

PRIMARY PULMONARY NON-HODGKIN'S LYMPHOMA

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SUMMARY

Primary non-Hodgkin's lymphoma of the lung is a rare pulmonary tumor. We report herein a 69-year-old man who was found to have a primary pulmonary lymphoma of a low grade B-cell marginal zone type and present the clinical features of these tumors.

Key Words: Lymphoma, Primary, Lung

ÖZET

Akciğerin Primer Non-Hodgkin Lenfoması

Akciğerin primer non-Hodgkin lenfoması seyrek görülen bir tümördür. Low-grade B-cell marginal zon tipinde primer pulmoner lenfoma saptanan 69 yaşındaki erkek hastayı sunmayı ve bu tümörlerin klinik özelliklerini tartışmayı amaçladık.

Anahtar Kelimeler: Lenfoma, Primer, Akciğer

Non-Hodgkin's lymphoma and Hodgkin's disease are malignant neoplasms of lymphoid tissue [1]. Although the lung is a frequent metastatic site for a Hodgkin's or non-Hodgkin's lymphoma, primary pulmonary lymphoma of the lung is extremely rare. Primary pulmonary non-Hodgkin's lymphoma comprise of only 0.4% of all lymphomas [2].

We report herein a case of a primary pulmonary lymphoma with a histological diagnosis of low-grade marginal zone B-cell lymphoma and discuss the clinical features of these rare pulmonary tumors.

Case Report

A 69-year-old man was referred with the diagnosis of a bronchogenic squamous cell carcinoma obtained by bronchoscopic biopsy at

another hospital. He presented with chest and back pain of two months duration. He has been a worker in a glass factory for 15 years and a smoker for 45 years. On physical examination, breath sounds were diminished on the left lower zones of the lung. In addition, he had an apparent pretibial edema on the right side, which was attributed to an angiography procedure, performed eight years before admission and hyperkeratotic lesions on the back of his foot. Laboratory data were within the normal limits. Chest X-ray showed a pneumonic consolidation on the left lower zone (Figure 1). On computed tomography (CT), a hypodense, solitary mass, measuring 6x4x3 cm was visible in the posterobasal segment of the left lower lobe (Figure 2). Metastatic work-up was negative. Bronchoscopy showed no endobronchial lesion.

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Cytologic examination of the bronchoalveolar lavage and sputum was not definitive. A left lower lobectomy with mediastinal lymph node dissection was performed. Histological examination showed a primary pulmonary lymphoma without any involvement of either

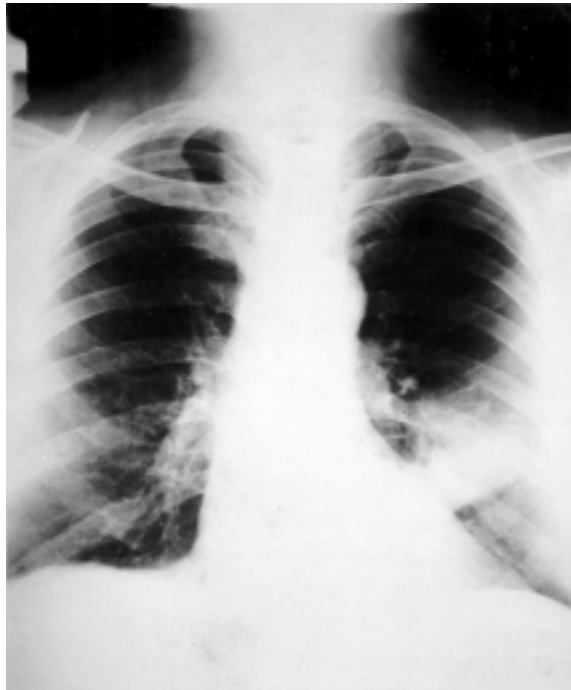


Figure 1. Chest X-ray showing an ill-defined mass in the left lower zone

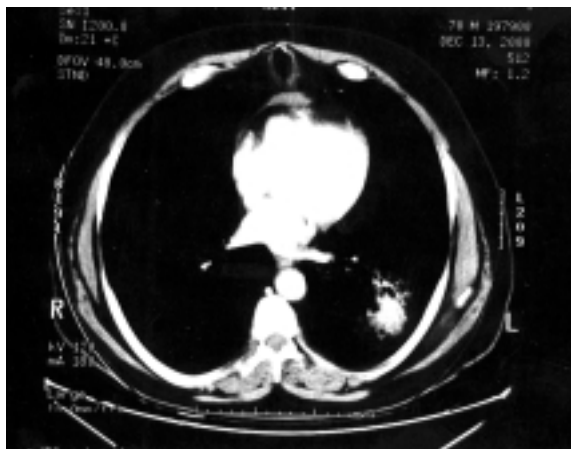


Figure 2. Computed tomography showing a heterogeneous mass in the left lower lobe with air bronchograms.

hilar or mediastinal lymph nodes (Figure 3). Immunohistochemical staining with CD20, CD23, CD 43, CD79a showed positivity on the lymphoid cells, and revealed a primary low-grade marginal zone B cell lymphoma of the lung (Figure 4). The patient was referred to medical oncology for further chemotherapy.

Discussion

Most primary lymphomas of the lung arise from the mucosa-associated lymphoid tissue (MALT) of the bronchus, which is believed to be an abnormal constituent of the human bronchial tree and an acquired tissue in response to long-term exposure to various antigenic stimuli such as smoking, infection, or autoimmune disorder [3]. Consistently, the finding that, MALT is not normally found in the stomach but is associated

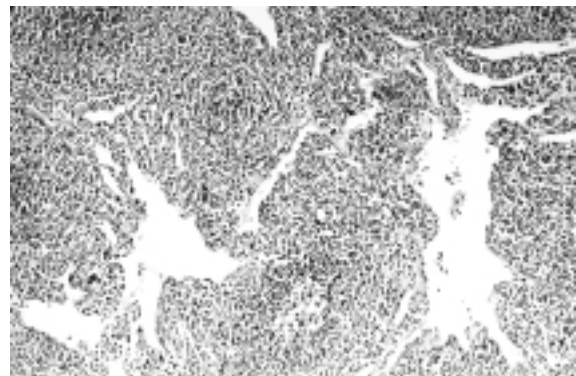


Figure 3. Peribronchial intense atypical lymphoid infiltration (HE x 50).

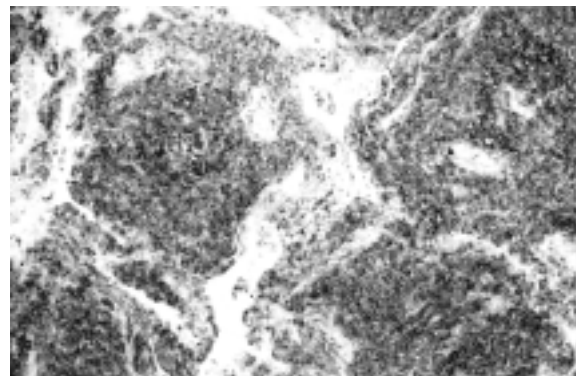


Figure 4. Atypical lymphoid cells showing positivity with B-lymphoid marker CD 79a (x 25).

with chronic *Helicobacter pylori* gastritis, supports this suggestion [4]. Reactive lymphoid proliferations such as pseudolymphoma, lymphoid interstitial pneumonitis, lymphomatoid granulomatosis, and follicular bronchiolitis are morphologically difficult to distinguish from primary malignant lymphoid tumors [3]. Recent work established that many of these lesions may actually be malignant lymphoma (5).

The advent of immunohistochemical techniques to detect monoclonality have resolved much of the controversy regarding the definition of these lymphoid tumors of the lung. A revised classification of lymphoid neoplasms including MALT lymphomas was proposed [6]. Currently, the staging classification used for these extranodal lymphomas is as follows [7]:

- Stage IE : Involvement of lung only (can be bilateral)
- Stage II 1E : Lung and hilar lymph nodes
- Stage II 2E : Lung and mediastinal lymph nodes
- Stage II 2EW: Lung and adjacent chest wall or diaphragm
- Stage III : Involvement of lung and of lymph nodes below diaphragm
- Stage IV : Diffuse involvement of one or more extralymphatic organs or tissues.

Most of the patients with primary pulmonary lymphoma are asymptomatic at presentation and the disease is often discovered on a screening chest radiograph. Symptoms, if present, are generally nonspecific except for a slight preponderance of respiratory abnormalities such as cough, dyspnea, chest pain, and hemoptysis [1]. Our case was symptomatic and presented with chest pain.

The roentgenographic appearance of pulmonary lymphoma is usually described as an alveolar mass or infiltrate with ill-defined margins and air bronchograms [8,9]. Although less common, rounded opacities or nodules [10] may appear as in the presented case. Thus, the roentgenographic findings are variable and can only suggest the possibility of lymphoma.

As a diagnostic procedure, bronchoscopy has a low diagnostic yield, because endoluminal lesions are quite rare. Analysis of bronchoalveolar lavage for tumor cell markers and with molecular techniques such as flow cytometry may be an aid in the diagnosis of pulmonary lymphoma [11,12]. Neither transthoracic needle biopsy nor mediastinoscopy is useful in the diagnosis [2]. Thus, surgical intervention, whether by thoracotomy or VATS, is required for diagnosis in the majority of patients seen with primary pulmonary lymphoma as in our case.

The role of surgery in the management of primary pulmonary lymphoma is to obtain a diagnostic yield and a therapeutic resection. Resectable tumors should be approached with an intent of a complete resection, whereas those, large and unresectable should be treated with limited resection such as wedge resection or even a biopsy procedure to obtain a sufficient tissue for histologic examination [2]. Hilar and mediastinal lymph node dissection should be carried out as a staging procedure. We have performed a curative resection as lobectomy in the presented case and hilar-mediastinal lymph nodes were free of tumor. The rate of local recurrence has been reported as high as 50% [13,14], and thus radical resections including pneumonectomies have been recommended [15]. However, extended resections or even postoperative chemotherapy do not offer better prognostic results [2].

A variety of histologic subtypes of non-Hodgkin lymphoma may manifest as primary pulmonary lymphoma. The most common histologic subtypes of primary pulmonary lymphoma are low-grade lymphoproliferative processes that are well-differentiated B-cell tumors that appear to arise from bronchus-associated lymphoid tissue (BALT). BALT forms part of the wider system of low-grade malignant lymphomas of MALT type such as those found in the gastric area. Pulmonary low-grade malignant lymphoma of MALT type tends to remain localized in the lung for long periods. This form may be referred as a subtype of marginal-zone B-cell lymphoma as in our case. The second most

frequent histologic type of non-Hodgkin lymphoma to involve the lung is diffuse large B-cell lymphoma [1].

Although optimal treatment has not been clearly defined, the prognosis of non-Hodgkin's lymphoma of the lung is favorable. Stage of disease or the presence of regional (hilar) lymph node metastases does not correlate with a worse prognosis [13,14], whereas histologic type of lymphoma should serve as a prognostic factor [16]. Malignant lymphomas arising from MALT remain localized until late in their natural history and thus carry a better prognosis compared with

lymphomas arising in lymph node tissue of similar stage [8,13]. True lymphomas of MALT are low-grade tumors with a slow, indolent course, and long-term survival is very likely [8,13,16]. Non-MALT types of lymphoma of the lung are generally intermediate or high-grade tumors with a worse prognosis, which may show transformation to a large cell type.

In conclusion, primary non-Hodgkin's lymphoma is a rare entity of the lung. An open thoracotomy is very likely to provide a diagnosis as well as a therapeutic resection.

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