

dr. suhail bakar

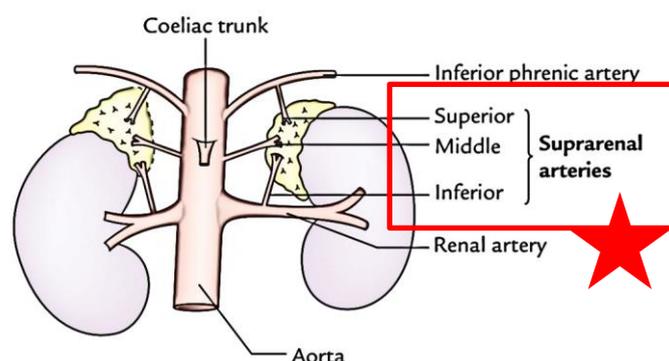
THE ADRENAL GLAND

Lecture2 part 2

(SUPRARENAL GLAND)

⊙ **Endocrine tissue is** : The tissue that receive blood supply and the best examples of it is adrenal gland. Why? Because the adrenal gland is supplied by 3 three arteries and drains by a Single vein.

⊙ Note how much important is the Endocrine tissue because it is receive The **greatest amount of blood supply**.



⊙ **Renal gland consists of:**

➤ Outer cortex of glandular tissue.

➤ Inner medulla of nervous tissue.

◆ The **cortex itself divided into three zones:**

1- zona glomerulosa (ALDOSTERONE)

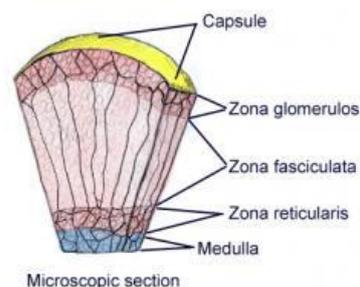
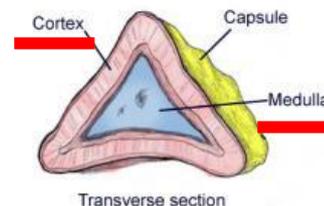
2- zona fasciculata (CORTISOL)

3- zona reticularis. (SEX HORMONES)

◆ Each zone secretes its own set of hormones.

◆ Once we talked about adrenal medulla we means catecholamine CA.

(Catecholamines are hormones made by your adrenal glands, Examples include dopamine; norepinephrine; and epinephrine (adrenalin or adrenaline).



● **Incidentaloma:** is an incidentally discovered of adrenal mass. (Incidentally found asymptomatic tumors mass. Such imaging findings as the use of sectional CT scan imaging or ultrasound for another condition. Unsuspected tumor in one or both of your adrenal glands. "This type of tumor is usually found by chance during an imaging test")

Exam Case scenario Q: Patient comes to ER complaining from pain in his flank loin-pain. The doctor order CT scan to look for +ve positive stone, the urologist noticed during CT scan that the patient have a mass on adrenal gland. The patient went to endocrinologist surgeon. **HOW TO APPROACH**
مهم جدا **THIS PATIENT WITH A MASS ON ADRENAL GLAND? (very imp)**

✱ 1-The FIRST thing to do is → **Assess if it was functional or not, by doing biochemical profile investigations.** (Adrenal medulla secretes Catecholamines so I need to exclude this.)

✱ So what's your NEXT STEP if you discovered a mass incidentally on a CT scan???? → To look for a **functional biochemical profule** → Catecholamines (**CA: aldosterone , cortisone, androgens.**)

→ 2- Is this mass Benign or Malignant?

By the measurement of **its SIZE :**

▶ **BENIGN** → LESS than 4cm. (OBSERVE AND FOLLOW UP SIZE)

▶ **Malignant** → MORE than 4cm. (Adrenalectomy) ☠

ADRENAL TUMORS:

Q1: How dose patient present to you with adrenal mass?

A1: it's usually found after renal CT scan to patient with lion pain or abdominal CT scan for some reason.

Q2: What is first thing to do?

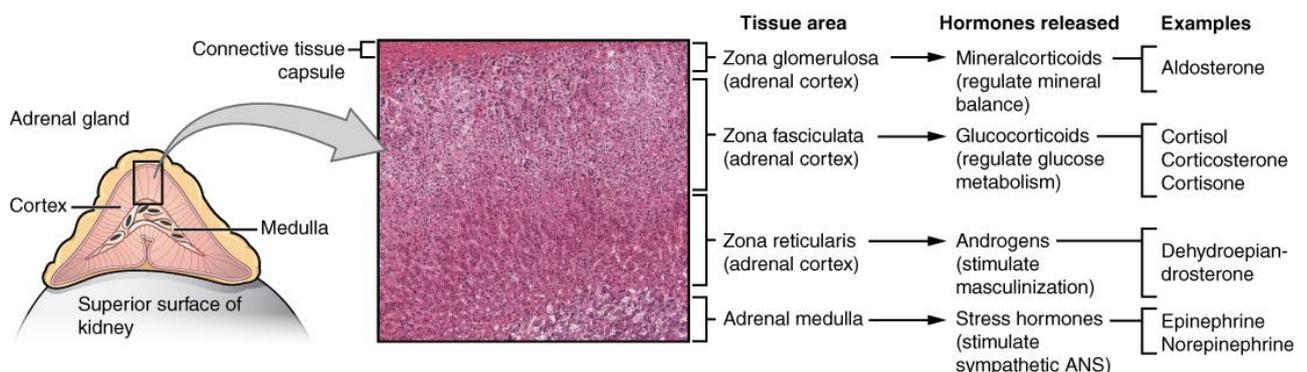
A2: To know whether it is functional / non- functional by doing biochemical profile.

◆ Adrenal gland → cortex+ (medulla → neuroendocrine cell → catecholamine → ↑ plasma metanephrine and Nor-metanephrine → Pheochromocytoma (tumor).

(Pheochromocytoma : are tumor of adrenal gland tissue. It results in the release of too much epinephrine and norepinephrine)

◆ CORTEX:

zona glomerulosa	zona fasciculate	zona reticularis
aldosterone	cortisol	androgen
↑ aldosterone increase in CONN'S DISEASE: HTN → (high BP) Hypokalemia → (KFT) Kidney function test	↑ cortisol increased in Cushing disease: -moon face -Buffalo hump. (a fatty hump between the shoulders.)	
Conn's Syndrome: Hyperaldosteronism is a disease in which the adrenal gland(s) make too much aldosterone which leads to hypertension (high blood pressure) and low blood potassium levels. Primary Hyperaldosteronism	Cushing syndrome caused by adrenal tumor.	



مهم ✨ If we do biochemical labs profile:

- ▶ ↑ cortisol : **Cushing disease.**
- ▶ ↑ aldosterone: **Conn's Syndrome.** → (HTN , Hypokalemia)→BP, KFT
- ▶ ↑ plasma metanephrine: **pheochromocytoma.**
- ▶ If Normal: nonfunctional mass→ Incidentaloma → we have to know benign or /malignant **by SIZE:**

⊙ Benign = 4cm > size (watchful)

⊙ Malignant= 4cm < size (adrenalectomy)

Pheochromocytoma:

- ⇒ 10% **Heredity (MEN2/3)**
 - ⇒ 10% **in Children**
 - ⇒ 10% **Bilateral**
 - ⇒ 10% **Malignant**
 - ⇒ 10% **Extra-adrenal**
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Question: patient come with a thyroid lump moves upon swallowing we did U/S to him and it is thyroid nodule. Then the patient told you he was having a stone in kidney and the radiologist had discovered adrenal mass accidentally during a CT scan radiological examination. Are you going to do thyroid surgery to him or not?

- 1) You have to make sure this mass is **NOT** pheochromocytoma, in order not develop malignant HTN during anesthesia → death.
- 2) Then if it was Pheochromoy → first Adrenalectomy → then Thyroidectomy.

. ☞ *Believe in yourself push your limits and do whatever it takes to conquer your goals*

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