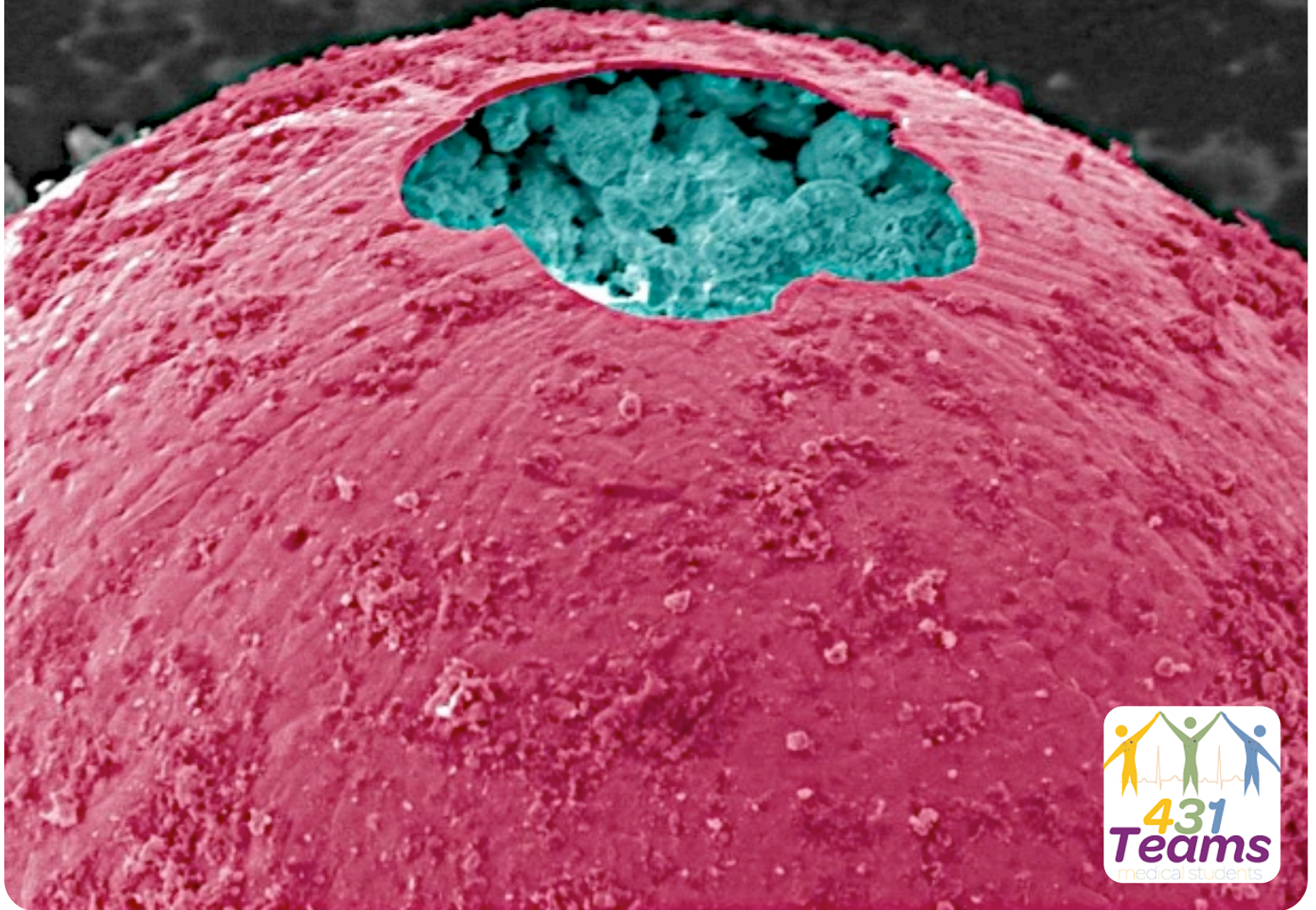


PATHOLOGY

TEAM



Leaders

Hazim Jokhadar & Sadeem Al-dawas

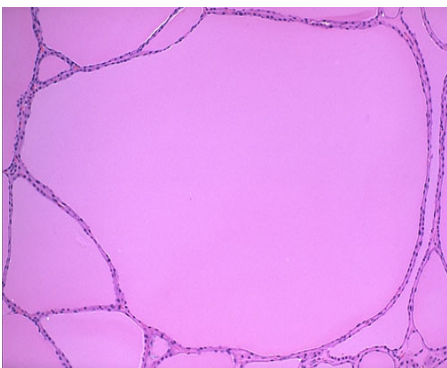
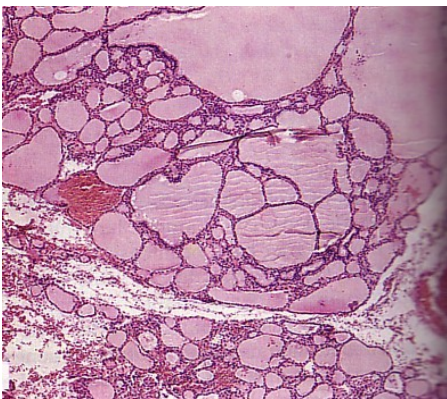
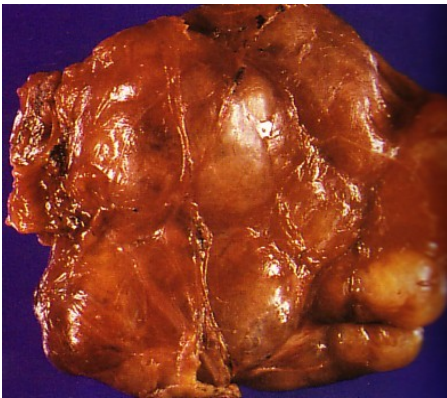
Done By

Sadeem Al-dawas

Revised By

Lama Al-Shwairikh

Case 1: Multinodular Goiter



Gross pictures show:

- Asymmetric enlargement.
- Multinodular.
- Haemorrhage.
- Cystic degeneration.

Microscopic section shows:

- The follicles are **irregularly** enlarged. Lined by single layer of benign follicular cells.
- Flattened epithelium, consistent with inactivity.
- Numerous follicles varying in size filled with colloid.

We can also see:

- Recent haemorrhage.
- Haemosiderin.
- **Calcification.**
- Cystic degeneration (not seen here).

The normal weight of the thyroid gland is: 15-25 grams.

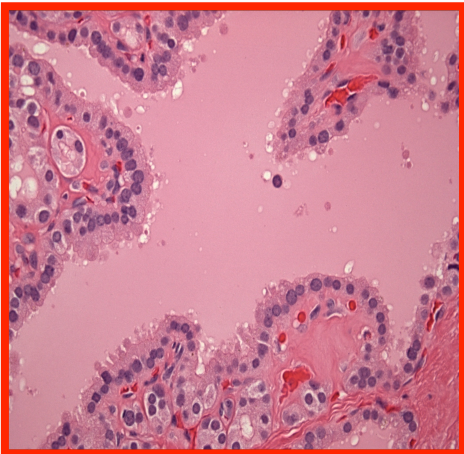


Case 2: Thyrotoxicosis "Gravies Disease"



Gross picture shows:

- Symmetrical **enlargement** of thyroid gland.
- **Cut-surface is homogenous, soft and appears meaty.**
- **Hyperplasia** and **hypertrophy** of follicular cells.



Microscopic section shows:

- Thyroid follicles lined by columnar and high cuboidal cells.
- Evidence of **peripheral vacuoles** within the intrafollicular colloid material.
- Presence of peripheral smaller thyroid follicles devoid of colloid but lined by similar cells.
- Lymphocytic infiltration of the thyroid gland is sometimes seen in thyrotoxicosis (Not seen in this picture).
- Cells actively **resorb** the **colloid in the centers** of the follicles, resulting in the **scalloped appearance** of the edges of the colloid.
- Hyperplasia and hypertrophy of follicular cells.



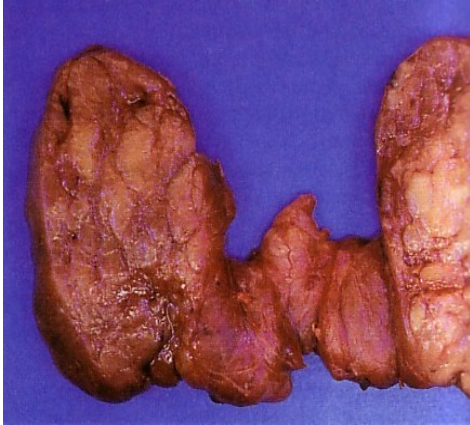
Clinical presentation of hyperthyroidism:

- Hypermetabolism.
- Tachycardia, palpitations.
- **Increased T3, T4.**
- Goiter.
- **Exophthalmos.**
- Tremor.
- GI hypermotility.

Remember: Thyroid storm is a life threatening condition.



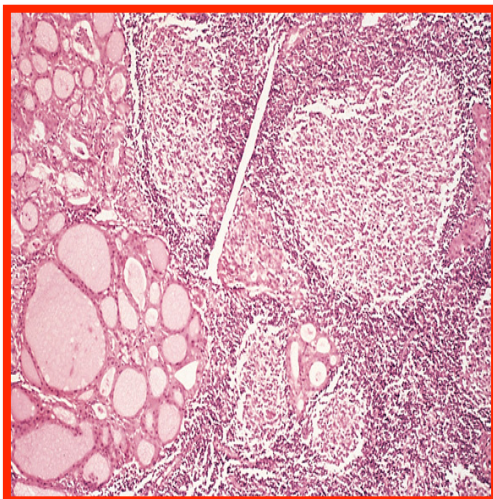
Case 3: Hashimotos Thyroiditis



Gross picture shows:

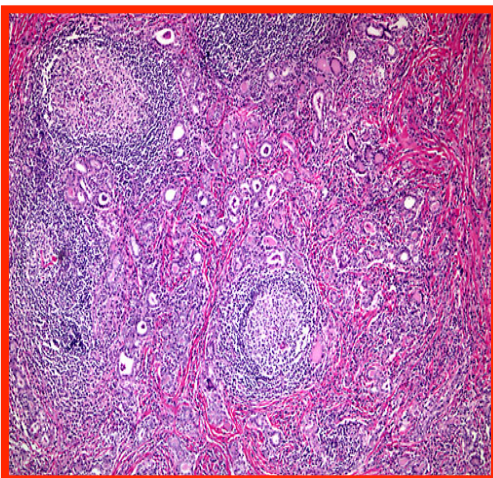
- Diffuse enlargement.
- Firm or rubbery.
- Pale, yellow-tan firm & somewhat nodular cut surface, due to lymphoid aggregations.

(Having pale yellowish tan nodules helps to differentiate it from Thyrotoxicosis).



Microscopic sections show:

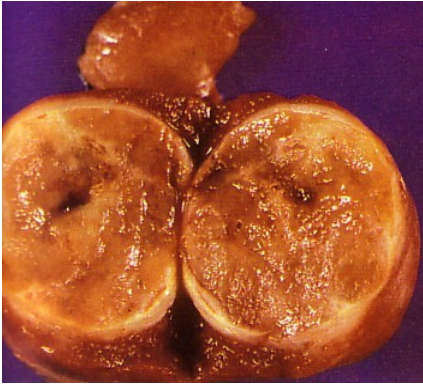
- Massive lympho-plasmacytic infiltration with lymphoid follicles formation.
- Infiltration of the parenchyma by a mononuclear inflammatory infiltrate containing small lymphocytes, plasma cells, and well-developed germinal centers.
- Destruction of thyroid follicles.
- Remaining follicles are small and many are lined by Hurthle cells.
- Increased interstitial connective tissue.



To diagnose Hashimoto thyroiditis:

- Lymphoid follicles are not enough. Secondary (i.e. germinal centers) follicles should be present.
- If the thyroid gland looks like a lymph node, the diagnosis is Hashimoto thyroiditis.
- Remember: Hashimoto = autoimmune.

Case 4: Follicular Adenoma



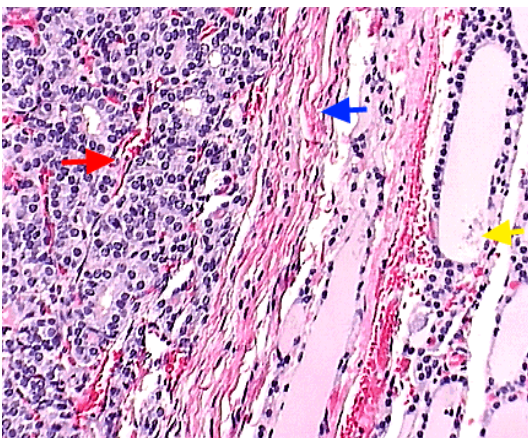
Gross picture shows:

- **Solitary.**
- Variably sized.
- **Encapsulated.**
- **Well-circumscribed.**
- **Homogenous gray-white to red-brown cut-surface.**
- With or without degenerative changes.



Gross picture shows:

- Well-circumscribed light brown and circular tumor nodule.
- **Surrounded by a thick and whitish capsule.**
- The surrounding thyroid tissue is unremarkable.



Microscopic section shows:

The red arrow:

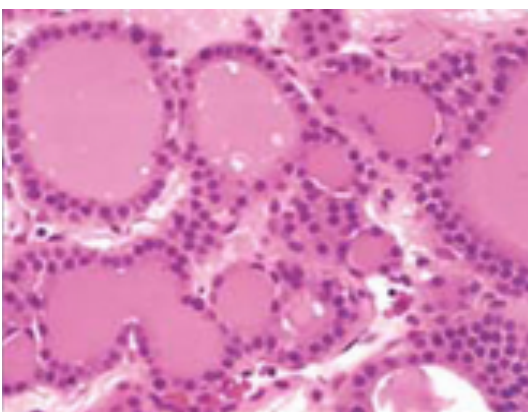
- Located within the adenoma.
- Although composed of follicular cells, little colloid is seen.

The blue arrow:

- Points to the capsule of the adenoma.
- A few strands of connective tissue.

The yellow arrow:

- Points to colloid within a large normal follicle.



- Well-differentiated follicles.
- Resembling normal thyroid.

EXTREMELY well encapsulated tumor. **Benign.** It is sometimes difficult to tell a well-differentiated follicular carcinoma from a follicular adenoma. Thus, patients with follicular neoplasm are treated with **subtotal thyroidectomy** just to be on the safe side.

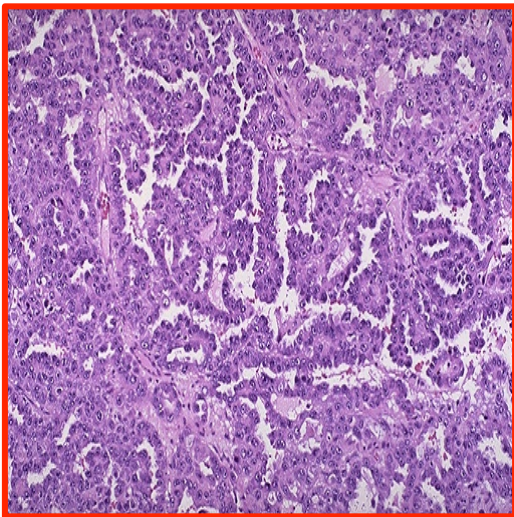


Case 5: Papillary Carcinoma

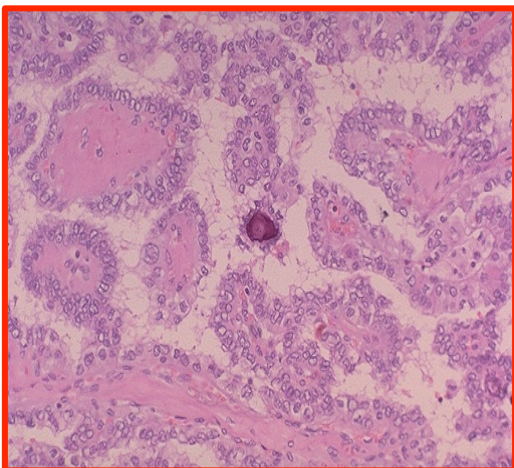


Gross picture shows:

- A relatively well circumscribed pale and firm nodule.
- A whitish cut surface.
- Vague scattered papillary areas.



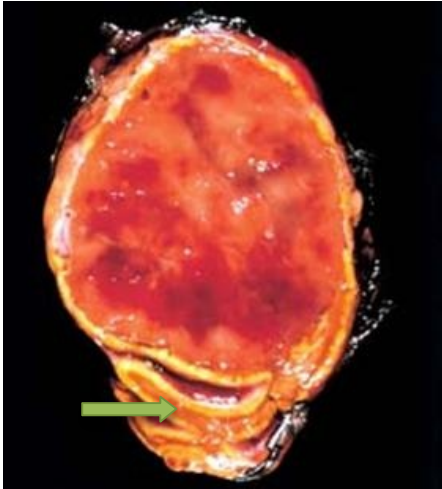
- Papillary neoplasms do NOT usually look uniform on cut surface. This neoplasm can be multifocal, because of the propensity to invade lymphatics within the thyroid, and lymph node metastases are common.
- Usually affects females.



Microscopic sections show:

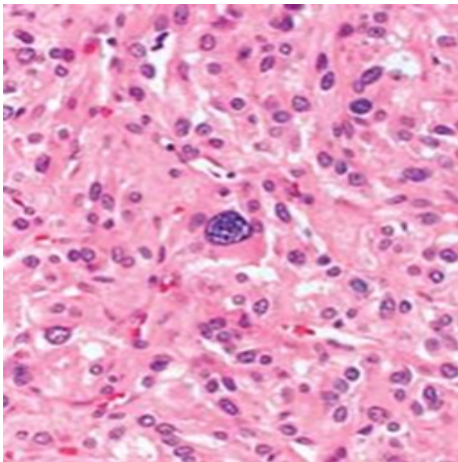
- A papillary neoplasm consisting of papillary fronds (Finger-like projections).
- Lined by **overlapping clear nuclei (Orphan Annie nuclei)**.
- * Cytoplasm has invaginated into the nucleus.
- Calcified **Psammoma bodies** are also seen.

Case 6: Pheochromocytoma



Gross picture shows:

- A single partly pale and partly hemorrhagic **adrenal medullary mass** (neuroendocrine origin), which appears to be compressing the adrenal cortex (arrow).
- The tumor is enclosed within an attenuated cortex.
- Shows areas of **haemorrhage**.



Microscopic section shows:

- **Characteristic nests of cells "Zellballen pattern"** (Not seen here).
- The cells are round-polygonal to spindle shaped
- Abundant finely granular cytoplasm and nuclei with stippled **"salt and pepper" chromatin**.
- For your information: salt and pepper chromatin pattern is seen in any neuroendocrine tumor.

- The patient is usually a young male presenting with hypertension and other symptoms like sweating and palpitations.