ADRENAL INCIDENTALOMA


Take home points:
1. Adrenal masses (incidentalomas) are common and they increase in frequency with age.
2. Adrenal masses may be benign (non-functional), malignant (primary or mets), or functional (pheo, Conn’s, or Cushing’s).
3. Size matters as does the amount of attenuation in determining whether the mass is benign or malignant.

How common are adrenal masses?
- At autopsy, 3% of patients > 50 years old have an adrenal mass (the older you are, the more likely you are to have an adrenal mass).
- 1/4000 adrenal masses are malignant.

What are the general categories of adrenal masses?
- Benign: adenomas (non-functional), lipomas, hematomas, cysts
- Functional tumors: pheochromocytoma, mineralocorticoid-secreting tumors (Conn’s syndrome), and cortisol-secreting tumors (Cushing’s disease)
- Malignant tumors: primary adrenal cortical carcinoma or metastatic disease

Does size matter?
- Yes. Adrenal cortical carcinoma accounts for 2% of tumors that are < 4 cm, 6% of tumors 4-6 cm, and 25% of tumors > 6 cm in size. Therefore, if the adrenal mass is large, biopsy it.
- Yes. Masses < 3 cm are rarely functional tumors. Therefore, they can be followed with serial imaging.

What about the radiologic characteristics?
- On CT, if the mass has an attenuation value of < 10 HU (Hounsfield units) and is homogenous with a smooth border, it is very likely that the mass is benign (especially if it is < 4 cm).
- Who is Hounsfield? He won the nobel prize for the discovery of computed tomography!

When should you biopsy an adrenal incidentaloma?
- Biopsy is definitely indicated if the size > 6 cm.
- History of cancer (lung, breast, kidney) with no other evidence of mets and heterogenous mass with a high attenuation value (> 20 HU).
- Note: before proceeding to biopsy, rule out pheochromocytoma to avoid inducing a hypertensive crisis.

How do you work up an adrenal incidentaloma to see if it is “functional”?
- **Cushing’s syndrome:** 1 mg dexamethasone suppression test (given between 11 pm and midnight) with cortisol checked the following morning at 8 a.m. If cortisol is < 5 mcg/dl, you’ve ruled out Cushing’s. It’s a very sensitive test. The problem is false positives. If the cortisol is > 5 mcg/dl, confirm the diagnosis with 24 urine cortisol.
- **Pheochromocytoma:** measure plasma free metanephrines (most sensitive test).
- **Mineralocorticoid excess:** test for this only if the patient is hypertensive. Hypokalemia and metabolic alkalosis are suggestive of this diagnosis. Confirm with plasma aldo/renin ratio.

When do you stop?
- In patients with tumors that remain stable on two imaging studies done at least 6 months apart and do not exhibit hormonal hypertension over 4 years, further follow-up may not be warranted.