Thyroiditis in the differential diagnosis of lymphoma

2nd Pannonia Congress of Pathology
Siofok, Hungary, May 17-19, 2012

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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 secondary 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
Courtesy of Teacher and friend, Dpt of Pathology, The University of Kansas School of Medicine, Kansas City, Kansas, USA
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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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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

• WHO 2004
• Takano t et al. J Clin Endocrinol Metabol 2000;85:671-5
Thank you for your attention!
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