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Images in hematology-oncology

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40 year old female presenting with a solitary pulmonary nodule

CLINICAL HISTORY

A 40-year-old female patient was referred to our clinic because of a solitary pulmonary nodule incidentally found on her chest x-ray. She had been planned for a thyroidectomy because of multinodular goiter; however, pre-operative routine chest x-ray had revealed a 2 cm nodule with well defined margins in the left upper lobe (Figure 1). She had no complaints except intermittent palpitations. She had been on propyl-thiouracil treatment for hyperthyroidism for several years. She was a non-smoker and had no systemic diseases other than goiter and hyperthyroidism. Her daughter had been treated for Hodgkin's lymphoma. Physical examination was unremarkable. Routine laboratory tests were within normal limits. Anti-TSH receptor, anti-TPO, anti-thyroglobulin, and ENA antibodies were negative. Anti-nuclear antibody (ANA) was positive (1/80 spickled pattern). Computed tomography (CT) of thorax depicted no other nodules in lung parenchyma or lymphadenopathies (Figure 2). Abdominal CT was normal. The pulmonary nodule was excised surgically. Pathological examination demonstrated small lymphoid cells infiltrating lung parenchyma and bronchial mucosa (Figure 3). The cells showed positivity for CD20, CD43 and bcl-2, while CD3 was negative (Figure 4).

What is your diagnosis?

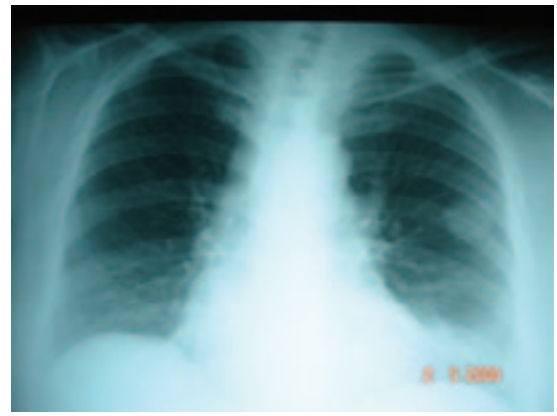

Fig 1. Solitary pulmonary nodule on chest x-ray

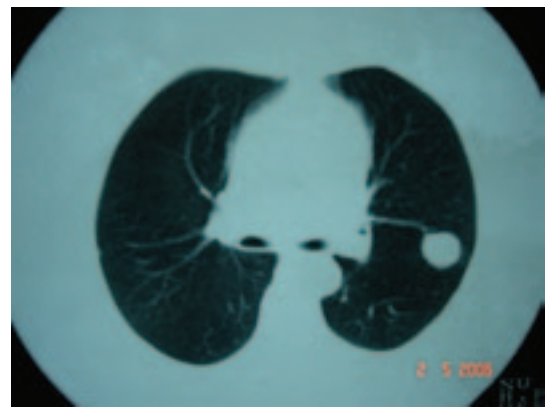

Fig 2. Solitary pulmonary nodule on CT scan

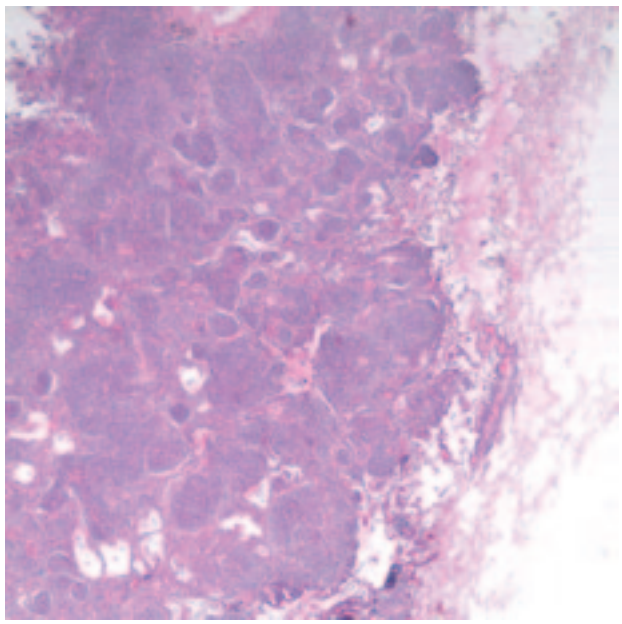

Fig 3. Hematoxylin-eosin staining of the biopsy specimen

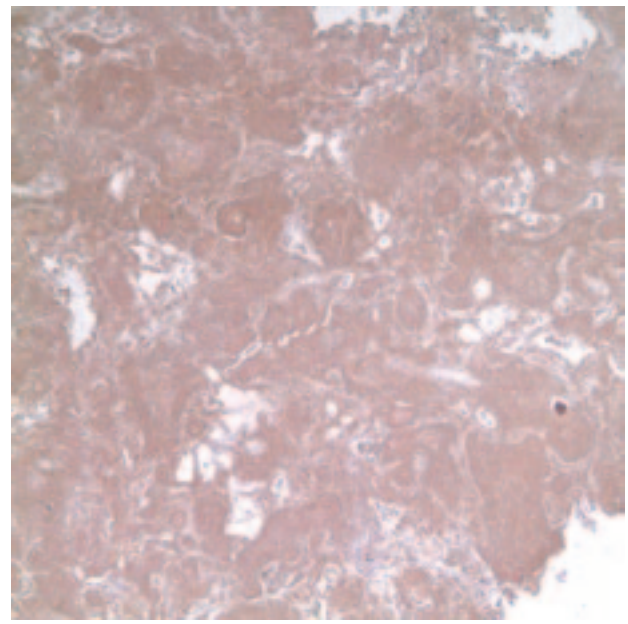

Fig 4. CD20 staining of the biopsy specimen

PATHOLOGIC DIAGNOSIS

Mucosa-associated lymphoid tissue (MALT) lymphoma.

DISCUSSION

Extranodal lymphomas are most frequently found in the gastrointestinal tract, and primary pulmonary lymphoma is extremely rare. Primary pulmonary lymphomas represent 3-4% of extranodal lymphomas and <1% of all non-Hodgkin's lymphomas (1). Most primary lymphomas of the lung arise from the MALT of the bronchus. They are now classified under marginal zone lymphomas according to the REAL classification (2). Most patients are asymptomatic at presentation and diagnosed incidentally by radiological pulmonary abnormalities. Cough, dyspnea and hemoptysis can rarely be seen. The lesions are usually multiple and bilateral on CT scans. Bronchoscopy is usually normal, particularly when the lesions are small. Surgical resection is the preferred treatment modality for localised tumors. Chemotherapy is reserved for patients with bilateral or extrapulmonary involvement, relapse or progression. Radiotherapy is rarely used (1,2). The differential diagnosis of solitary pulmonary nodules is extensive. Most solitary nodules are granulomas, hamartomas or lung cancer. Positron emission tomography (PET) is becoming a front-line imaging choice for the evaluation of solitary pulmonary nodules, with a sensitivity of 94% and specificity of 84% for nodules 1-3 cm in diameter (3,4). However MALT lymphomas usually can not be visualised with PET scan and a negative scan does not exclude MALT lymphoma (5).

Of note, autoimmune diseases can be seen in patients with MALT lymphoma. In one study, twenty-nine percent of the patients had an autoimmune disease preceding lymphoma (6). Autoimmunity markers of our patient were negative except ANA, which might be a harbinger of future SLE or a non-specific finding.

In conclusion, MALT lymphoma should be kept in mind as a rare but potentially curable entity in the differential diagnosis of patients with a solitary pulmonary nodule.

References

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