Pulmonary Involvement by Diffuse Large B Cell Lymphoma: A Case Report and Review of the Literatures

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Abstract We report here a case of a man, 50 years old on admission, who presented with general deterioration, fever, cough, asthma, and was found to have a diffusion large B-cell lymphoma of the lung. The patient was misdiagnosed at first, at last we obtained definitive diagnosis by the biopsies with video-assisted thoracoscopic (VATS). Pulmonary involvement by diffuse large B cell lymphoma is rare. We report the case and review of the literatures so as to make a clearer know of the diasease.

Key words Pulmonary lymphoma; Diffuse large B cell

CASE PRESENTATION

a 50-year-old man was hospitalized due to fever, cough and asthma. The patient had no complaints of chills, joint pain/swelling or rash. On examination the patient appeared generally well, his temperature was 38.5°C and no dry rales or moist rales were found in both lung. Chest radiography showed multiple pulmonary nodules and consolidation without pleural effusions (figure 1A, B). Chest CT scan revealed bilateral non-calcified pulmonary nodules and masses without cavitation or necrosis, and areas of consolidation. Air bronchograms could be seen in the areas of consolidation. Multiple mediatstinal lymph nodes enlargement without calcification was revealed, which were light uniform enhanced without necrosis (figure 2A, B). The sedimentation rate and lactate dehydrogenase levels were elevated. Blood chemistry and hematological analysis were normal except for mild anemia. Bronchoscopy revealed narrowing of the posterior based subsegmental bronchi of the right lower lobe. Transbronchial biopsies revealed bronchial tissue with chronic inflammation. Special stains for fungi and mycobacteria were negative as was culture of bronchoalveolar lavage fluid. Our leading diagnoses were alveolar cell carcinoma with metastasis of mediastinal lymph nodes. After a month, a chest radiograph revealed worsening nodular infiltrates and focal areas of consolidation. A video-assisted thoracoscopic (VATS) wedge resection of the left lower lobe nodule was performed. Microscopic examination revealed pulmonary tissue with atypical smaller lymphocytes with focal necrosis. Immunohistochemical staining showed a lymphoid proliferation of predominately B-cell origin with CD20 positivity. The smaller lymphocytes had positive staining for LCA, L26, vimentin, and Bcl-6. CD3, ALK, CK and TTF-1 were negative staining. Stains for Ebstein Barr virus (EBV), bacteria, mycobacteria and fungi were all negative. At last, we got the definitive diagnosis which was pulmonary diffuse large B cell lymphoma(DBLBCL).

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DISCUSSIONS

Clinical features of pulmonary lymphoma

This is a case of pulmonary involvement in malignant lymphoma. Pulmonary involvement in malignant lymphoma is comparatively rare at initial presentation, occurring in some 10~15% cases, though as the disease progresses it becomes considerably more common. It is particularly frequent that patients relapse after treatment [1]. Pulmonary lymphoma can be classified three categories in terms of its origins: (1) primary lymphoma; (2)

secondary lymphoma; and (3) immununodeficiency−related lymphoma.

The clinical course is usually indolent, most patients being asymptomaitc at initial presentation. Some of the patients present with general deterioration such as fever, cough, asthma, etc. For the clinical symptoms of pulmonary lymphoma are atypical, it is difficult to make a correct diagnosis for it.

Radiologic manifestations of pulmonary lymphoma

Pulmonary lymphomas include non−Hodgkin´s lymphoma (NHL) and Hodgkin´s lymphoma (HL). Involvement of the lung appears to be three times as frequent in HL as it is in NHL. In HL the lung disease is almost invariably accompanied by visible intrathoracic adenopathy, whereas in NHL, isolated pulmonary involvement is not uncommon. If the mediastinal and hilar nodes have been previously irradiated, then recurrence confined to the lungs may be seen both HL and NHL. The radiographic appearance of lung involvement in malignant lymphoma vary. The usual patterns are: (1) one or more areas of pulmonary consolidation resembling pneumonia, (2) multiple nodules; and occasionally, (3) miliary nodulation or reticulonodular shadowing resembling lymphangitis carcinomatosa [1, 2]. The case we reported revealed simultaneously the first and the second patterns.

The areas of pulmonary consolidation, which may contain air bronchograms, may segmental or lobar in shape, but often they radiate from the hila or mediastinum without conforming to segmental anatomy, in keeping with the concept that extension into the lungs is by direct invasion from involved hilar or mediastinal nodes[3]. Peripheral subpleural masses or areas of consolidation without any visible connection to enlarge nodes in the mediastinum and hila are, however, common in both HL and NHL. Labar atelectasis caused by endobronchial lymphoma is occasionally encountered. But atelectasis as a result of extrinsic compression by enlarged lymph nodes is rare, with encasement rather than obstruction being the usual pattern of disease. Pleural effusions are usually unilateral and accompanied by visible intrathoracic adenopathy. In some cases they are probably due to venous or lymphatic obstruction rather than neoplastic involvement of pleura[3]. They frequently disappear once the mediastinal nodes have been irradiated.

Pulmonary involvement by DLBCL

Diffuse large B−cell lymphoma (DLBCL) is an aggressive malignancy, representing the most common histologic subtype of non Hodgkin´s Lymphomas (NHLs) [4]. Forty percent of patients with DLBCL present with extranodal disease involving skin, gastrointestinal tract,

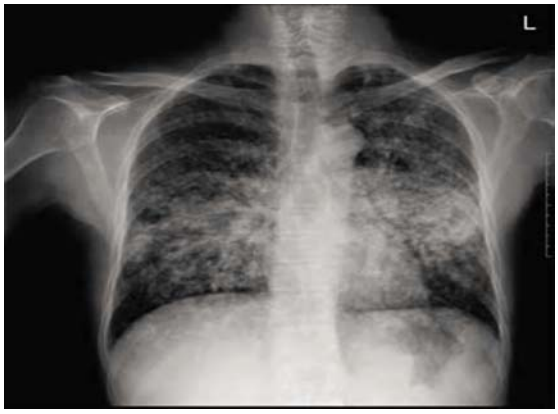

Fig. 1 Chest radiography showed multiple pulmonary nodules and consolidation.

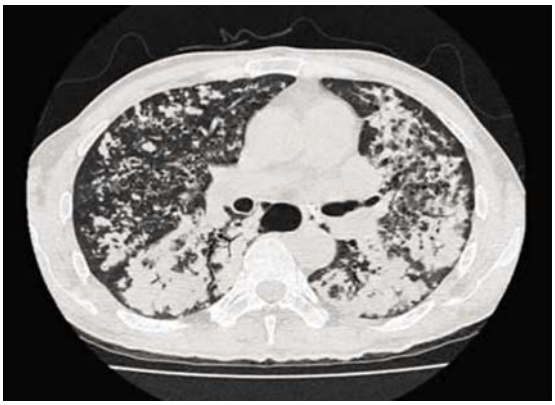

Fig. 2 Chest CT scan revealed bilateral non−calcified pulmonary nodules and masses, and areas of consolidation. Air bronchograms could be seen in the areas of consolidation. Multiple mediatstinal lymph nodes enlargement was revealed, which were light uniform enhanced without necrosis.

testis, bone, liver, adrenals and nasal cavity. The pulmonary presentation of DLBCL is a rare entity and represents a minority of cases of NHL. Most patients present with solitary pulmonary nodules or pleural based nodules with mediastinal adenopathy. But some of patients can present as multiple pulmonary nodules. We describe the case of DLBCL presenting as multiple pulmonary nodules and consolidation.

The differential diagnosis of pulmonary lymphoma

The usual radiographic problem in deciding whether the pulmonary abnormality is due to involvement by lymphomatous tissue or whether it is due to infection or a complication of therapy. Very rapid increase in the size of lymphomatous deposits in the lung, so rapid that the disease may be confused with pneumonia, which has been reported with high-grade NHL. Differentiating DLBCL from these diseases is critical as these diseases require different modes of treatment and have varying prognosis. It should be remembered that the pattern of pulmonary infection in patients with lymphoma is modified because they are immunocompromised hosts, owing either to their disease or, more often, to the drugs used for treating the disorder. In addition, a useful guideline is that if someone presents lymphoma and a pulmonary opacity, but no evidence of hilar or mediastinal disease, it is more likely that the opacity represents something other than Hodgkin´s lymphoma. A caveat here is that the patient should not previously have received radiation therapy to mediasinum [3].

Pathologic examination of biopsies is critical in making the diagnosis and should be pursued whenever possible. In many instances, a biopsy is the only way to estabilish the precise diagnosis.

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