term pituitary was given by A. vesalius.
- \rightarrow Pituitary gland is present at basal part of brain in depression of basi sphenoid bone of skull. This depression of bone is called sella-turcica.
- \rightarrow Pituitary gland is made up of two parts
 - Nervous part &
 - Non-nervous part.
- Nervous part is called neurohypophysis and it developed from outgrowth of infundibulum of brain. Non-nervous part is called adenohypophysis and it developed from Rathker's pouch (Bucco-ectodermal-pouch).
- \rightarrow Pituitary gland is made up of three lobes.

- Posterior lobe

- Intermediate lobe.

In case of mammals intermediate lobe is absent. Anterior lobe is further divided into pars-tuberalis and pars-distalis.

→ Both anterior lobe and intermediate lobe are non-nervous part but intermediate lobe posterior lobe is nervous part.

→ Pars-distalis contain a special type of blood-vessel called hypophysial vessels.

It collects the blood from hypothalamus of brain. Similarly, posterior lobe also contain infundibular vessels. It is communicated with infundibulum of brain.

13/07/06 (I) (A) Pars - distalis :-

It is made up of two types of cells.

(1) Chromophobe cell (ii) Chromophilic cell.

→ Chromophobe cell :- It is not stained with basic dye and acidic dye.

Its function is till unknown.

→ Chromophilic cell :- On the basis of stain it is of two types.

(a) Acidophilic cell (b) Basophilic cell.

(a) Acidophilic cell :- It is of two types.

(i) Lactotrophic cell - It is stained with azan-dye
(ii) Somatotrophic cell - It is stained with Azocarmine

(b) Basophilic cell :- It is of three types.

Thyreo-trophic cell } stained with
Adreno cortic trophic cell } Passchierf dye.
Gonado trophic cell }

(B) Pars-tuberalis:-

It is made up of single row of basophilic columnar cell.

(II) Intermediate lobe:-

It is made up of vesicles of irregular shape. All vesicles are fulfilled with colloidal solution with unknown function.

(III) Posterior lobe:-

It is made up of many star shaped cell called pituicytes. It also contain mast cell, blood vessel, lymph vessels etc.

* Function

(A) Anterior lobe-

It ~~secreted~~ secretes following hormone.

(i) Thyrotrophic hormone (T.T.H) - It stimulates the thyroid gland for secretion of thyroxin hormone.

(ii) Adreno-cortico trophic hormone (ACTH) - It stimulates the cortical part of adrenal gland for secretion of many hormones collectively call cortin.

(iii) Growth or somato trophic hormone-

(a) It promotes the protein synthesis.

(b) It increases ribosomal activities.

(c) It helps in formation of cartilage and bone by formation activities of chondroblast & osteoblast.

→ Over production of this hormone causes gigantism or gignatism (more than 7ft in height) and lesser production causes dwarfism (< 3ft)

→ Hyper secretion of this hormone causes acromegely. In this case lower jaw is highly developed and adult look like chimpanzee.

(iv) Gonadotrophic hormone :- It is mixture of following ones.

(a) Follicle stimulating hormone (F.S.H) - In case of female, it causes oogenesis and maturation of graffian follicles. In case of male, it causes spermatogenesis.

(b) Luteinizing Hormone (L.H) -
1. It stimulates the wall of ovary and graffian follicle for secretion of estrogen hormone.
2. It causes ovulation i.e. release of ovum from graffian - follicle.
3. It changes ruptured graffian - follicle into a glandular structure called corpus luteum. It secretes progesteron hormone. In case of female both estrogen and progesteron control the sec. sexual character.

In case of male it stimulates the leydig's cell of testis for secretion of androgen hormone. It controls secondary sexual character of male.

(c) Prolactin or lactogenic or Lactotrophic hormone :-

1. It causes lactation i.e. formation of milk in mammary glands.

2. It controls the balance diet of mother milk. It maintains the structure and function of corpus - luteum.

(v) Dibetogenic hormone :- It controls the metabolism of carbohydrate.

(vi) Ketogenic hormone :- It controls the metabolism of ketonic body in blood lipolysis.

(B) Intermediate lobe :- It secretes only one hormone called melanin-stimulating hormone (M.S.H). It is responsible for colour changing of body surface.
eg. Garden lizard, frog, fish.

(C) Posterior lobe :- It secretes following two hormones

<1> Vasopressin or Antidiuretic Hormone (A.D.H.) -

It controls reabsorption of water from distal convoluted tubules of nephron. Hyposecretion of this hormone increase volume of urine causing diabetes insipidus.

<2> Oxytocin or Pitocin :-

1.- During parturition it helps in expansion of pubic symphysis for easy delivery. It helps in propulsion of foetus by contraction & relaxation of uterine muscles.

2.- It causes ejaculation of milk by contraction of myoepithelial part of breast.

Due to many function it called as master of gland. But it is also controlled by hypothalamus of brain.