Thyroiditis in the differential diagnosis of lymphoma

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Božo Krušlin, M.D., Ph.D., Dpt of Pathology, School of Medicine, University of Zagreb, Croatia

Inflammation of the thyroid gland – thyroiditis

Acute, subacute or chronic

Different settings

- subacute lymphocytic (postpartum)
- subacute granulomatous (de Qervain)
- Riedel thyroiditis
- palpation thyroiditis
- chronic lymphocytic (Hashimoto disease)

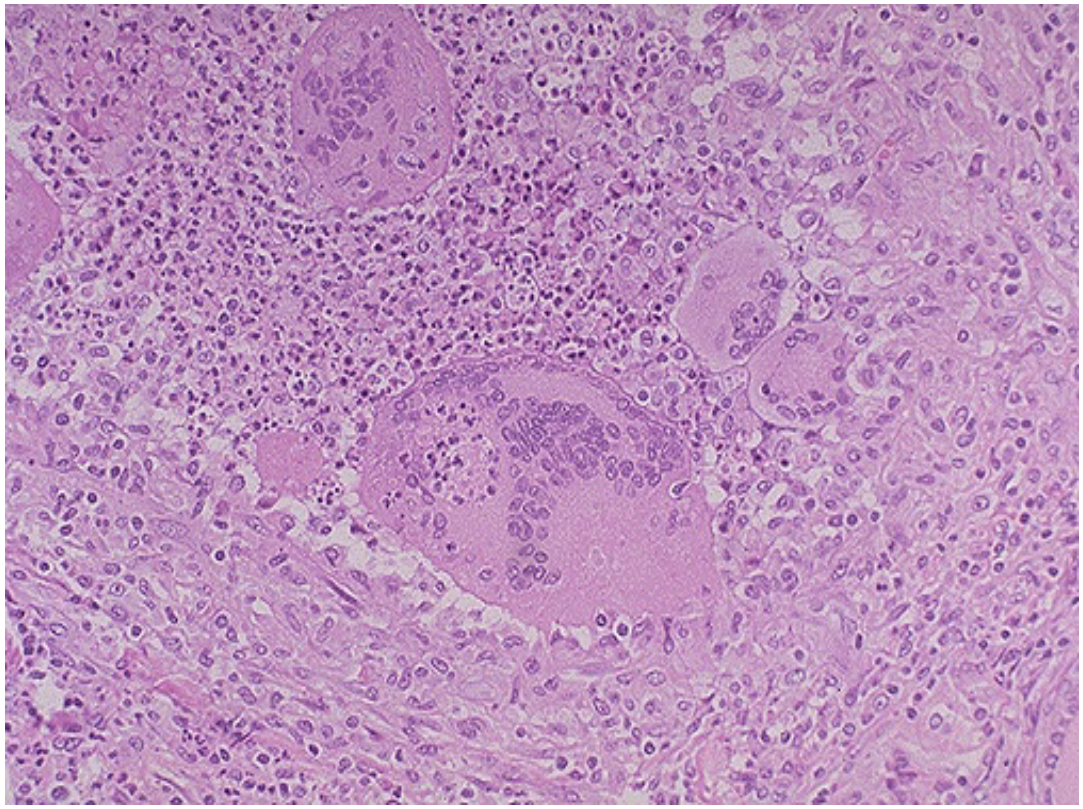
Subacute lymphocytic thyroiditis (postpartum)

- Silent or painless thyroiditis
- In a subset of patients the onset of the disease follows pregnancy
- Most likely autoimmune
- Middle-aged woman
- Increased risk after subsequent pregnancies
- Microscopically – lymphocytic infiltration with secundary follicles
- Unlike Hashimoto – follicle atrophy and oxyphilic changes may be rarely seen

De Quervain’ disease

- Subacute granulomatous thyroiditis - probably follows a viral infection and leads to a painful enlarged thyroid
- Usually self-limited over weeks to months and the patients return to a euthyroid state
- foreign body giant cells with destruction of thyroid follicles

Utah web site



Riedel thyroiditis

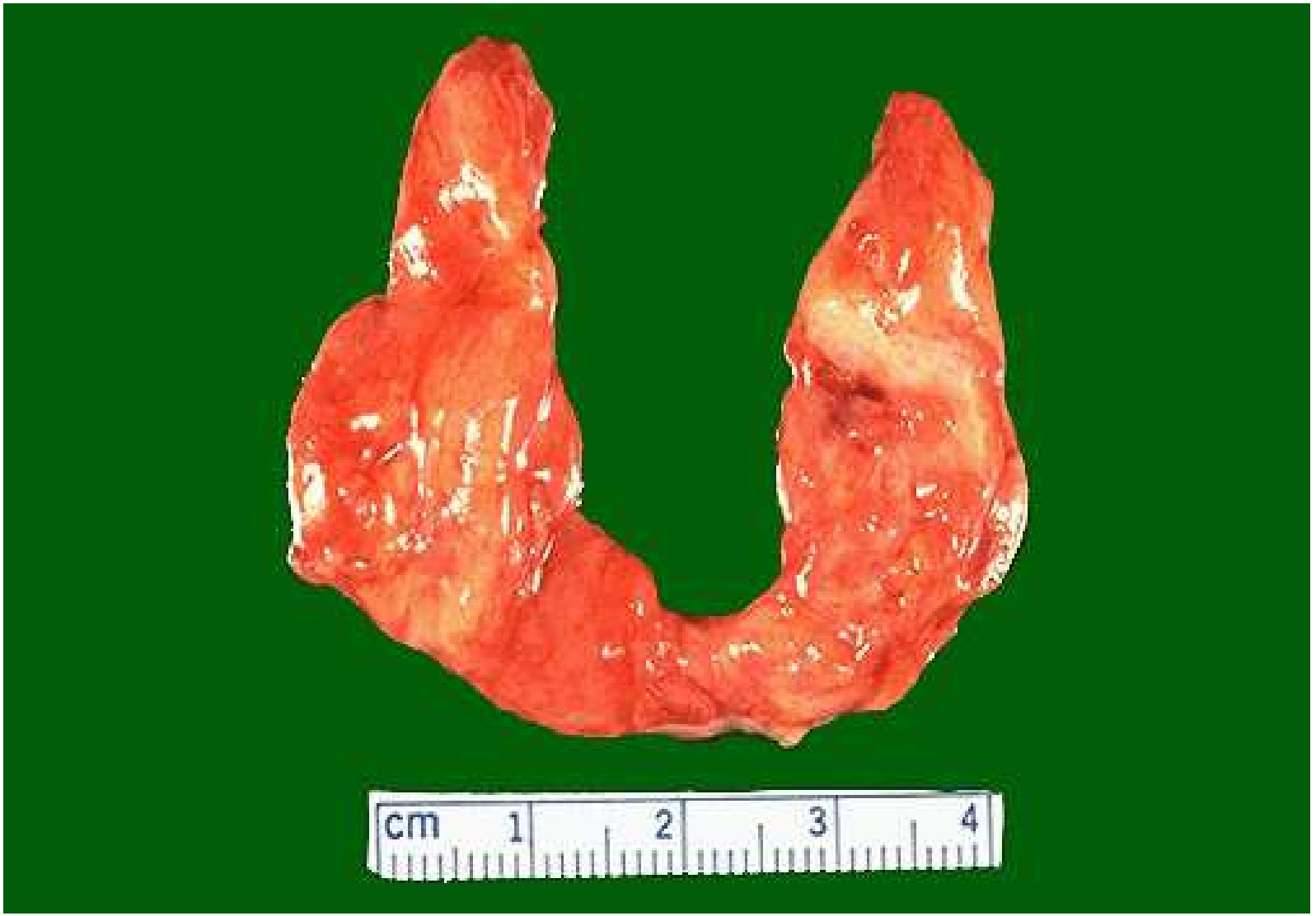
- Thyroid gland in Riedel thyroiditis – asymetrically enlarged and hard due to extensive fibrosis that is usually spreading to adjacent soft tissues
- The cause of Riedel's thyroiditis is not known, probably autoimmune
- in a number of studies, the majority of patients with the condition tested positive for antithyroid antibodies
- DD – fibrosing variant of Hashimo thyroiditis and anaplastic carcinoma

Palpation thyroiditis

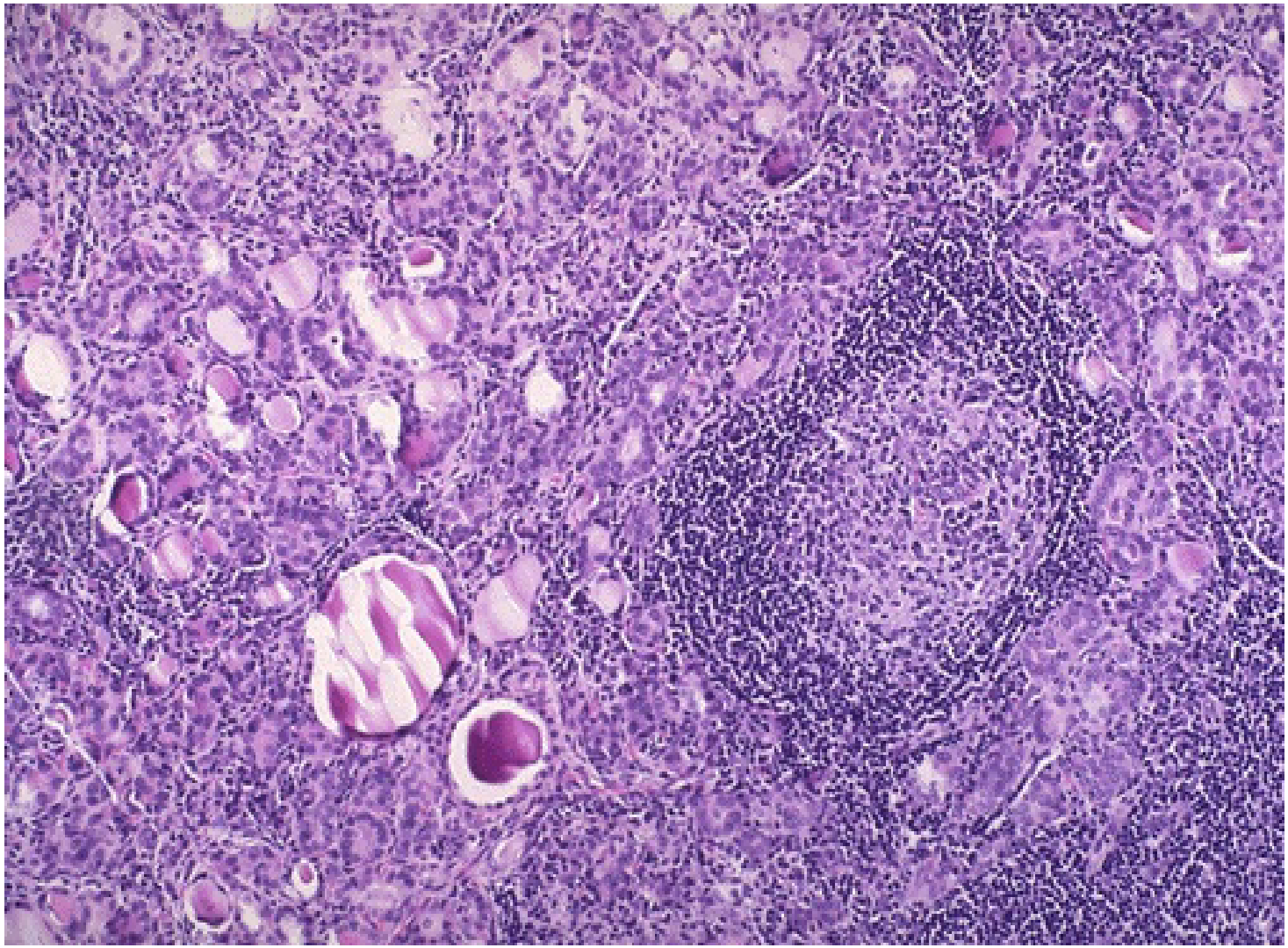
- Caused by vigorous clinical palpation resulting in multifocal disruption of the follicles
- Focal collection of multinuclear giant type cells
- No abnormalities of thyroid function
- Incidental finding
- Clinical history

Hashimoto disease

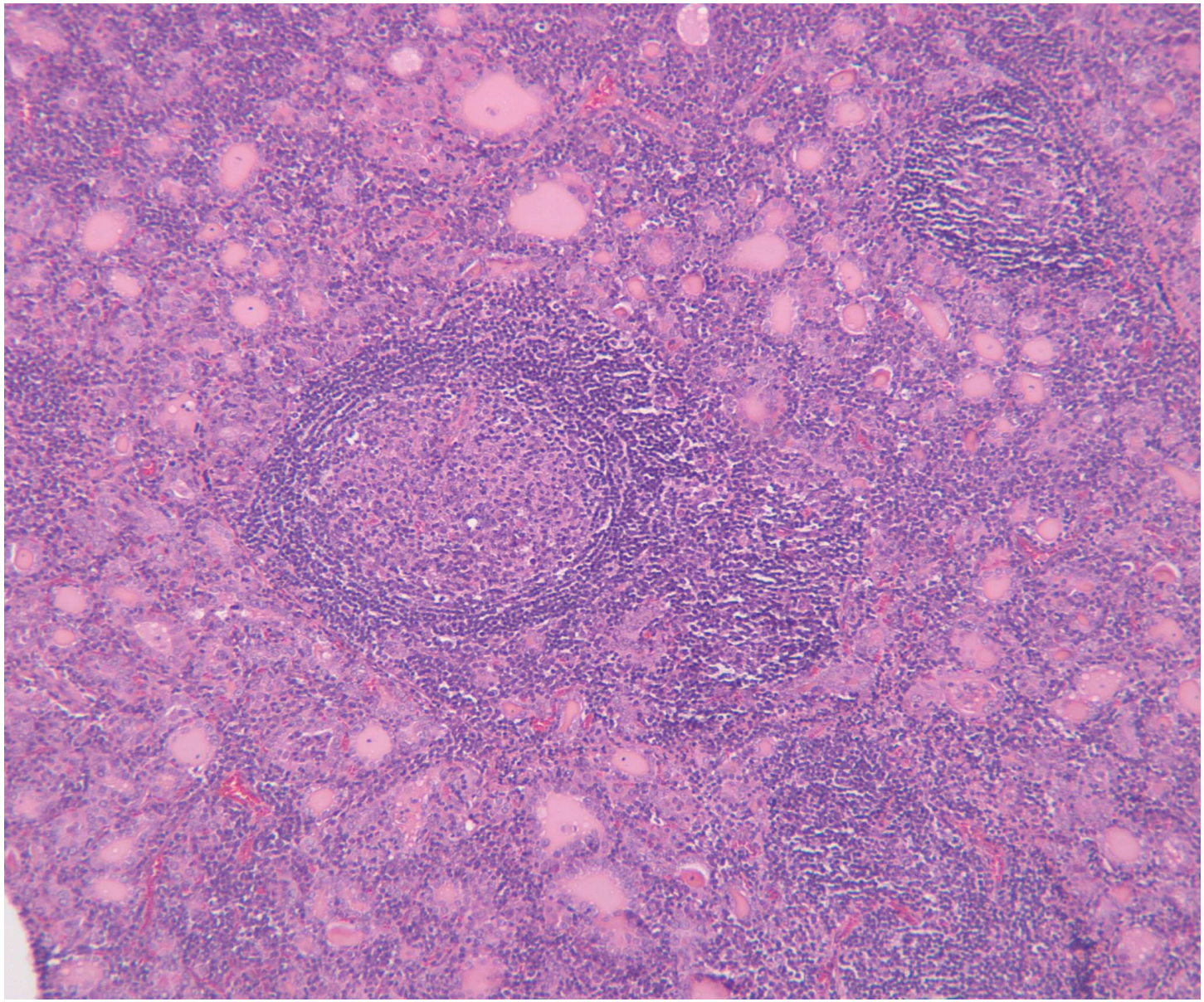
- Chronic lymphocytic thyroiditis - autoimmune disorder of the thyroid
- The most common cause of hypothyroidism in the USA
- Primary defect in T cells
- Autoimmune disease - antithyroglobulin and antimicrosomal antibodies often can be detected.
- Other autoimmune diseases such as Addison's disease or pernicious anemia may also be present.
- Both thyroid growth immunoglobulins (TGI) and thyroid stimulating immunoglobulins (TSI) are present, though blocking antibodies to TSI mitigate their effect
- Initially, the thyroid is enlarged and painless and there may be transient hyperthyroidism, followed by a euthyroid state and then hypothyroidism with eventual atrophy years later



Atrophic thyroid gland in a hypothyroid patient with Hashimoto's thyroiditis. Utah web site



Thyroid with Hashimoto's thyroiditis Utah web site



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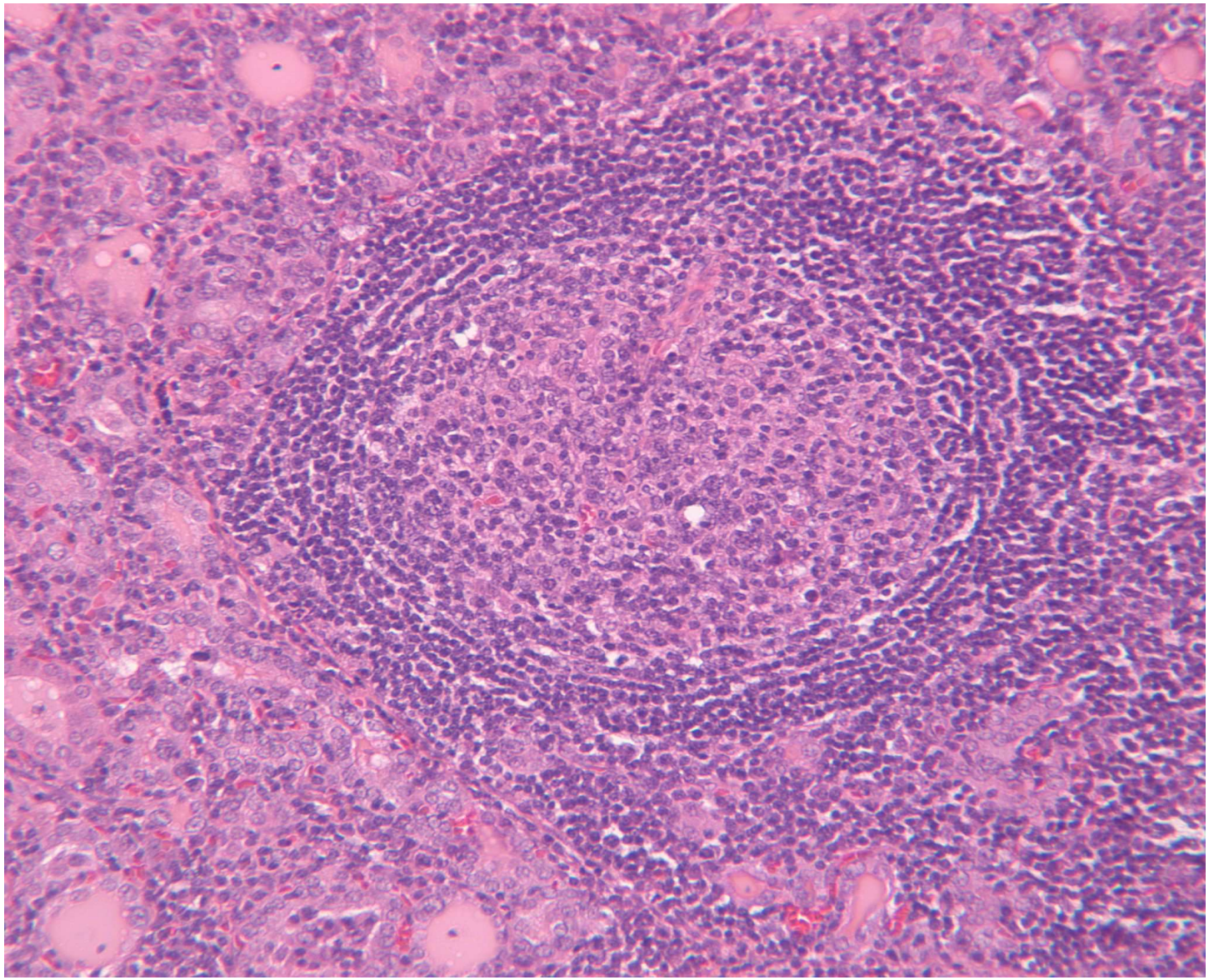

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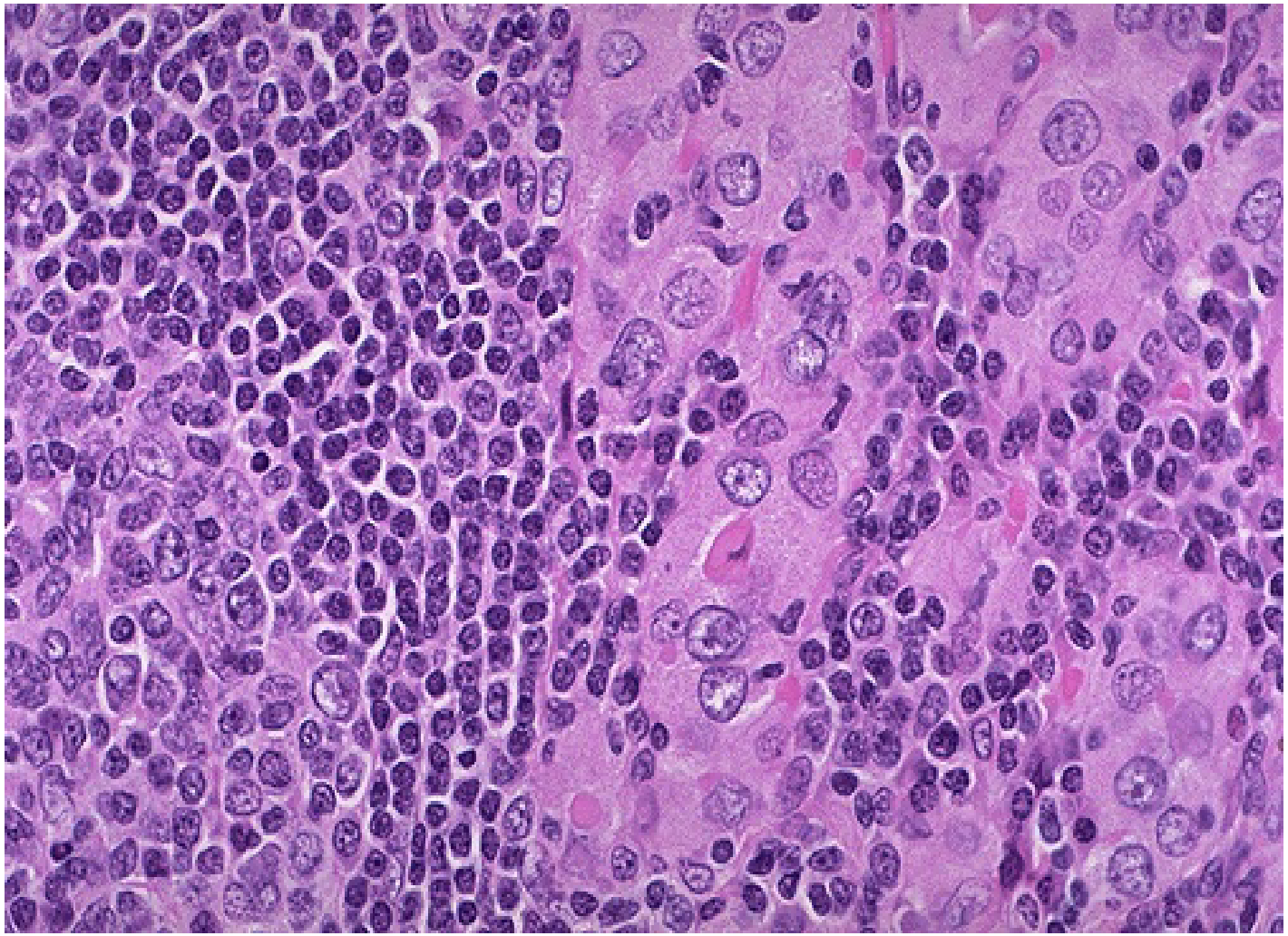


Hashimoto's thyroiditis with the pink Hurthle cells

Utah web site

Primary thyroid gland lymphoma

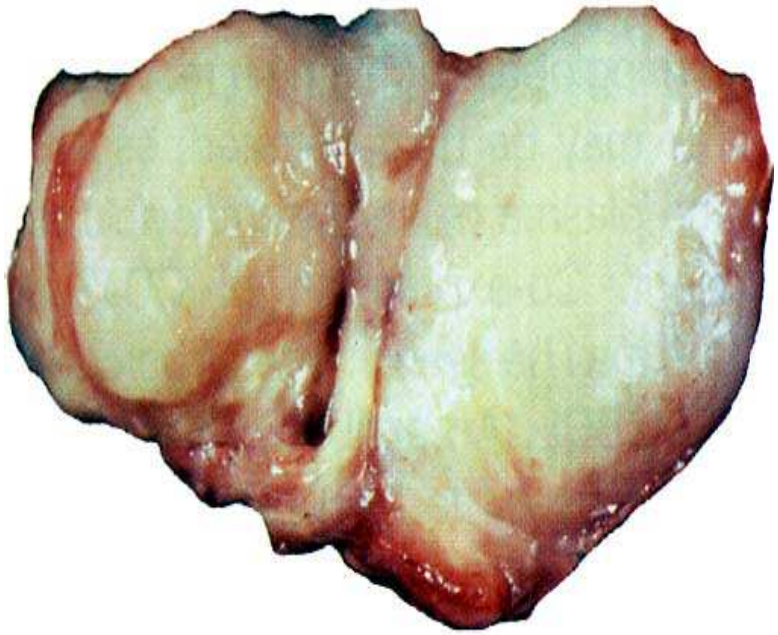
- 1-5% of all thyroid malignant tumors
- 2% of all extranodal malignant lymphomas
- The most common types
  - Large B-cell lymphoma, Marginal Zone B-Cell Lymphoma of MALT Type (MZBL), Mixed DLBCL and MZBL (Marginal Zone B-Cell
  - Lymphoma of MALT-Type With Large Cell Transformation)

Primary thyroid gland lymphoma

- PTLs typically occur in middle - to older-aged women
- Symptoms: dysphagia, dyspnea, stridor or hoarseness, pain, choking, coughing
- Usually arise in the setting of autoimmune thyroiditis (lymphocytic thyroiditis, Hashimoto’s disease).
- The relative risk of a patient with lymphocytic thyroiditis developing lymphoma has been estimated to be 40 to 80 times greater than in the general population
- It takes on average, 20 to 30 years to develop after the onset of lymphocytic thyroiditis

Primary thyroid gland lymphoma

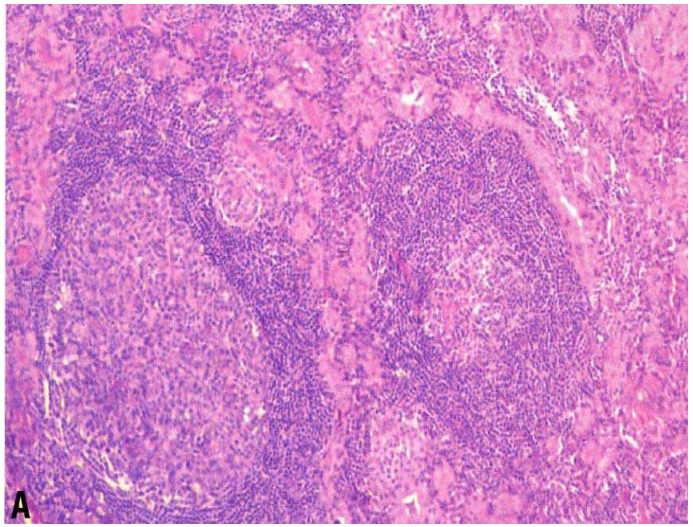
- Up to 20 cm in largest diameter
- Cut surface – smooth, pale tan, white-gray or red, fleshy appearance, foci of haemorrhage and/or necrosis
- Majority of patients in stage IE or IIE
- Those with LBCL – stage IIIE or IVE



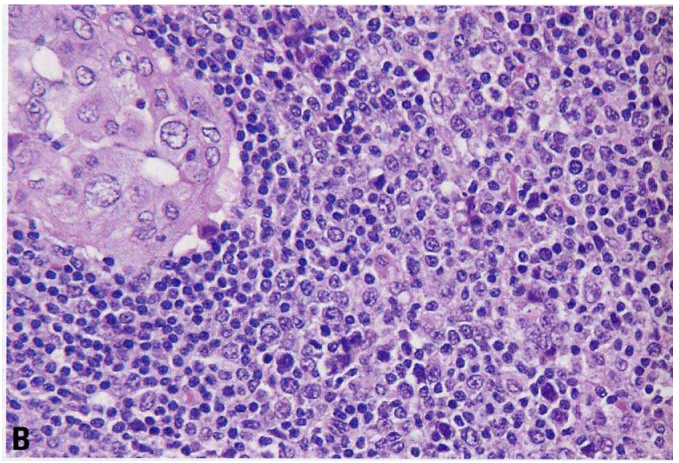
WHO 2004

Primary thyroid gland lymphoma

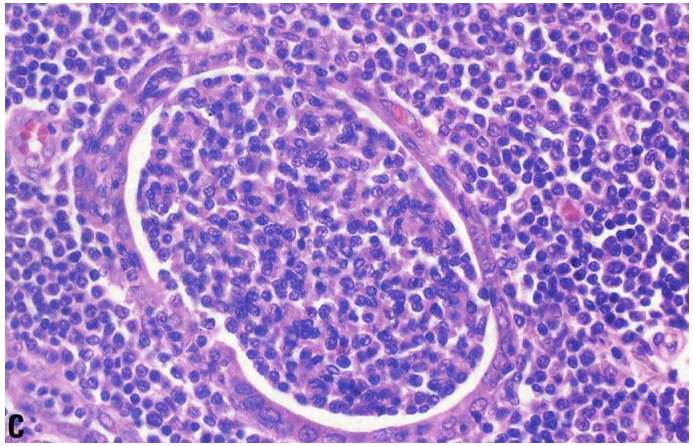
- Extranodal MZBCL
  - Heterogenous B-cell population, atypical small lymphocytes, centrocyte like cells, monocytoid B-cells, scattered immunoblasts and plasma cells
  - Reactive germinal centers colonized by neoplastic cells
  - Lymphoepithelial lesions – rounded masses distending the lumen of the thyroid follicle (MALT balls)



Lymphocytic thyroiditis



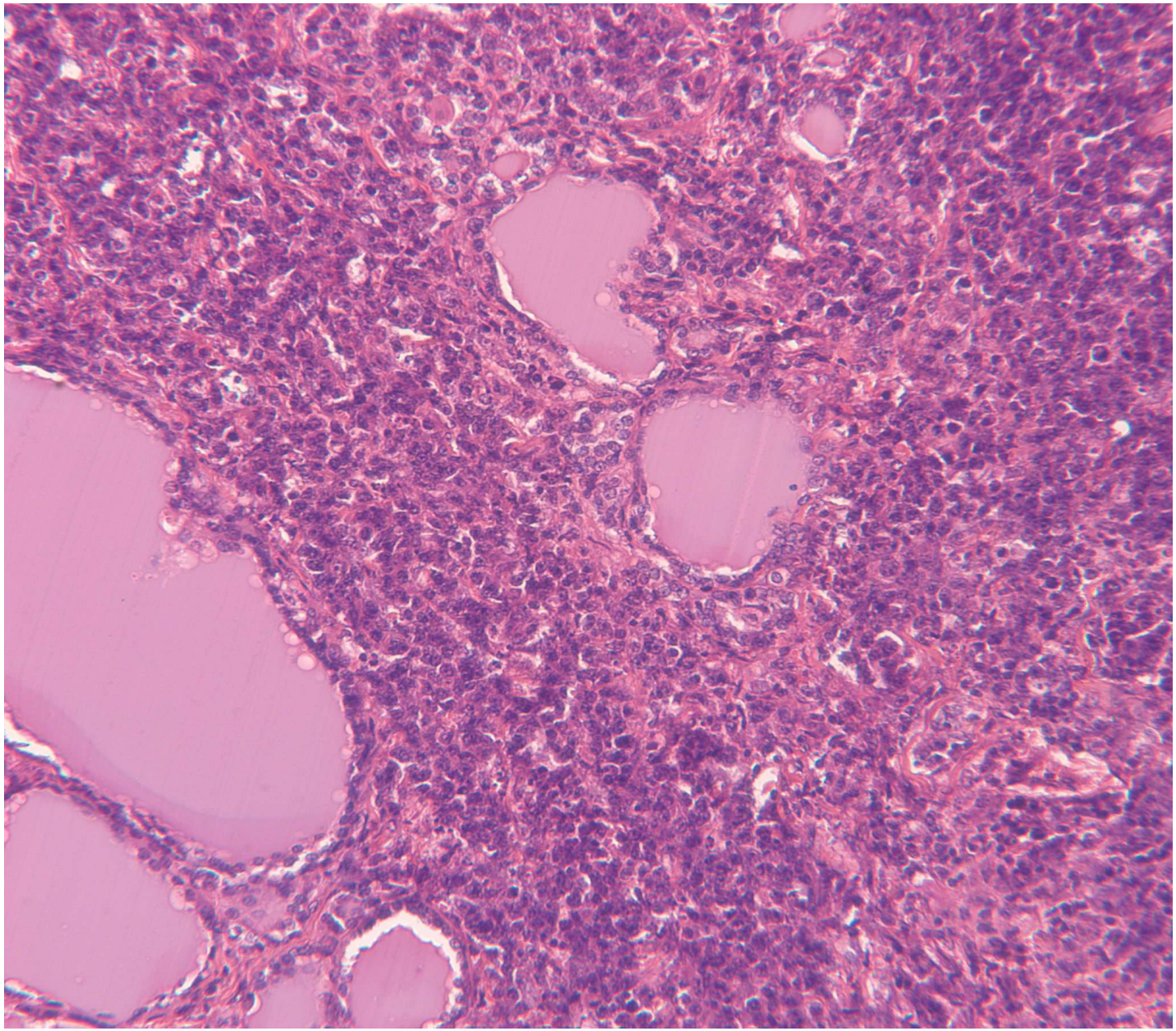
Marginal zone lymphoma – monocytoid, centrocyte like cells and immunoblasts



WHO 2004

Diffuse large B-cell lymphoma

- Single or multifocal areas adjacent to low grade component
- Areas of LBCL without low grade foci
- Centroblasts, immunoblasts, monocytoid B-cells, plasmocytoid cells
- Numerous mitoses
- Occasionally Burkitt like pattern



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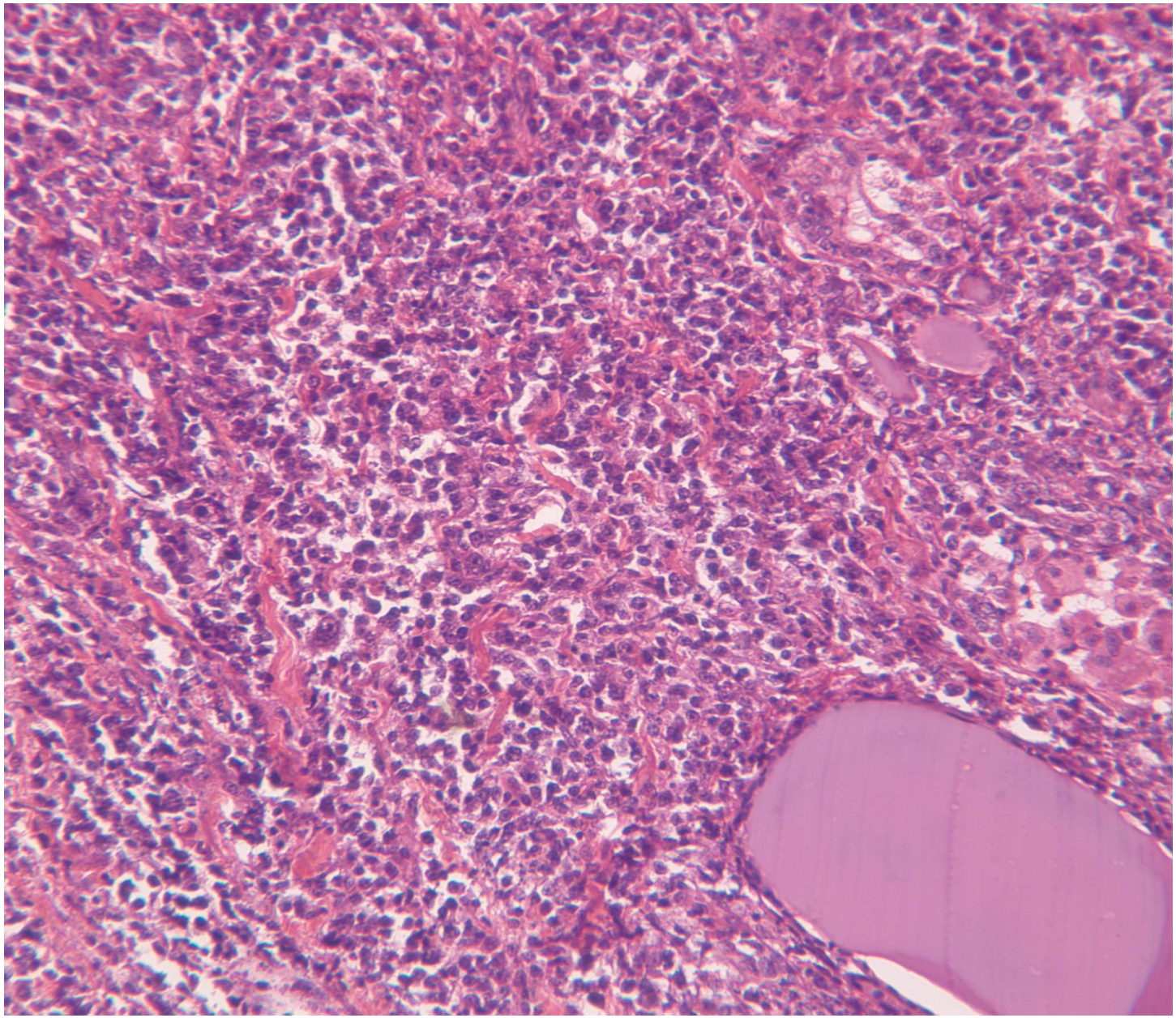

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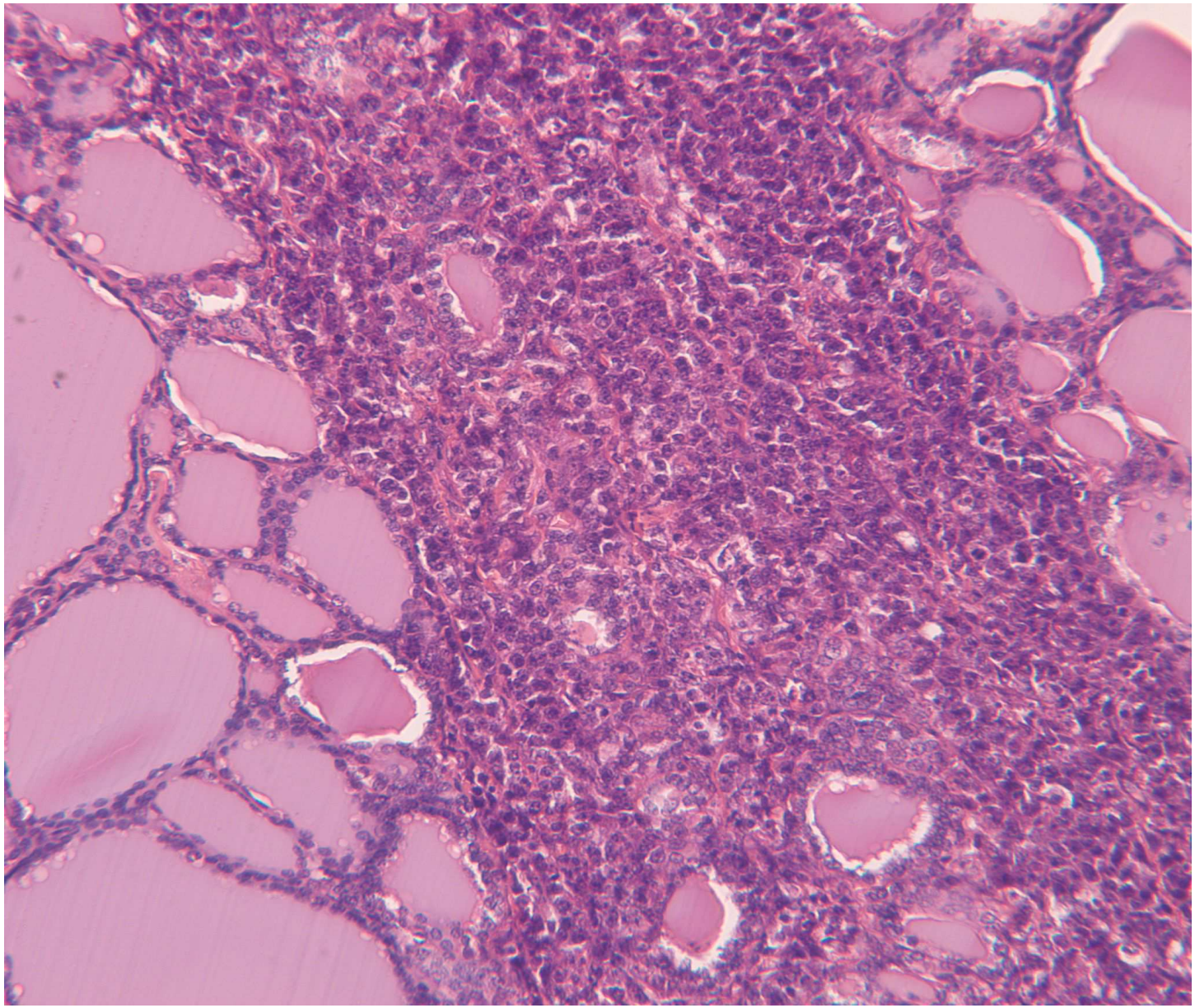

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Differential diagnosis

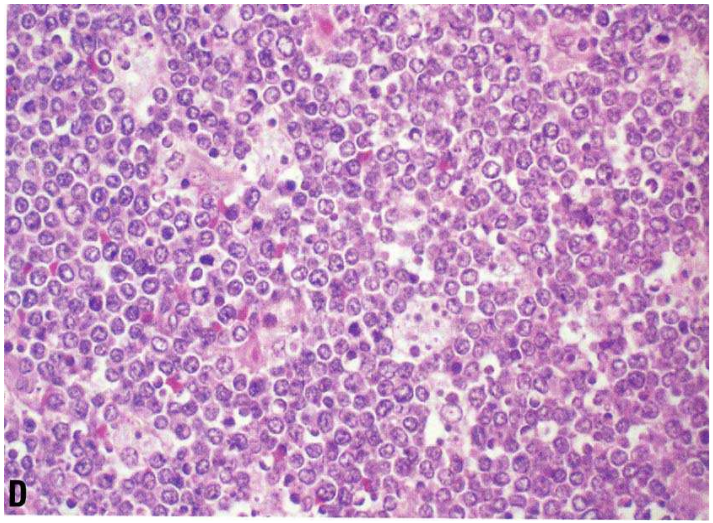
- Thyroiditis versus EMZBCL may be occasionally difficult
  - Histology – gold standard, however sometimes additional immunohistochemical, flow cytometrical and molecular genetic analyses may be needed
- EMZBCL versus follicular lymphoma
  - Reactive, colonized germinal centres in EMZBCL should be distinguished from neoplastic germinal centres in FL
  - FL will show positivity for bcl-2 and germinal cell markers CD10 and bcl6

Differential diagnosis

- Large B-cell lymphoma versus carcinoma (primary undifferentiated carcinoma of the thyroid), metastatic carcinoma, melanoma or myeloid sarcoma
  - LCA, CD20, cytokeratin, S-100, HMB45 and myelomonocytic markers

Large B cell lymphoma

WHO 2004

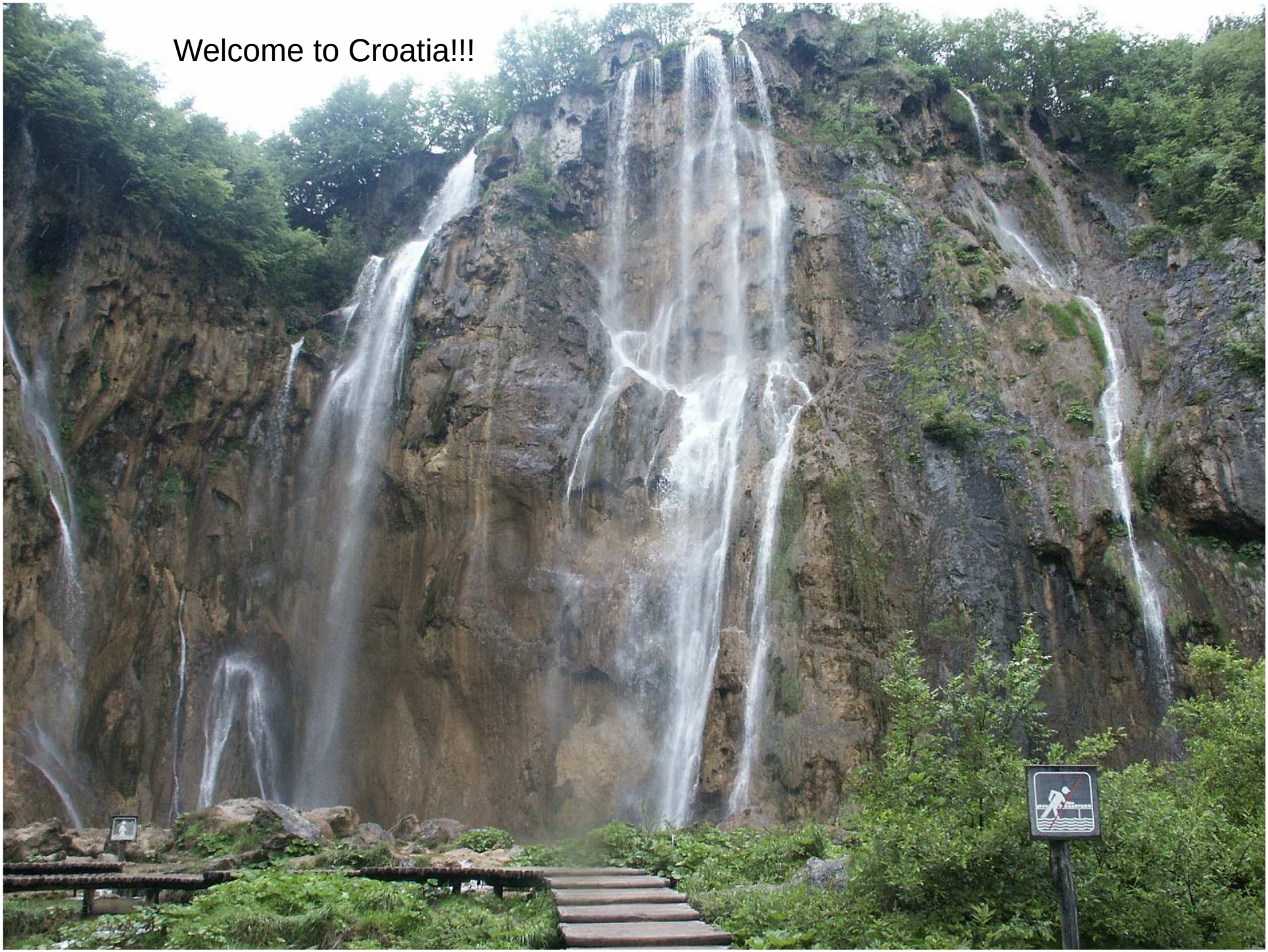


References

- Derringer GA et al. Am J Surg Pathol 2000;24:623-9
- WHO 2004
- Takano t et al. J Clin Endocrinol Metabol 2000;85:671-5
- Onal C et al. Ann Oncol 2011;22:156-64
- Lee SC et al. J Korean Surg Soc. 2011;81:374-9.

Thank you

for your attention !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