Pituitary gland

Red: important.
Black: in male|female slides.
Gray: notes|extra.

Editing file

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➢ OBJECTIVES

- The **microscopic structure** of the different parts of the **PITUITARY GLAND** in **correlation** with their **functions**
- The **HYPOPHYSEAL PORTAL CIRCULATION**;
  - Components & significance

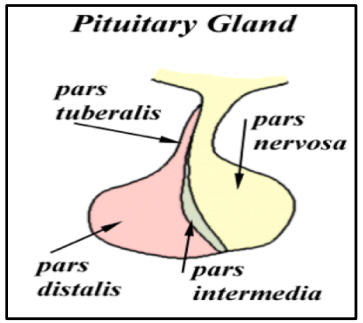
➢ Components of pituitary gland:

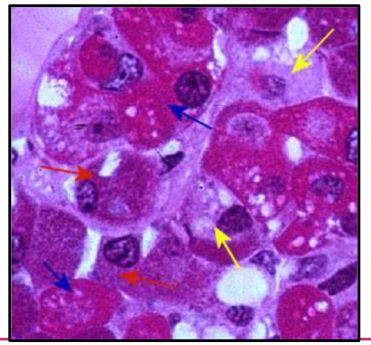
I- Adenohypophysis Cerebri

1- Pars Distalis (pars anterior):

Types of parenchymal cells:

- **Chromophils:**
  - ➢ **Acidophils:**
    1. Somatotrophs (GH cells). Growth hormone
    2. Mammotrophs (Prolactin cells):Increase during lactation. Milk formation hormone
  - ➢ **Basophils:**
    1. Thyrotrophs (TSH Cells). Thyroid stimulated hormone
    2. Corticotrophs (ACTH cells). Adrenocorticotropic hormone
    3. Gonadotrophs (Gonadotropic cells) (FSH, LH). Luteinizing hormone (LH) Follicle Stimulating Hormones (FSH)
- **Chromophobes**, may represent:
  - ➢ stem cells.
  - ➢ degranulated chromophils.
  - ➢ degenerated cells.





Blue arrow: acidophils
Red arrow: basophils
Yellow arrow: chromophobes

2- pars Tuberalis

3- Pars Intermedia

II- Neurohypophysis Cerebri

1- Median eminence

2- Infundibulum: Neural (Infundibular) Stalk (stem)

3- Pars Nervosa:

Components:

- **Unmyelinated axons** of secretory neurons situated in supraoptic & paraventricular nuclei (i.e. Axons of hypothalamohypophyseal tract)
  - **Function: Storage** & release of:
    1. Vasopressin (ADH); ***by supraoptic nuclei***
    2. Oxytocin; ***by paraventricular nuclei*** Oxytocin work in mammary gland for milk ejection (by contraction of myoepithelial cell that located around the acini)
- **Fenestrated blood capillaries** with diaphragm
- **Herring bodies**
  - Are distentions of the axons in p. nervosa.
  - Representing accumulation of neurosecretory granules at axon termini and along the length of the axons in p. nervosa. Oxytocin and ADH hormone is stored in Herring bodies
- **Pitucytes:** are glial-like cells in p. nervosa.
  - **Structure:** Have numerous cytoplasmic processes.
  - **Functions:** Support the axons of the p. nervosa.

N.B. **No secretory or neuronal cells** in pars nervosa

QUESTIONS:

Q1: Which one of the following is Acidophils Chromophils?

a) Thyrotrophs b) Somatotrophs c) Gonadotrophs d) Corticotrophs

Q2: which of the following contains TSH cells ?

a) Thyrotrophs b) Somatotrophs c) Gonadotrophs d) Corticotrophs

Q3: Corticotrophs contains which cells ?

a) ACTH cells. b) TSH cells. c) GH cells. d) Prolactin cells

Q4: Which cells are present in pars nervosa?

a) Secretory cells b) Glial-like cells c) Neuronal cells d) All of them

Q5: The axons of hypothalamohypophyseal tract are situated in?

a) Supraoptic nucleus b)Suprachiasmatic nucleus c) Dorsomedial nucleus d) Lateral preoptic nucleus

Q6: Which of the following is the type of capillaries in pars nervosa?

a) Continuous capillaries b)Discontinuous capillaries c) Fenestrated capillaries d) Non-fenestrated capillaries

1- B
2- A
3- A
4- B
5- A
6- C

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