

Thyroiditis

Pathogenesis

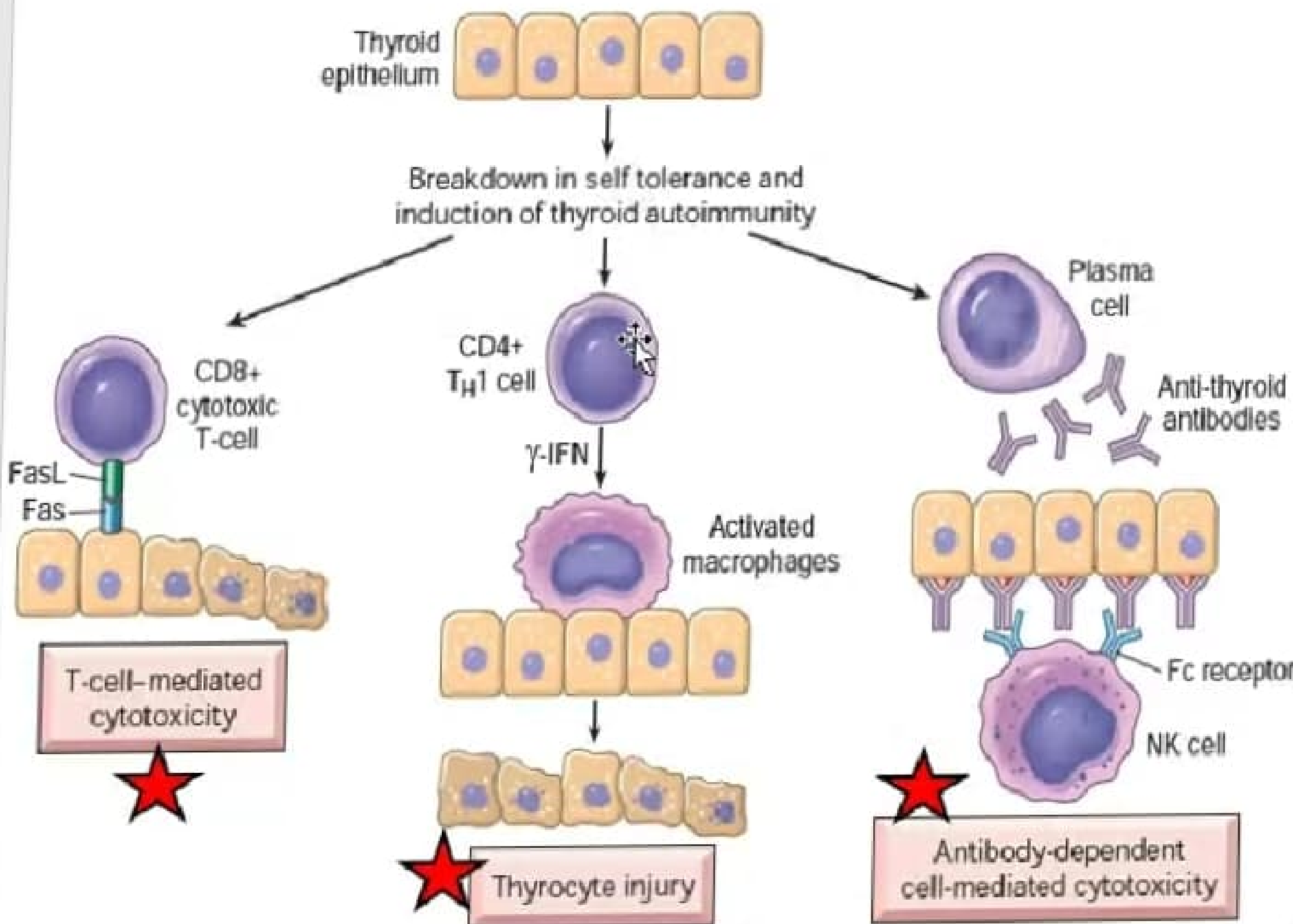
- Autoimmune disease
 - Anti- thyroglobulin antibody
 - Anti- thyroid peroxidase (TPO) antibody
- ***Strong genetic component*** associated with
 - Polymorphisms in genes coding for T cell responses
 - HLA-DR3 & DR5

Hashimoto thyroiditis

- An **autoimmune disease** that results in **destruction of the thyroid gland** and gradual and progressive thyroid failure.
- *Most common cause of hypothyroidism where iodine levels are sufficient.*

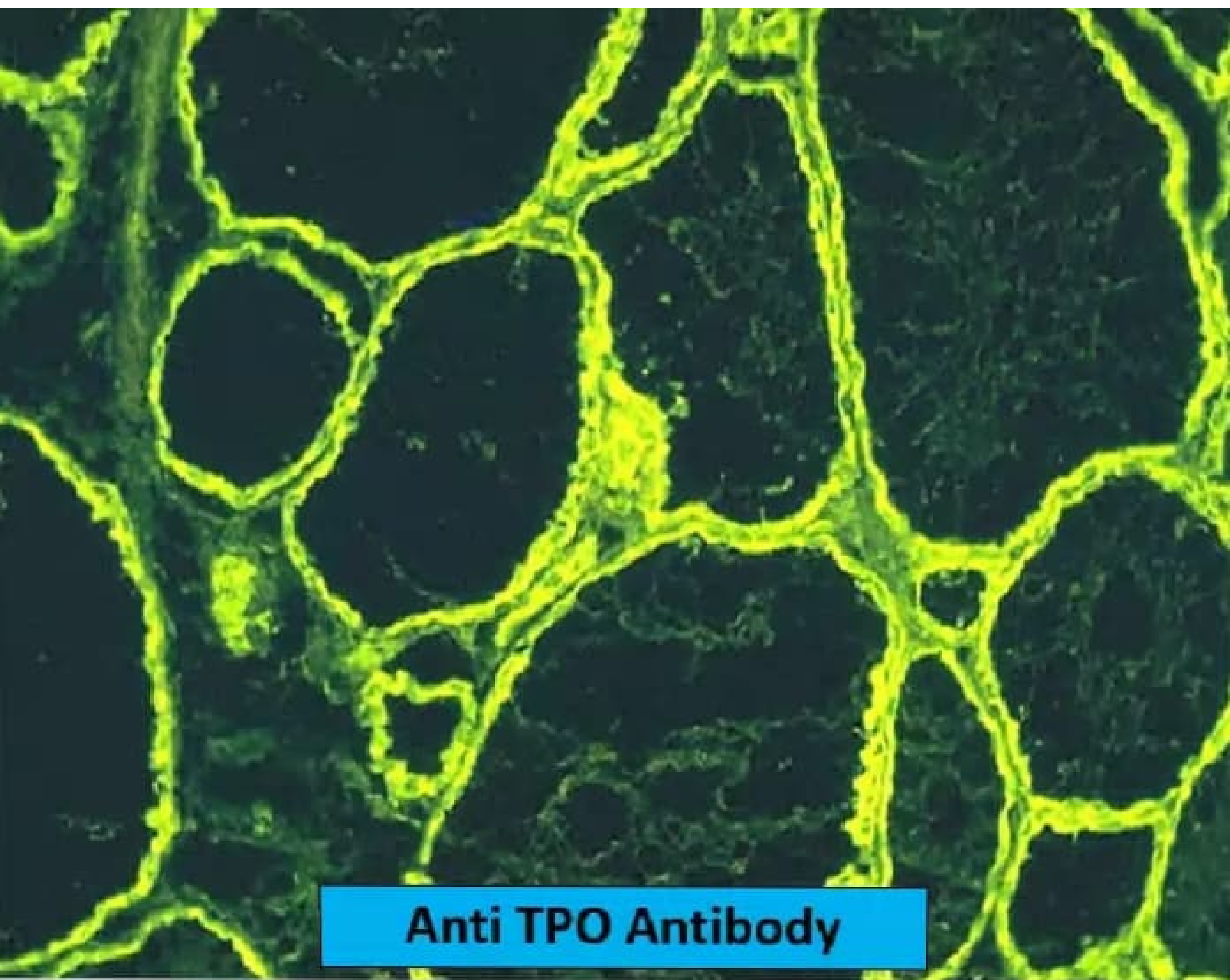
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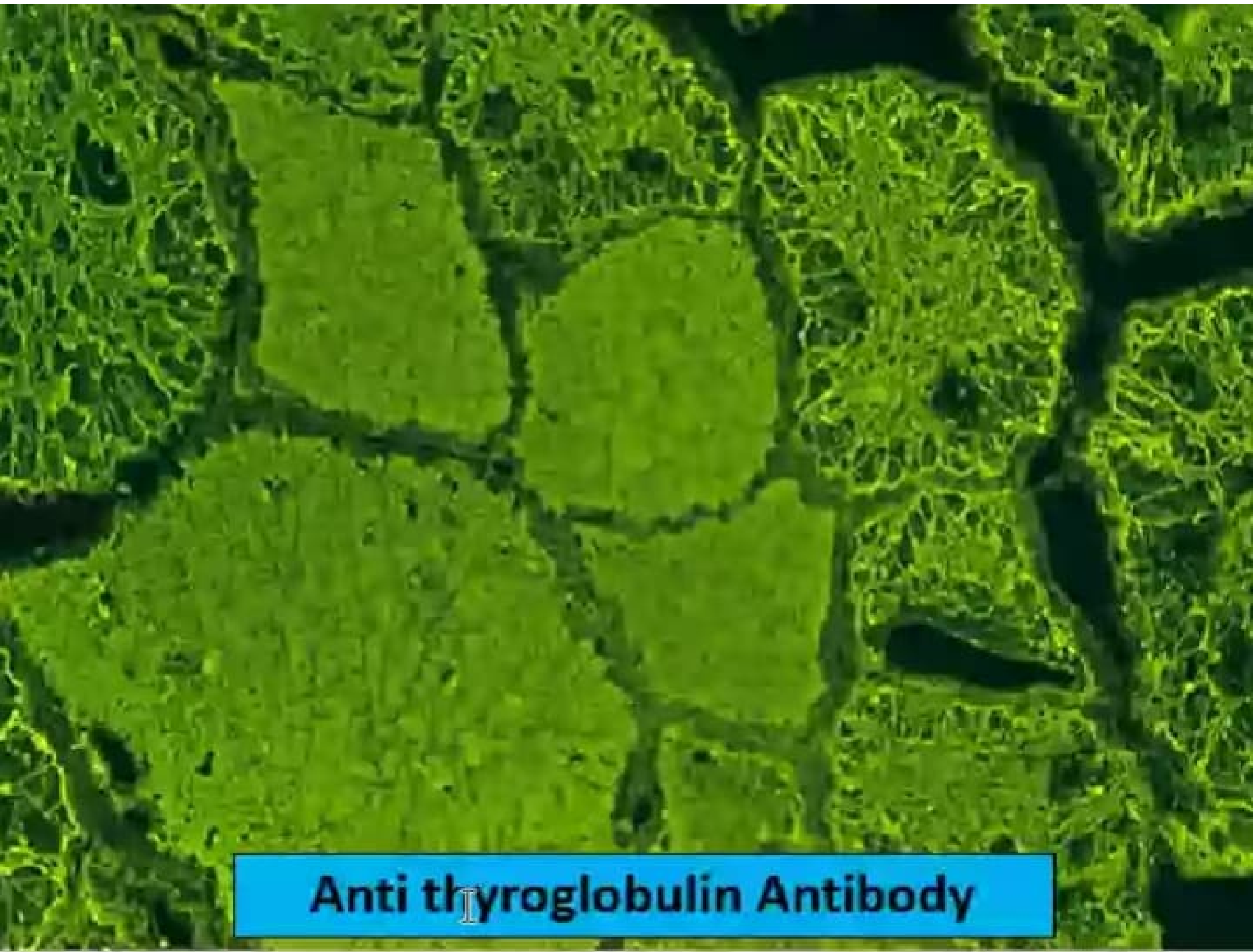


Diagnosis

- **Hypothyroidism phase-**
 - **low** T3 & T4 ; **high** TSH
- “Hashitoxicosis” –
 - **High** T3 & T4 ; **low** TSH
 - RAIU scan- **decreased** (*c.f. Increased in Graves*)
- *Serology, USG, FNAC, Histopathological examination*



Anti TPO Antibody



Anti thyroglobulin Antibody

Associations & risk

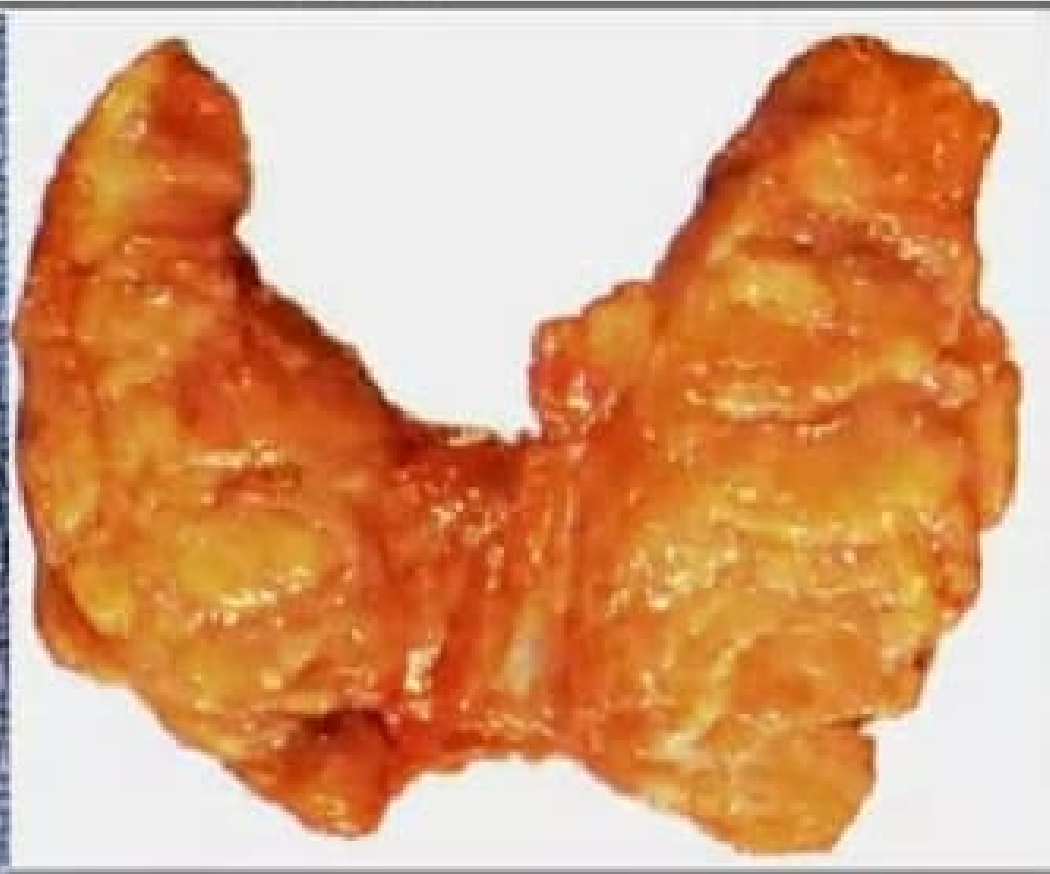
- Autoimmune diseases-
 - Endocrine-**Type I DM**
 - Non-endocrine - **SLE, Myasthenia gravis, Sjogren syndrome**
- **Higher risk for development of**
 - **B-cell Non-Hodgkin Lymphoma** (*Extranodal marginal zone lymphoma*)
 - **Papillary carcinoma**

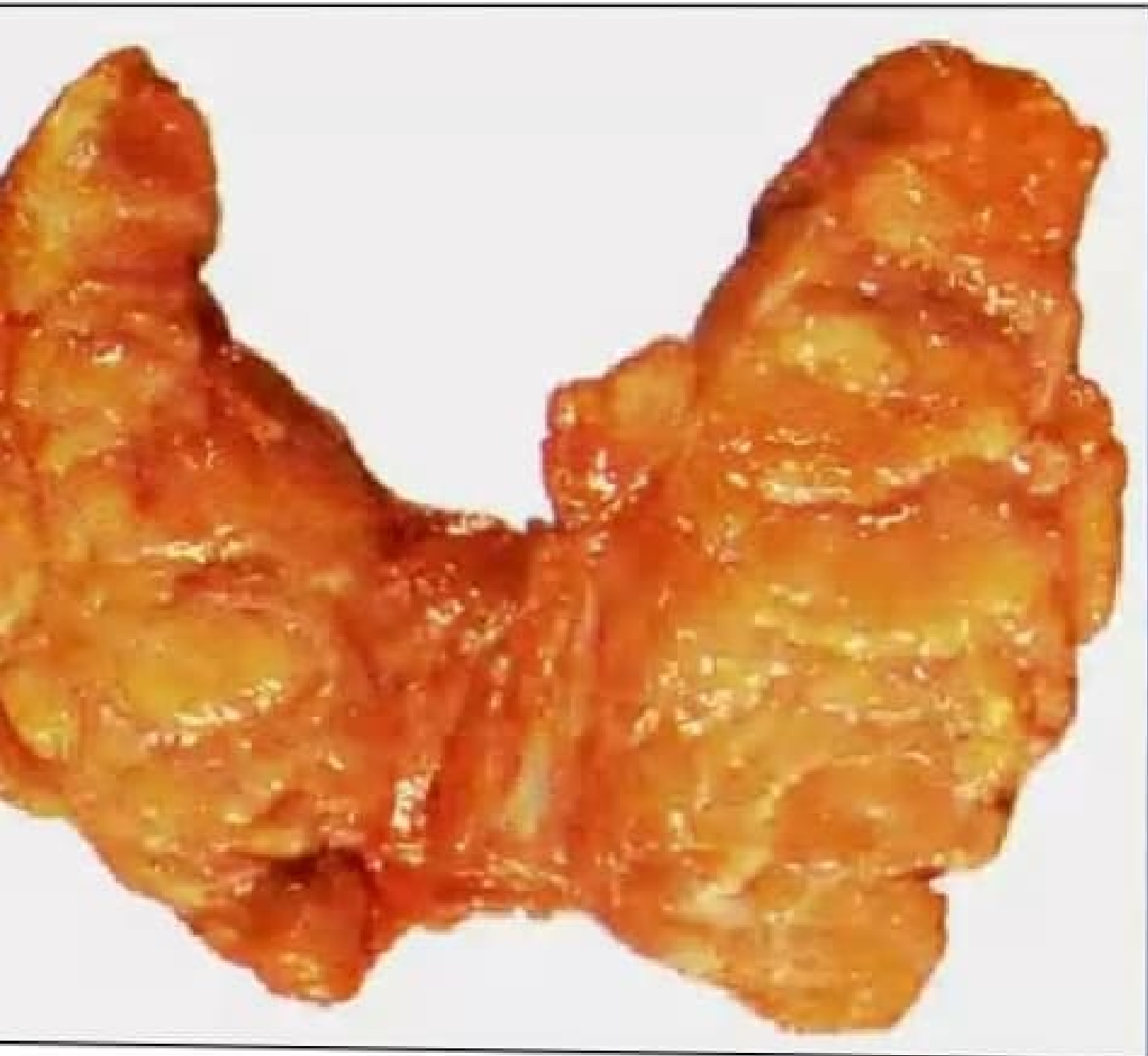
Clinical features

- 45 - 65 years; Female predominance
- **Painless, symmetric & diffuse enlargement of thyroid** with some degree of **hypothyroidism**
- “Hashitoxicosis”- **transient thyrotoxicosis** – *release of thyroid hormones following destruction of follicles*

Gross

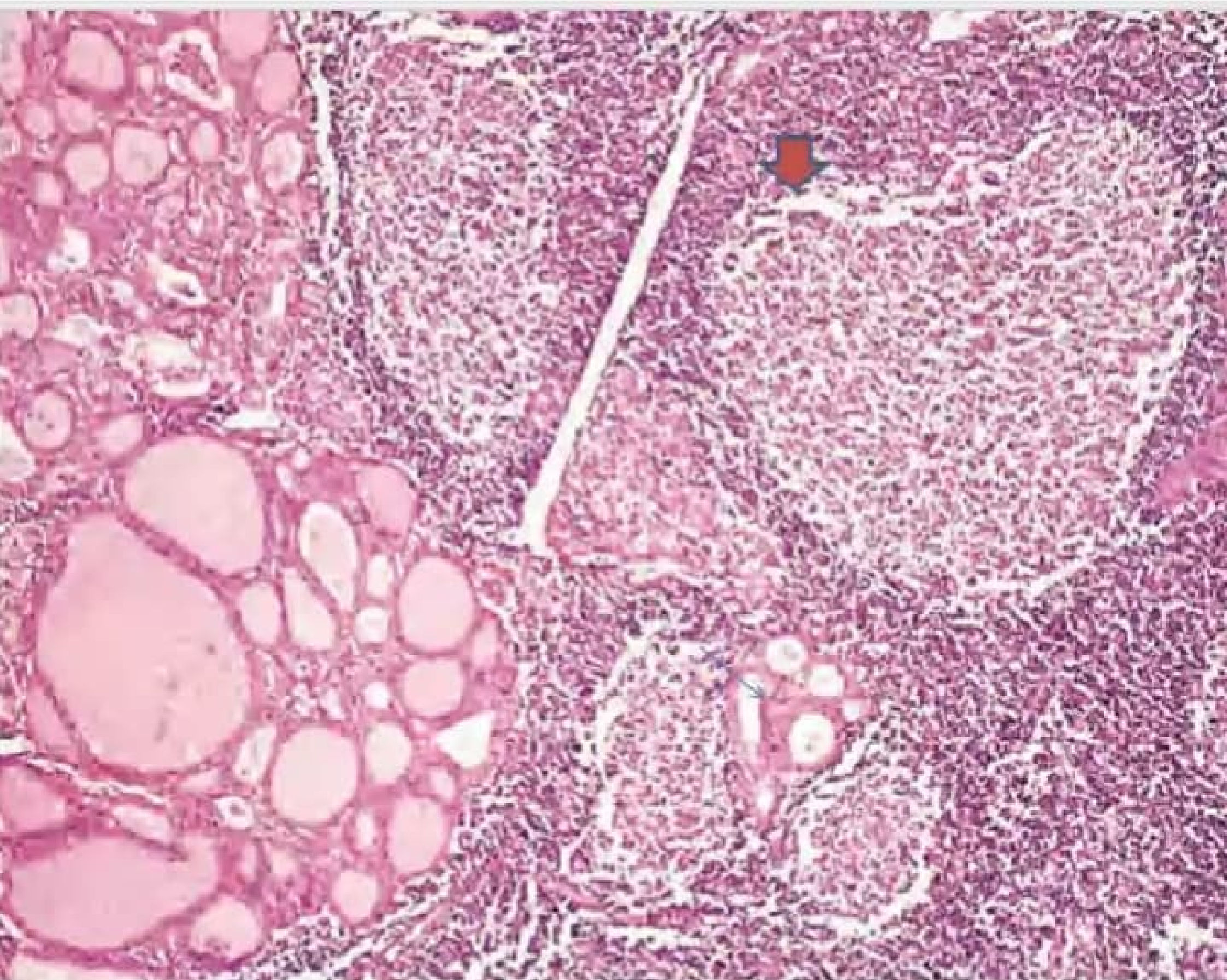
- Diffusely symmetrically enlarged / localized
- Capsule is intact
- C/S- pale, yellow-tan, firm, lobulated





Microscopy

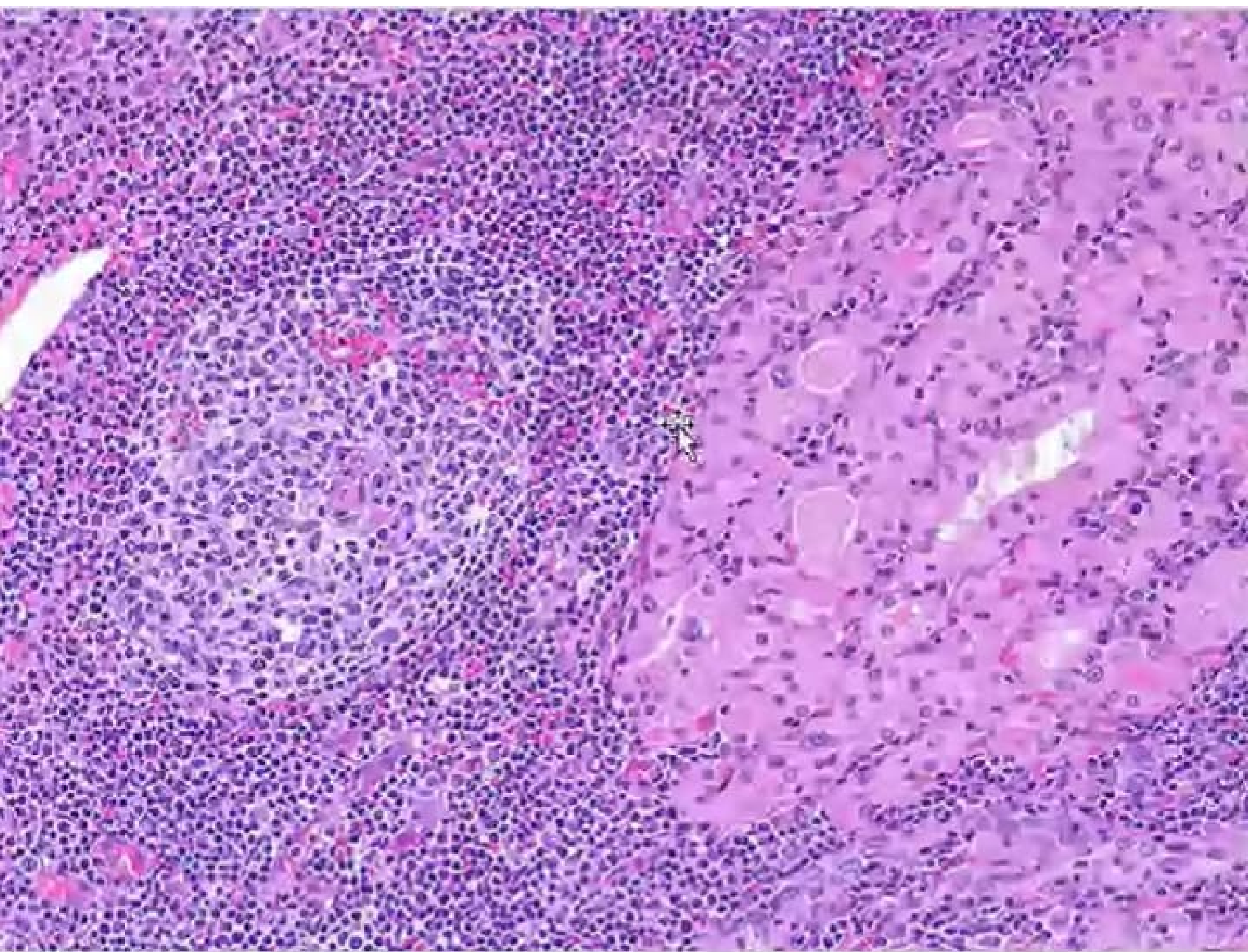
1. Extensive infiltration of parenchyma by lymphocytes forming **lymphoid follicles with germinal centres.**
2. **Atrophic** thyroid follicles
 - ✓ Reduced number
 - ✓ Devoid of/scanty colloid

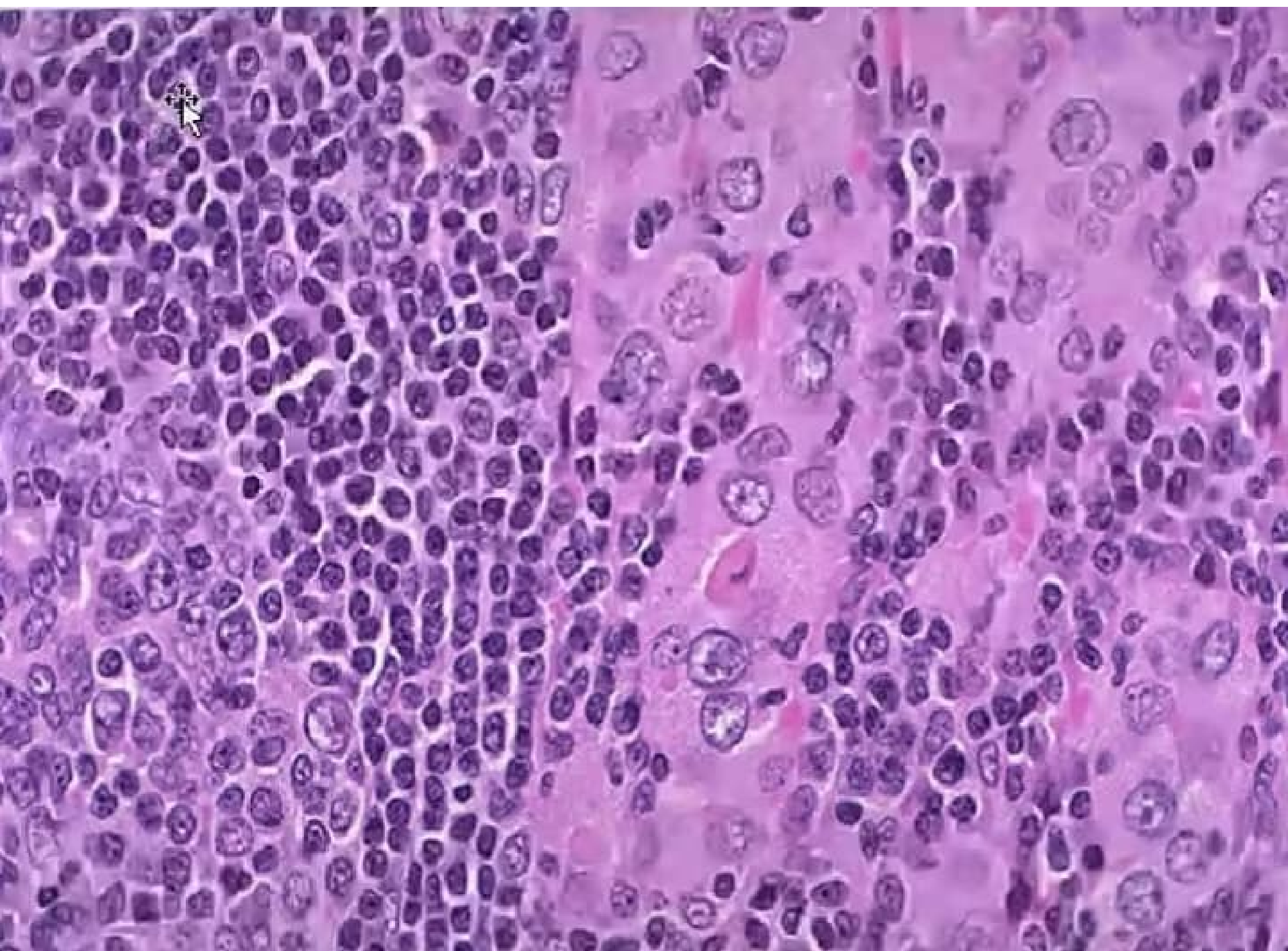


3. Lined by epithelial cells with abundant eosinophilic, granular cytoplasm -

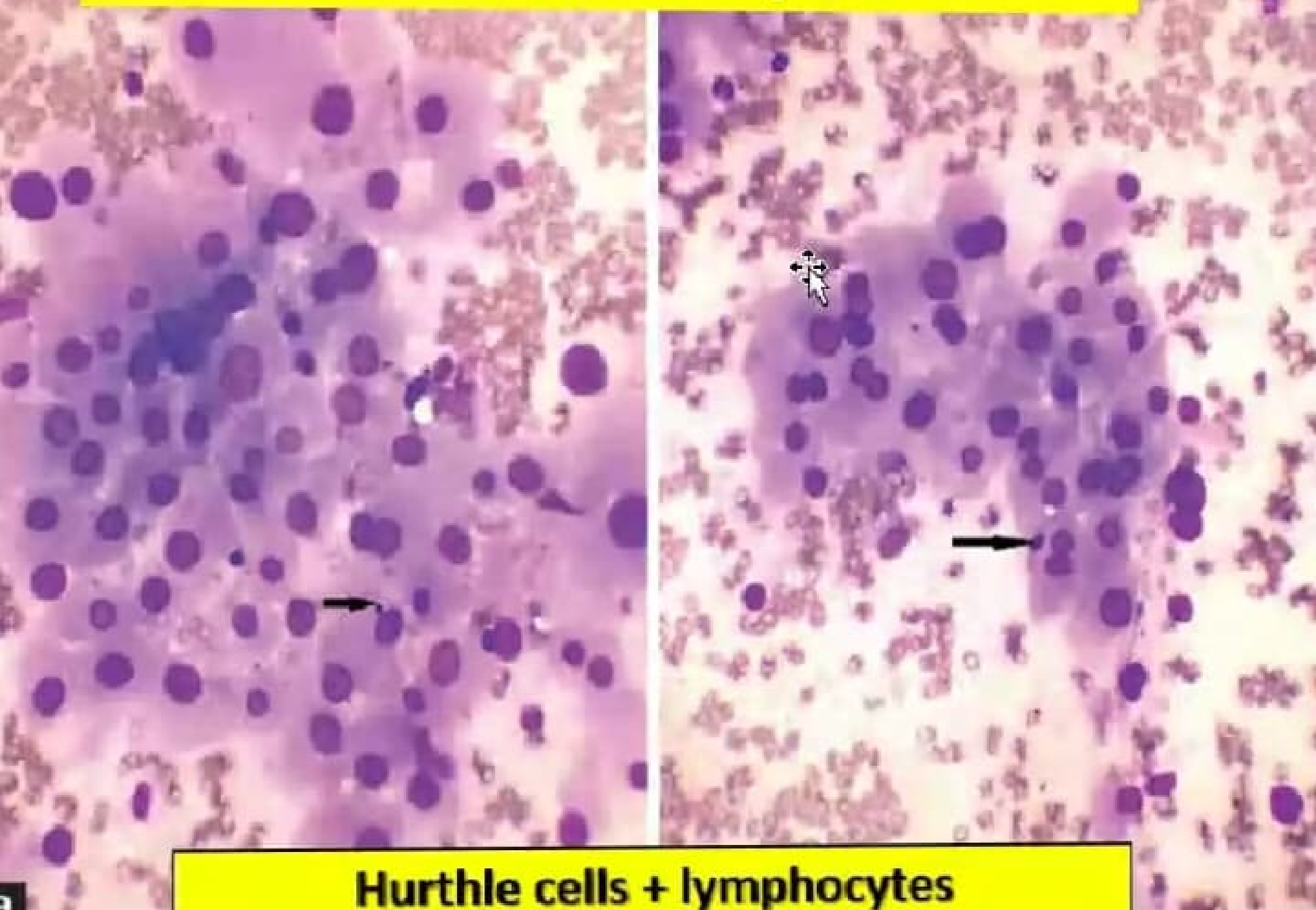
Hurthle cells (metaplastic response to injury)

4. Intact capsule with keloid like **fibrosis**
(fibrous variant)





FNAC- Hashimoto thyroiditis



Hurthle cells + lymphocytes

Treatment

- ✓ No therapy, only follow up – if Euthyroid
- ✓ Hormone replacement –if progressive enlargement of gland or hypothyroidism
 - Development of lymphoma (rare), must be considered if there is **rapid growth or pain** in the involved gland

GRANULOMATOUS THYROIDITIS

GRANULOMATOUS THYROIDITIS

(De Quervain thyroiditis / Giant cell thyroiditis)

- 40-50yrs old ; female predominance
- Triggered by a viral infection (h/o URTI)
- Most common cause of **thyroid pain**
- Self-limiting; **complete recovery in 6 months**

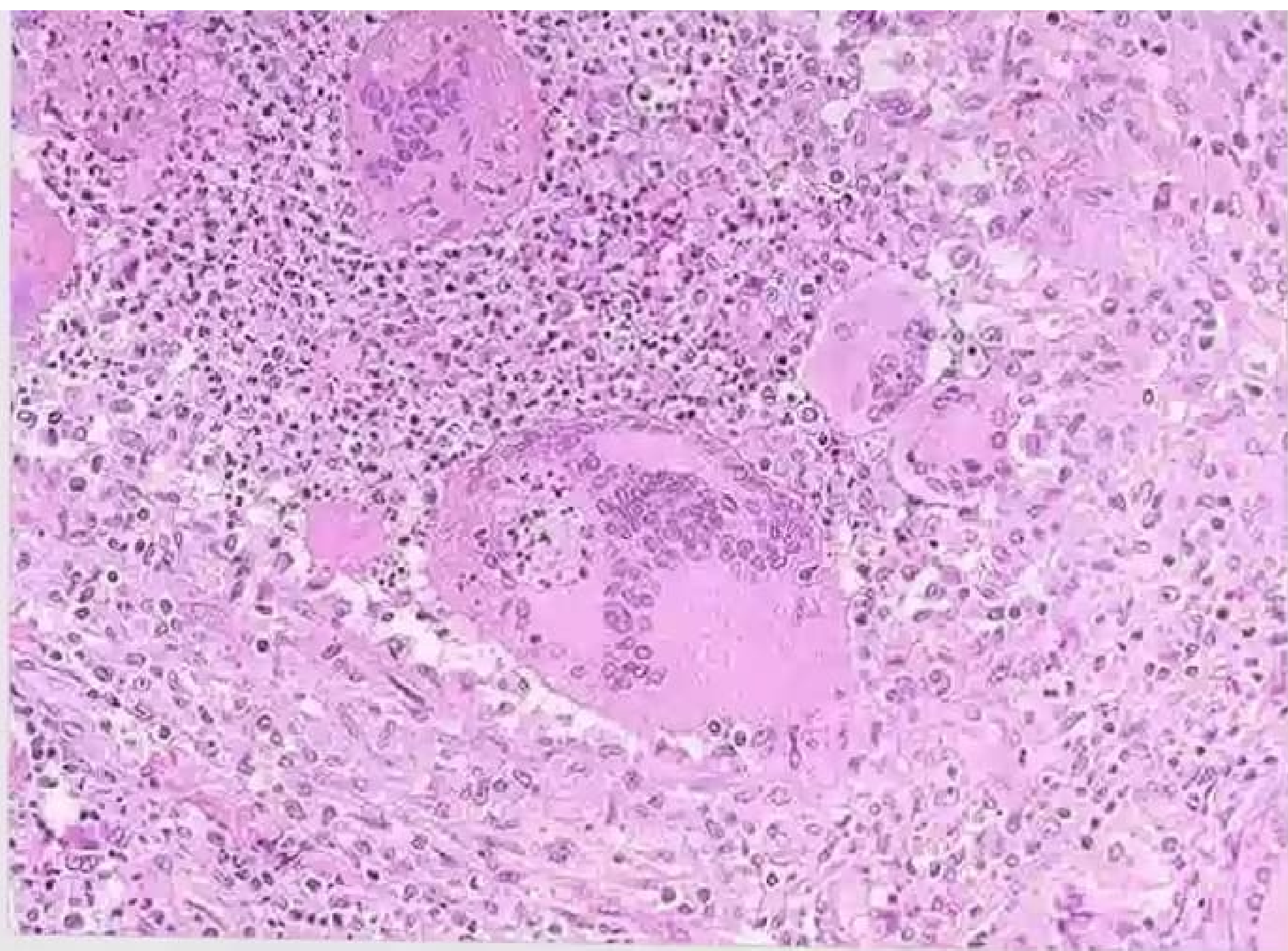
-
- Hyperthyroidism in early phase
 - Serum T3 , T4 - high
 - Serum TSH- low
 - RAIU – diminished
 - Returns to normal – after 6 months

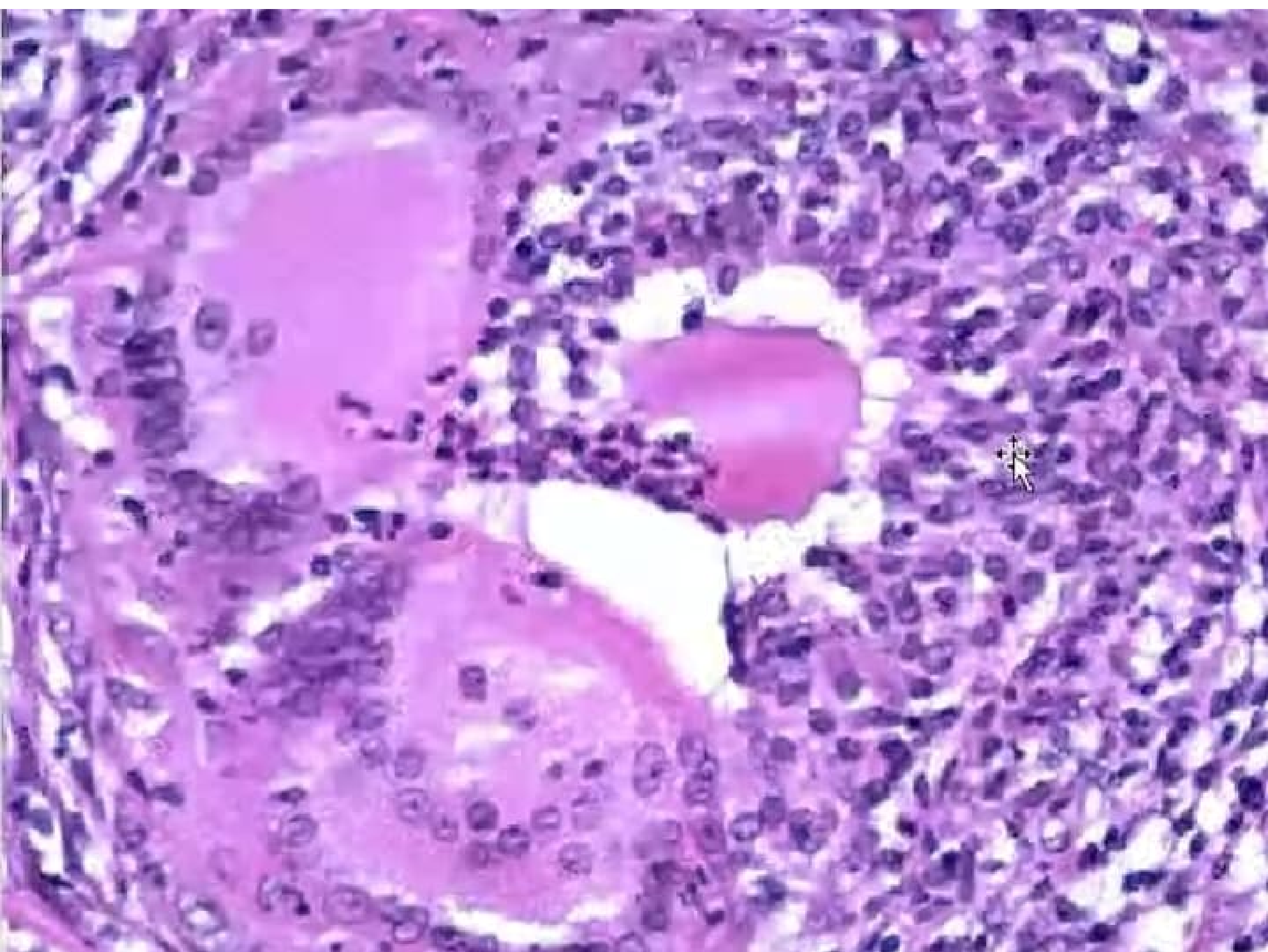
Gross

- Unilaterally or bilaterally enlarged firm thyroid with intact capsule
- C/S-
 - Asymmetric,
 - Involved areas are firm and yellow white

Microscopy

- **Active** inflammatory phase-
 - Follicles disrupt--> replaced by neutrophils (early) -- Collapsed, damaged follicles.
 - Aggregates of lymphocytes, activated macrophages & plasma cells
 - **Multinucleate giant cells engulf fragments of colloid (granulomatous thyroiditis)**
- **Late** phase I
 - chronic inflammatory infiltrate + fibrosis





SUBACUTE LYMPHOCYTIC THYROIDITIS

Subacute lymphocytic thyroiditis

- Middle aged women
- Clinically :
 - **Painless goiter**
 - Transient overt hyperthyroidism (2-8 weeks)
- 5% - occurs postpartum – **Postpartum thyroiditis**
- Autoimmune – circulating Anti-TPO Ab

- **Gross:**

- Mild symmetric enlargement, C/S- normal

- **Microscopy:**

- Lymphocytic infiltration with large germinal centres
- Disruption of thyroid follicles.

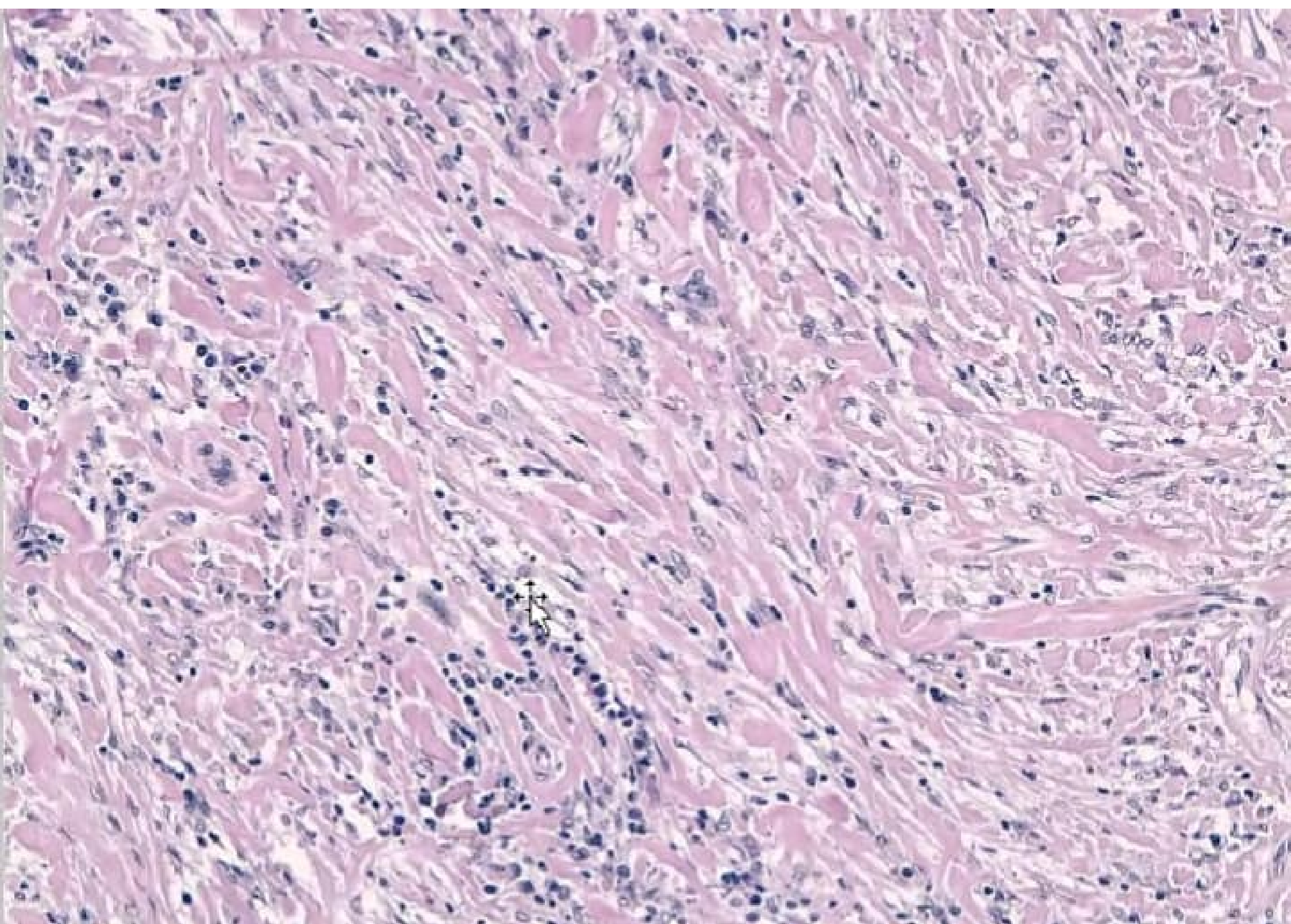
Fibrosis and Hurthle cell metaplasia are not prominent.

RIEDEL THYROIDITIS

Riedel thyroiditis

- Rare
 - **Stony hard, fixed thyroid mass** - mimics carcinoma.
 - 4-7th decade
 - **Autoimmune IgG4-related disease-**
 - Extensive fibrosis of thyroid, parenchymal atrophy & invasion into muscle
 - Tissue infiltration by plasma cells producing IgG4
 - Retroperitoneal & mediastinal fibrosis, sclerosing cholangitis
-

- Gross – contracted stony hard gland, asymmetric and adherent to adjacent structures, cut section – hard, no lobulations
- M/E – marked atrophy of parenchyma, extensive fibrosis and collagen deposition, focally scattered lymphocytic infiltration, invasion of adjacent tissues



Thyroiditis

- Diverse group of disorders characterized by some form of inflammation
- Types
 - Hashimoto thyroiditis
 - Subacute lymphocytic thyroiditis
 - Granulomatous thyroiditis
 - Riedel thyroiditis

