Lymphoma of Bronchus-Associated Lymphoid Tissue

To the Editor: We have read with great interest the clinical note of García et al[1] describing 2 cases of endobronchial bronchus-associated lymphoid tissue (BALT) lymphoma. The authors report that such a finding is extremely unusual at presentation, even in cases of advanced disease. We report another unusual presentation of this type of lymphoproliferative tumor.

A 68-year-old woman from the Dominican Republic who had been living in Spain for 12 years with no relevant medical history came to the emergency department complaining of fever, cough with green expectoration, and dyspnea. On physical examination, the patient was apparently in good general health, respiratory rate was 16 breaths per minute and heart rate was 106 beats per minute, temperature was 38 ºC and blood pressure was 100/65 mm Hg. No peripheral lymph node involvement was observed. Cardiopulmonary sounds were normal, as were the abdomen and lower-limbs upon examination.

The hemogram revealed normochromic normocytic anemia (hemoglobin, 11 g/dL), leukopenia due to neutropenia (3360/µL), and thrombocytopenia (84 000/µL). The smear showed slight clumping of erythrocytes into rouleaux—which resemble stacks of coins—and no alterations in granulocytes and platelets were observed. Biochemical parameters were normal, except for albumin (2.8 g/dL). The proteinogram showed a monoclonal band in the gamma region with a concentration of 3.4 g/dL (41.6%), which, after immuno-electrophoresis, was identified as immunoglobulin (Ig) M. Baseline arterial blood gas analysis determined that pH was 7.42, PaO_2 was 65 mm Hg, $PaCO_2$ was 36 mm Hg, bicarbonate concentration was 24.6 mmol/L, and oxygen saturation was 93%. The chest x-ray showed some alveolar infiltrates with air bronchogram in the right upper and middle lobes, as well as a slight blurring in the right hilum. A computed tomography scan detected slight but insignificant lymph node involvement in the retrocaval, pretracheal, right hilar, and subcarinal spaces. In the window of lung parenchyma, a mixed (alveolointerstitial) pattern of alveolar predominance on the right was detected in the superior and middle lobes, along with a micronodular interstitial pattern with diffuse bilateral involvement, predominating in the superior lobes (Figure). Fiberoptic bronchoscopy failed to find endobronchial alterations; transbronchial biopsies were taken from the most radiologically affected zones. Cytologies of bronchial aspirate and sputum were negative, as were the microbiological studies of the same samples. The transbronchial biopsies showed a lymphoproliferative interstitial infiltrate composed of small regularly shaped lymphocytes with hyperchromatic nuclei and without nucleoli, consistent with a diagnosis of malignant lymphoma of B-cell origin following immunohistochemical findings of CD-20 and

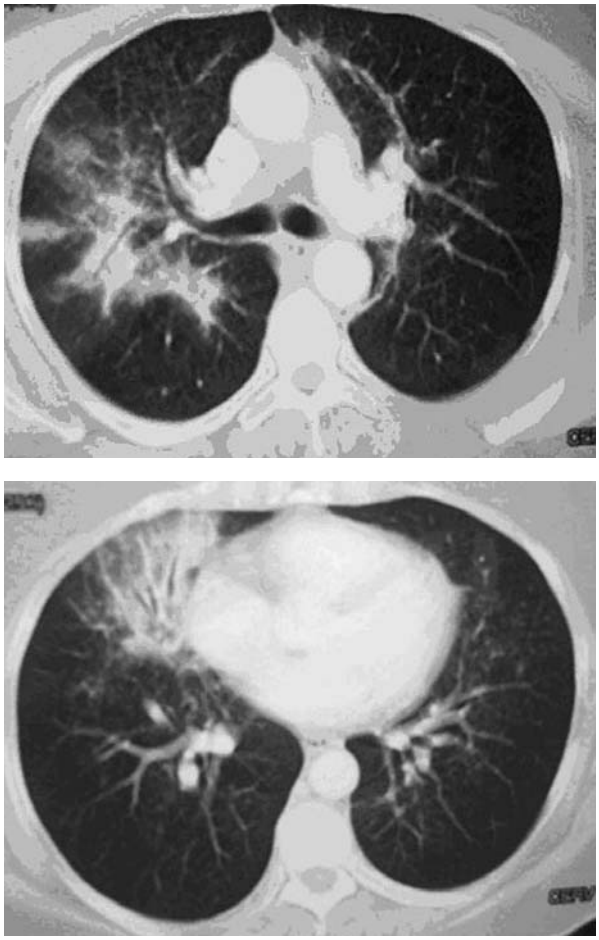

Figure. Two computed tomography images with the mixed pattern of alveolar predominance in the right and middle superior lobes. Spontaneous pneumomediastinum: a difficult diagnosis.

lambda positivity. We proceeded to investigate the extension of the tumor by bone marrow biopsy and aspiration; computed tomography scans of the cervical, abdominal, and pelvic zones were also performed. Alterations were found only in bone marrow, which was affected by B-cell lymphoproliferation.

B-cell malignant lymphoma accounts for 45% of a non-Hodgkin's lymphomas.[2] Many primary extranodal lymphomas, such as the pulmonary form, come from mucosa-associated lymphoid tissue (MALT). They are believed to arise from cells of lymphoid aggregates located at airway bifurcations, for which reason they are termed bronchus-associated lymphoid tissue (BALT). MALT lymphomas are observed mainly in adults aged 55 to 60 years of age with no distinction between males and females.[3] Various risk factors—such as cigarette smoking or an infection that produces BALT hyperplasia with subsequent neoplastic transformation, and immunological abnormalities such as Sjögren's syndrome and systemic lupus erythematosus—have been associated with MALT lymphomas.

BALT can manifest radiologically as multiple nodules or a solitary nodule, a parenchymatous consolidation, a focal or diffuse interstitial infiltrate, atelectasia, or pleural effusion.[4] The most frequent presentations are alveolar consolidation (60%) and well-defined nodules with air bronchogram (60%). Multiple images, as in the case reported, are observed in 70% of patients. Involvement is bilateral in as many as 60% of cases. However, nodular disease and bronchial dilation are only observed in 30%, and pleural effusion in 10% of cases.[5] Generally, parenchymatous changes develop slowly over months or even years, and nearly half of patients are asymptomatic when diagnosed. If disease is diffuse, as in the case of this patient, common symptoms are cough, dyspnea, hemoptysis, and obstructive pneumonia. The findings of fiberoptic bronchoscopy are often abnormal and bronchial stenosis is usually observed. Up to 20% of cases display IgM monoclonal gammopathy and a plasmacytoid differentiation overlapping Waldenström's macroglobulinemia.[6]

Lymphoproliferative processes in the lung sometimes remain unsuspected because they are rare, their range of presentation is wide, and their signs and symptoms overlap with those of other conditions such as infectious and inflammatory processes and other neoplasms. Thus, they must be always considered in the differential diagnosis of bronchopulmonary diseases.

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