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Bone Marrow and Multiple Extra-Pulmonary Relapses of Pulmonary Marginal Zone B-cell Lymphoma - A Case Report -

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Abstract

Pulmonary marginal zone B-cell lymphoma of the MALT type (P-MZL) is a subgroup of extranodal MZL that arises in a number of epithelial tissues. In Korea, MZL accounts for 17% of all B-cell lymphoma. P-MZL is less than 1% of all non-Hodgkin's lymphoma, and only 0.5~1% of primary pulmonary malignancies. The growth pattern of MZL is typically characterized by an indolent clinical course and long survival. Over its long survival duration, MZL presents frequent relapses, but bone marrow involvement of relapsed MZL is very rare. Here, we report a case of bone marrow, submandibular gland and axillary lymph nodes relapses of P-MZL after treatment with radiotherapy.

Key Words : Bone marrow, Marginal zone B cell lymphoma, Relapse

Introduction

Extranodal marginal zone B-cell lymphoma (MZL), also called low grade B-cell lymphoma of mucosa associated lymphoid tissue (MALT), is an extranodal lymphoma that arises in a number of epithelial tissues, including the stomach, salivary gland, lung, small bowel, and elsewhere [1,2]. It was originally often referred to as a "pseudo-lymphoma" because of its tendency to remain localized to the tissue of origin for long periods of time, but it is now appreciated that it is a clonal B cell neoplasm that frequently

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recurs locally and has potential for systematic spread and transformation to a high-grade B cell lymphoma [3]. Pulmonary marginal zone B-cell lymphoma of the MALT type (P-MZL) is a subgroup of extranodal MZL. In Korea, MZL accounts for 17% of all B-cell lymphoma. P-MZL is less than 1% of all non-hodgkin's lymphomas (NHLs), and only 0.5~1% of primary pulmonary malignancies. Although the growth pattern of MZL is typically characterized by an indolent clinical course and long survival, a lift-long follow-up strategy should be adopted to detect relapse of disease because of it's frequent relapses [4]. Over its long survival duration, MZL routinely involves frequent relapses, but bone marrow involvement of relapsed MZL is very rare [5]. Here, we report a case of bone marrow, submandibular gland and axillary lymph nodes relapses of P-MZL after treatment with radiotherapy and review literatures.

Case Report

A 71-year-old male patient presented to the emergency department with right infraauricular swelling that had begun about 1 month ago and which gradually increased over time. Four years ago, a mass was found in right upper lobe on chest CT scan which was taken to evaluate right sided pleural effusion. Biopsy was taken with video-assisted thoracoscopic surgery, and the diagnosis of P-MZL, limited stage IAE was obtained without regional lymph nodes involvement. We treated this patient with involved field radiotherapy for 5 weeks. He had been doing well without any signs of progression of disease for 4 years after radiotherapy. When he presented to the emergency department, initial vital signs were stable, with a blood pressure of 120/80 mmHg, heart rate of 78 beats/min, a respiratory rate of 18 breaths/min and no fever. Complete blood count (CBC) showed white blood cells, 7,120/㎕; hemoglobin, 10.5 g/dL; and platelets, 243,000/㎕. In physical examination, we could palpate 4x3 cm sized solid mass and there was mild tenderness on right infraauricular region. Neck CT scan showed somewhat enlarged right submandibular gland with an about 23 mm sized (axial long diameter) less intensely enhancing mass-like lesion and borderline sized lymph nodes in the right axilla. Chest and abdomen CT scan showed no significant interval change.

Biopsy of submanibular gland showed diffuse infiltrates of the small lymphocytes and lymphoepithelial lesion. Biopsy for axillary lymph node showed diffuse infiltrates of small lymphoid cells (Fig. 1-2).

Microscopic finding of the bone marrow showed a small lymphoid aggregate without germinal center. Immunohistochemical stain for lymphoid cells showed positive reaction to CD 20 and negative reaction to cyclin D1 (Fig. 3-4). We diagnosed this case as bone marrow and multiple extra-pulmonary relapses of P-MZL. Although we could not treat this patient becuase he did not want to have any treatment, he has been doing well without any signs of progression of disease.

Discussion

MZL is a distinct subgroup of NHL, which is typically characterized by an indolent

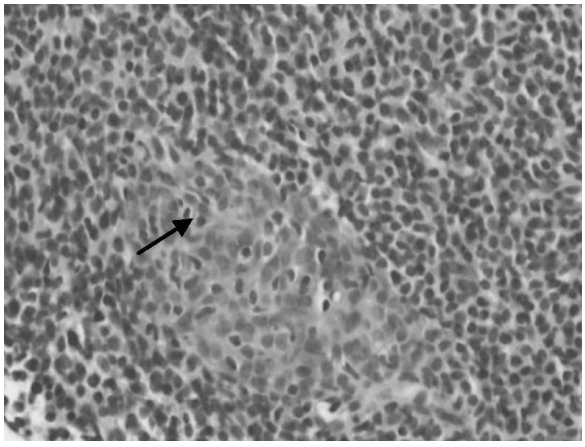

Fig. 1. Microscopic finding of the submanibular gland showed diffuse infiltrates of the small lymphocytes and lymphoepithelial lesion (H&E, x 400).

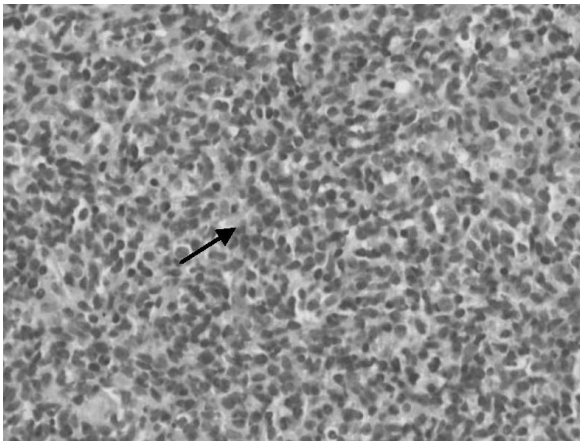

Fig. 2. Microscopic finding of the axillary lymph node showed diffuse infiltrates of small lymphoid cells (H&E, x 400).

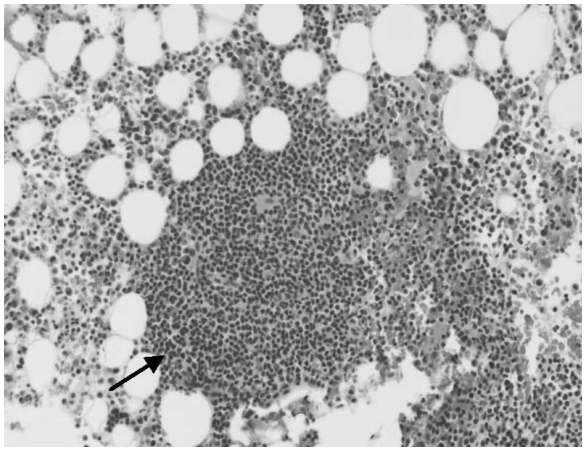

Fig. 3. Microscopic finding of the bone marrow showed a small lymphoid aggregate without germinal center (H&E, x 400).

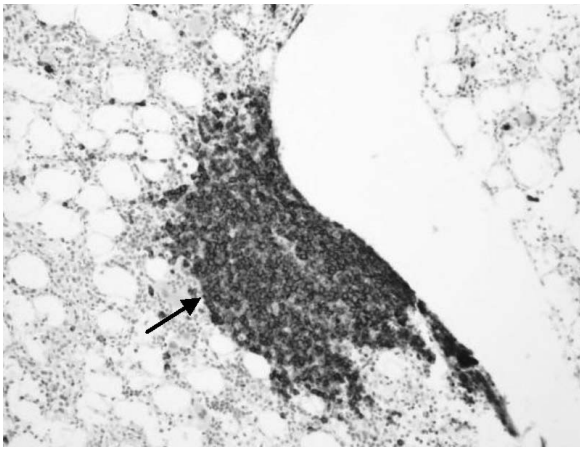

Fig. 4. Immunohistochemical stain for CD20 of the bone marrow showed positivity (CD20, x 200).

clinical course and long survival duration. Extarnodal MZL is an extranodal lymphoma that arises in a number of epithelial tissues, including the stomach, salivary gland, lung, small bowel, and elsewhere [6]. P-MZL is a subgroup of extranodal MZL. P-MZL occur most often between the sixth and seventh decade without significant gender preferences. The majority of patients are asymptomatic, but nonspecific symptoms, such as cough, chest pain or shortness of breath, may occur [7]. Smoking and chronic inflammatory conditions of the lung have been believed as etiological agents of P-MZL [8]. The growth pattern of P-MZL is typically characterized by an indolent clinical course

and long survival duration. P-MZL generally presents with limited stage, localized disease may be controlled with local treatment, and a high response rate can be achieved [9].

P-MZL routinely involves frequent relapses, but bone marrow involvement of relapsed MZL is very rare. According to the recent analysis, twenty out of sixty-one (32.8%) patients with P-MZL had relapse of disease at a median of 5.6 years and the estimated 5-year overall survival (OS) rate was 89.7%. Initial bone marrow involvement was detected in 3 patients [10]. The previous published trial on different types of extranodal MZL reported relapse rates of 37% (22.2% gastrointestinal and 48% nongastro-intestinal) at a median of 47 months. This trial included 86 patients with extranodal MZL (36 gastrointestinal and 50 non-gastrointestinal) who achieved CR after initial treatment. In this trial, five out of eight (62.5%) P-MZL patients had relapses of disease without bone marrow involvement. Only one patients with gastrointestinal MZL had relapse of disease at bone marrow [4]. In Korea, a recently published analysis on relapsed non-gastric MZL reported relapse rates of 79.2% at a median of 25.5 months from initial diagnosis. Of the 53 patients with stage I or II at diagnosis, 42 patients (79.2%) evidenced locoregional recurrence without bone marrow involvement. In addition to the 39 patients initially in advanced stage III or IV, a total of 50 patients were in advanced stage at relapse. the estimated 5-year OS was 84.3%. Initial bone marrow involvement was detected in 16 patients (17.4%) [5].

In conclusion, the growth pattern of P-MZL is indolent, the patients with P-MZL has long survival duration and frequent relapses of disease, but bone marrow involvement of limited stage MZL is very rare. A life-long follow-up strategy should be adopted to detect relapse of disease because of it's frequent relapses.

We report a case of bone marrow and multiple extra-pulmonary relapses of P-MZL after treatment with radiotherapy.

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