

Pathology

Endocrine Practical Summary



439

اللهم لا سهل الا ما جعلته سهلا وانت
تجعل الحزن اذا شئت سهلا

DISCLAIMER!!!

This is done by the effort of students and may fall short of what will actually come on the exam. You are expected to have studied the theoretical material and the whole practical file before going into the exam.

This is to be used for revision, it contains what we have deemed important from what the doctor had said.

We are not held liable or responsible for any content in the exam out of this file.

Thank you and good luck.

Hashimoto's Thyroiditis

- ❖ This symmetrically small thyroid gland demonstrates atrophy. This patient was hypothyroid. This is the end result of Hashimoto's thyroiditis. Initially, the thyroid is enlarged and there may be transient hyperthyroidism, followed by a euthyroid state and then hypothyroidism with eventual atrophy years later. Complications like B cell lymphoma and Papillary carcinoma (PTC) might occur.
- ❖ **Pale, yellow-tan, firm & slightly nodular cut surface**

Microscopic

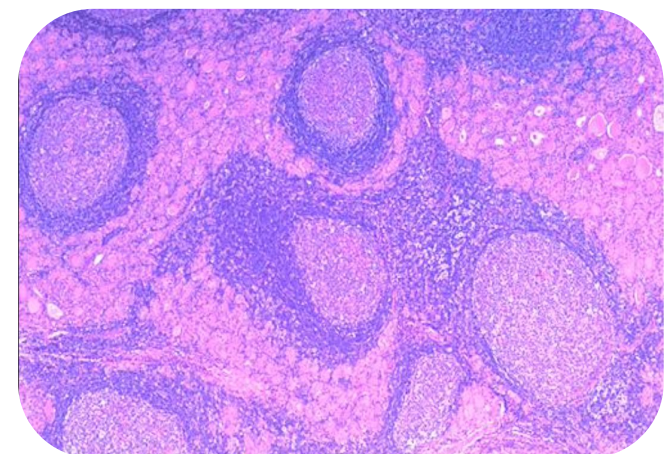
- ❖ This view shows an **early stage of Hashimoto thyroiditis with prominent lymphoid follicles containing large, active germinal centers**. In this autoimmune disease, antithyroglobulin and antimicrosomal (thyroid peroxidase) autoantibodies can often be detected in serum (Autoimmune T cell mediated).
- ❖ **Red arrow:** Hurthle cell or oxyphil cell change.
- ❖ **Blue Arrow:** Lymphocytic infiltration
- ❖ **Orange Arrow:** Lymphoid follicles germinal center.



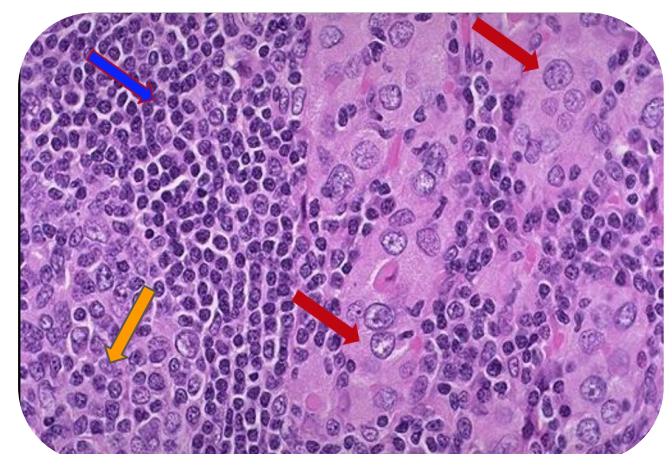
Hashimoto's Thyroiditis (GROSS)



Hashimoto's Thyroiditis (GROSS)



Hashimoto's Thyroiditis - LPP



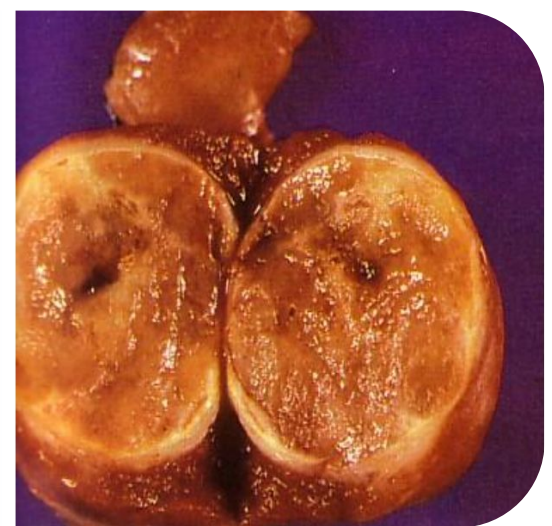
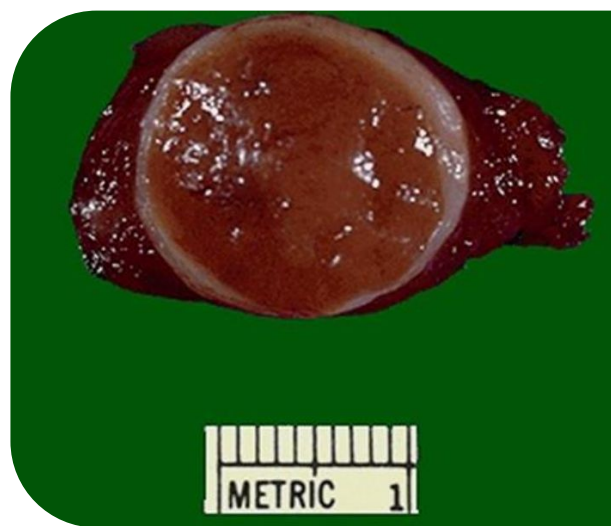
Hashimoto's Thyroiditis - HPF

Follicular Adenoma

- ❖ Central and slightly left sided thyroid nodule.

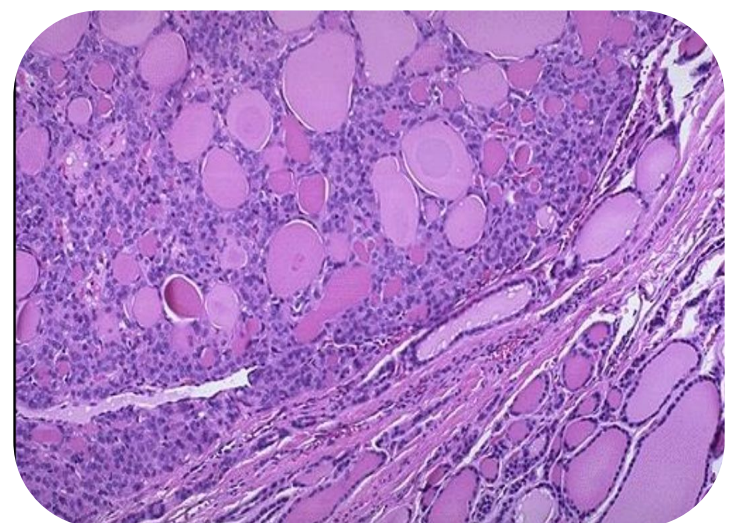
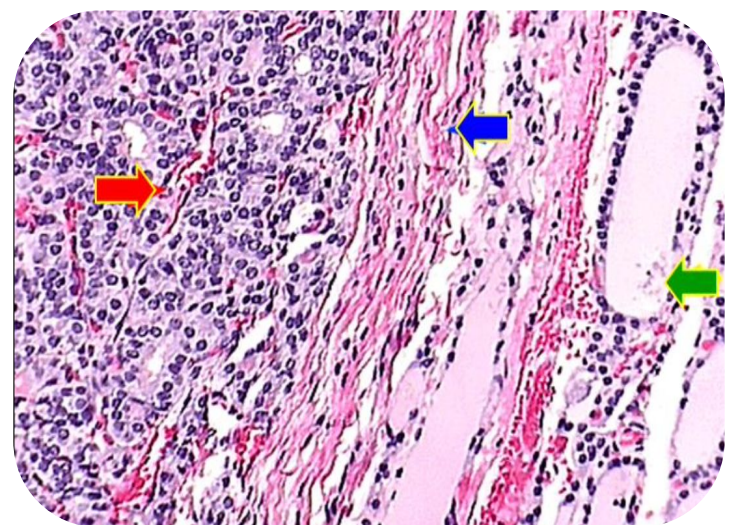


- ❖ Well circumscribed and encapsulated tumor nodule.
- ❖ Pale and yellowish cut-surface.



Microscopic

- ❖ **The Red arrow** is located within the adenoma showing Small neoplastic follicles with little colloid material.
 - ❖ **The Blue arrow** points to the capsule of the adenoma.
 - ❖ **The Green arrow** points to Normal thyroid follicles outside the tumor.
-
- ❖ Normal thyroid follicles appear at the lower right. The follicular adenoma is at the center to upper left. This adenoma is a well - differentiated neoplasm because it closely resemble normal tissue. Pathologic features that if present they will indicate malignant transformation are Capsular invasion and Vascular invasion.



Cushing Syndrome

- ❖ Left Pic: A child with Cushing syndrome as a result of Long-term corticosteroids treatment. Note the classical Moon face appearance
- ❖ Right Pic: Truncal obesity + Abdominal purple striae.



Cushing Syndrome Causes

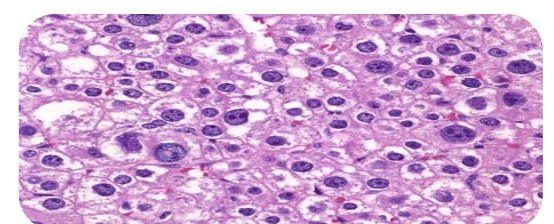
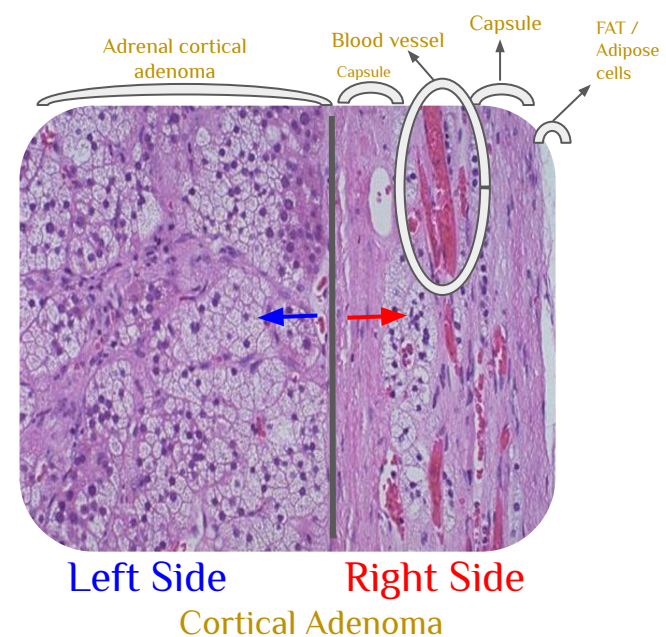
ACTH-DEPENDENT	<ul style="list-style-type: none"> ❖ Cushing disease (pituitary adenoma; rarely CRH- dependent pituitary hyperplasia) ❖ Ectopic corticotropin syndrome (ACTH-secreting pulmonary small-cell carcinoma, bronchial carcinoid)
ACTH-INDEPENDENT	<ul style="list-style-type: none"> ❖ Administration of exogenous glucocorticoids ❖ Adrenal adenoma ❖ Adrenal carcinoma ❖ Macronodular hyperplasia ❖ Primary pigmented nodular adrenal disease ❖ McCune-Albright syndrome

- ❖ This adrenal gland, removed surgically from a patient with Cushing syndrome.
- ❖ Cortical well encapsulated lesion surrounded by atrophic adrenal gland.



Microscopic

- ❖ Adrenal cortical adenoma composed of (neoplastic zona fasciculata cells at the left resembles normal adrenal zona fasciculata. The capsule of this benign neoplasm is at the right).
- ❖ There may be minimal cellular pleomorphism within adenomas.
- ❖ Malignant transformation: Large weight of the lesion (more than 300 g), Cellular anaplasia and invasion of the capsule. (Unlike Carcinoma 'Malignant' in Adenoma there is no invasion of the capsule)
- ❖ Hyperchromatic and enlarged nuclei.
- ❖ Prominent nucleoli.
- ❖ Both eosinophilic and clear cytoplasm of neoplastic cells.





QUIZ!

Case 1

A 33-year-old woman presents with a swelling in her neck, which she first noticed 2 months ago. Physical examination reveals a solitary, nontender nodule of the thyroid gland measuring 6 cm in diameter. Thyroid function tests are within normal limits. A biopsy of the nodule is shown in the image.

1. What is the Diagnosis ?

Follicular Adenoma

2. Describe Picture (A).

Central and slightly left sided thyroid nodule. (Don't say neck mass because we are talking about thyroid)

3. Describe the gross features in the Picture (B), and what's the color that you see.

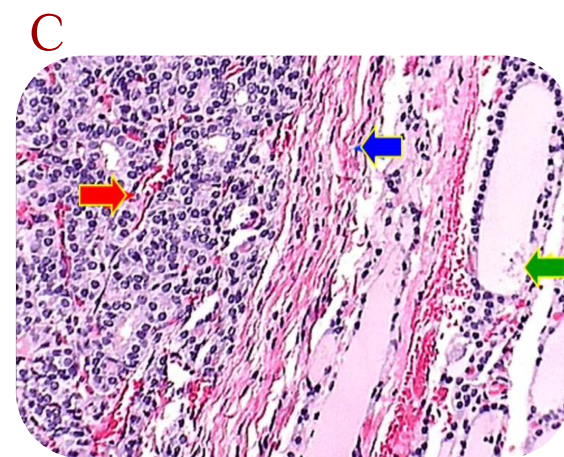
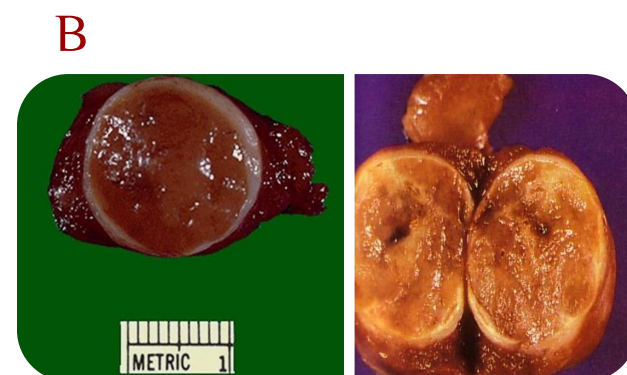
Well circumscribed and encapsulated tumor nodule. It's Pale and yellowish.

4. Describe the microscopic features (C).

Red Arrow; Adenoma showing Small neoplastic follicles with little colloid material.

Blue Arrow; It points to the capsule of the adenoma.

Green arrow; It points to Normal thyroid follicles outside the tumor.



Case 2

A 12-year-old boy with severe asthma presents with increasing weight, back pain for 9 months, and emotional disturbances. The patient is taking corticosteroids for his asthma. Laboratory studies reveal elevated serum levels of corticosteroids

1. What is the Diagnosis ?

Cushing Syndrome

2. Describe Picture (A&B).

A: Moon face appearance

B: Truncal obesity + Abdominal purple striae.



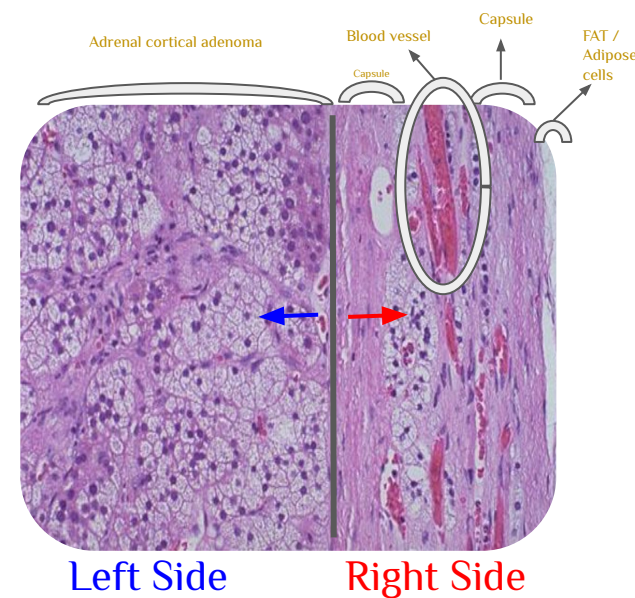
3. What are the causes for cushing syndrome?

1. Pituitary adenoma
2. Administration of exogenous glucocorticoids
3. Adrenal cortical carcinoma
4. Adrenal cortical hyperplasia

4. Describe the microscopic picture.

At the Left: Adrenal cortical adenoma composed of neoplastic zona fasciculata cells

At the Right: Capsule with some blood vessels in the middle,
Capsule is intact



Case 3

A 40-year-old woman complains of chronic constipation and anovulatory cycles for the last 8 months. Her vital signs are normal. Physical examination reveals peripheral edema and a firm, diffusely enlarged thyroid gland. Serum levels of T3 and T4 are abnormally low. A thyroid biopsy is shown in the image. What is the appropriate diagnosis?

1. What is the Diagnosis ?

Hashimoto's thyroiditis

2. Describe Picture (A).

Pale, yellow-tan, firm & slightly nodular cut surface

3. Describe the microscopic features (B).

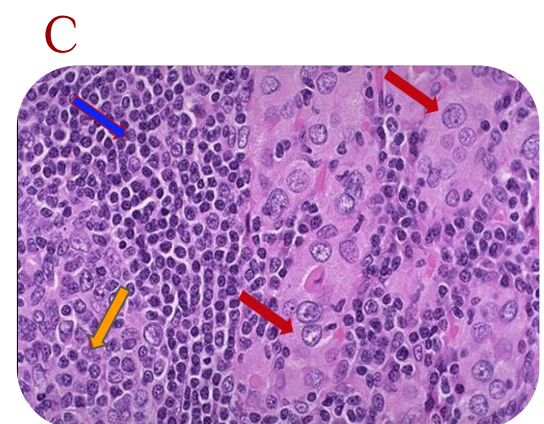
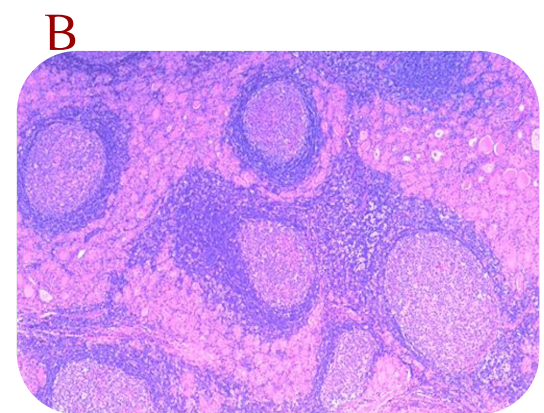
This view shows an early stage of Hashimoto thyroiditis with prominent lymphoid follicles containing large, active germinal centers.

4. Describe the microscopic features (C).

Red arrow: Hurthle cell or oxyphil cell change.

Blue Arrow: Lymphocytic infiltration

Orange Arrow: Lymphoid follicles germinal center.



Good Luck !