



الكلية : الطب

القسم او الفرع : الامراض والطب العدلي

المرحلة: الثالثة

أستاذ المادة : امراض

اسم المادة باللغة العربية : علم الامراض النسيجي

سم المادة باللغة الإنكليزية : pathology

اسم المحاضرة الحادية عشر باللغة العربية: امراض الغدد الصماء/ المحاضرة الحادية عشر

اسم المحاضرة الحادية عشر باللغة الإنكليزية : Endocrine pathology

Endocrine system can be divided into

1-Endocrine organs which are entirely dedicated to production of hormones e.g pituitary, thyroid , parathyroid & adrenal .

2- Endocrine components in clusters in organs having mixed functions, e.g. pancreas, ovary & testes.

3-Diffuse endocrine system, comprising scattered cells within organs or tissues acting locally on adjacent cells without entry into blood stream (Paracrine).

Hormonal stimulation :

1-endocrine 2-paracrine

3-neurocrine 4-autocrine.

PITUITARY GLAND

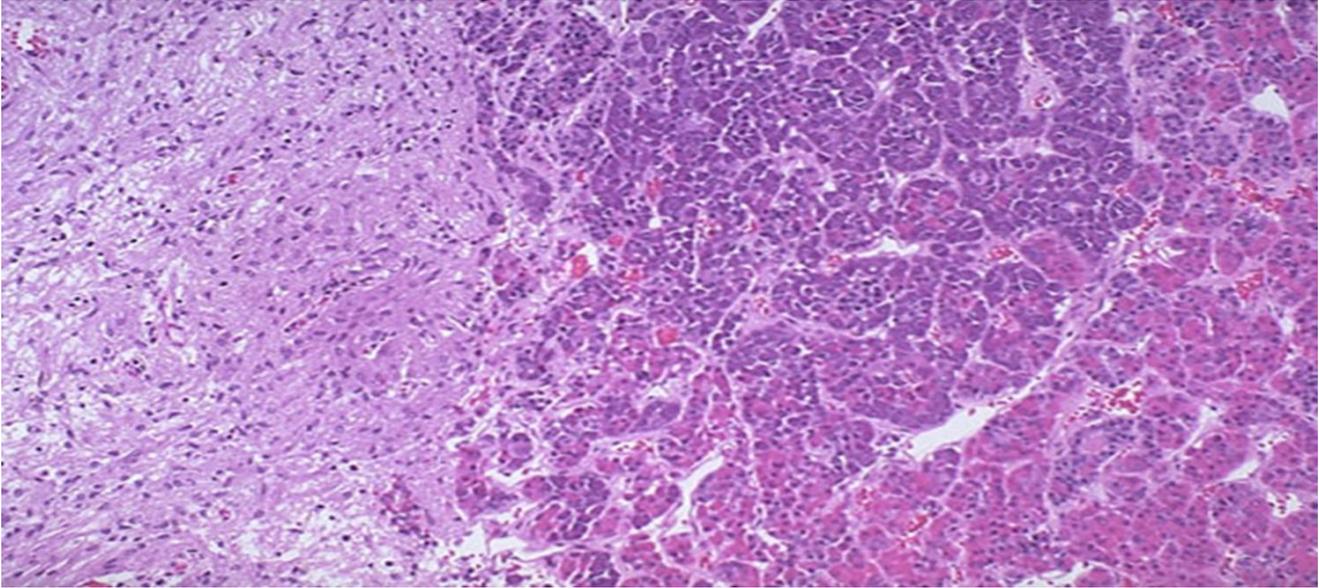
The pituitary lies in sella turcica,& weighs about 0.5 gm. It is connected to the HYPOTHALAMUS through its stalk. It is composed of :

A-ADENOHYPOPHYSIS- (80%) developed from Rathke's pouch. It is controlled under Hypothalamic-Hypophyseal feedback control.

Produce GH, PROLACTIN, ACTH, FSH, LH, TSH.

B- NEUROHYPOPHYSIS developed from the floor of the third ventricle & consists of modified glial cells & axons from cell bodies in hypothalamus.

Produce oxytocin &ADH



Pituitary gland cells

- **Somatotrophs cell- GH (growth hormon)**
- **Lactotrophs –Prolactin hormon.**
- **Corticotrophs –ACTH .**
- **Thyrotroph –TSH.**
- **Gonadotrophs –FSH & LH.**
- **Null cells : no hormone.**

Features common to all pituitary adenomas :

- 1- They are 10% of all intracranial neoplasms & 25% incidental , 30-50 yrs. of age.**
- 2- Primary pituitary tumors are almost always benign.**
- 3- Radiological changes in sella turcica .**
- 4- May or may not be functional(20%). If functional (80%), the clinical effects are secondary to the hormone produced.**

5- More than one hormone can be produced from the same cell (monoclonal).

6- Local effects are due to pressure on optic chiasma (visual disturbance), or pressure on adjacent normal pituitary cells (reduce hormone production).

Morphology of pituitary adenomas:

Gross: -- Well circumscribed, may be invasive in up to 30% (no definite capsule present).

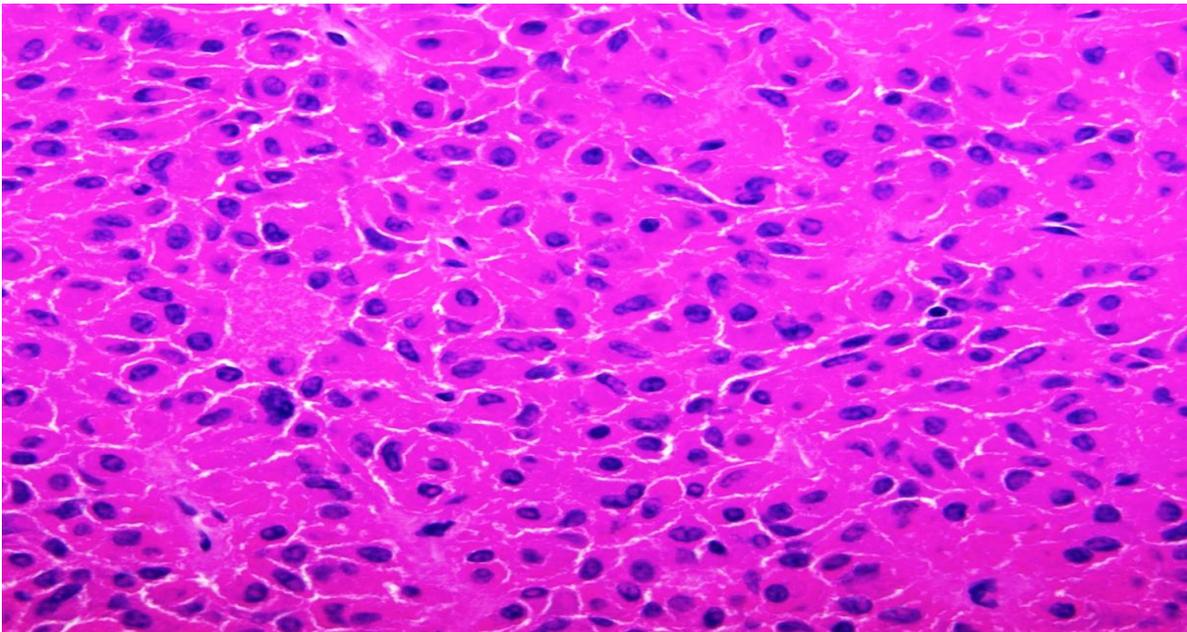
-- Size 1cm. or more, especially in nonfunctional tumor.

-- Hemorrhage & necrosis (pituitary apoplexy).

-- Radiological abnormalities (on Sella turcica).

Microscopic: (monoclonal –single cell type).

-- Uniform polygonal cells, acidophilic, basophilic chromophobe cytoplasm, with little connective tissue, rare or absent mitosis .



Types of Pituitary Adenomas :

1- PROLACTINOMA :

30% of all adenomas, weakly acidophilic cells.

- * Functional even if small, but related to size.
- * Any mass in the suprasellar region may interfere with normal prolactin inhibition (normal inhibitory influence of hypothalamic dopamine) → ↑ Prolactin (*STALK EFFECT*)
- * C/P: Amenorrhea, galactorrhea & female infertility .

2- Growth hormone secreting adenoma : *Second common*

- * Composed of granulated ACIDOPHILIC cells
- * May be mixed with prolactin secretion.
- * Symptoms delayed so large (macroadenoma).
- * *GIGANTISM* (childhood) or *ACROMEGALLY*(adult).
- * Other symptoms include diabetes, ↑BP, HF.....etc

3- Corticotroph cell adenoma : *Microadenomas*

- * Chromophobe or basophilic cells
- * Functionless or Cushing 's Disease (↑ ACTH)
- * Large adenomas develop if adrenal is removed for any reason → *Nelson's Syndrome*

Other Miscellaneous Neoplasms :

1- Null Cell Adenoma - (20%) Nonfunctioning & most are chromophobe, produce mass effect only.

2- Gonadotroph producing LH &FSH- (10-15%)- Function is minimal , mass effect produced.

3- TSH producing ,(1%) rare cause of hyperthyroidism

4- Pituitary carcinoma - Extremely rare, diagnosed only by metastases. (not by capsular invasion)