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A Case of Coincident Multiple Myeloma and Non-Hodgkin's Lymphoma

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A rare case of coexisting multiple myeloma and non-Hodgkin's lymphoma at the time of diagnosis is presented. The patient presented with petechiae, melena and weight loss. IgA lambda monoclonal gammopathy in the serum and free lambda chain in urine were documented. Bone marrow biopsy demonstrated an interstitial infiltration of neoplastic plasma cells coexisting with localized collection of noeplastic lymphoid cells composed of monotonous small lymphocytes with occasional cleaved nuclei. Immunophenotype of plasma cell was IgA lambda. The patient also had a jejunal mass, with biopsy proven malignant lymphoma, diffuse small cleaved cell type. The tumor was diffusely positive for pan-B marker. After chemotherapy, the IgA lambda monoclonal protein decreased and the patient improved. This case suggest. that the seound B-cell neoplasm may have evolved by transformation of an original neoplastic clone, or that malignant tumors may be polyclonal at onset. Definitive diagnosis and staging of each disorder is important for proper management.

Key Words : *Multiple myeloma, Non-Hodgkin's lymphoma, Monoclonal gammopathy*

INTRODUCTION

Multiple myeloma (MM) and non-Hodgkin's lymphoma(NHL) are lymphoproliferative diseases. The occurrence of both MM and other B cell lymphoproliferative disorder in the same patient is very vare and only a few cases have been described previously[1-6]. We report here a case of a patient who had both MM and NHL with IgA lambda monoclonal gammopathy at the time of presentation and we discuss the possible pathogenetic mechanism of the two disorders.

CASE REPORT

A 58-year-old man presented with lower extremity petechiae, melena and weight loss during the previous 1 year. On examination he appeared acutely ill and pale. There was no adenopathy or hepatosplenomegaly. Complete blood count showed hemoglobin 8.3g/dl, protein 7.2g/dl, albumin 2.0g/dl, creatinine 0.9mg/dl. Peripheral bood smear revealed moderately increased Rouleaux formation and presence of plasma cells. Chest X-ray showed minimal pleural effusion in both hemithoraces. Serum electrophoresis revealed a monoclonal peak in the gamma globulin region, identified IgA lambda on immunoelectrophoresis. Free lambda light chain was present in the urine as well(11mg/dl). Serum IgG was 333mg/dl, IgA 5850mg/dl, IgM 52mg/dl. Skeletal X-ray survey demonstrated no osteolytic lesion.

Bone marrow aspiration smears revealed 0.6% of plasmablasts and 21.8% of plasma cells and the histological examination demonstrated a diffuse infiltration of atypical plasma cells coexisting with localized collections of monotonous neoplastic lymphoid cells(Fig. 1, 2). Surface and intracytoplasmic immunoglo bulin were evaluated by a direct immunofluo rescence method using goat-antihuman Ig labeled with FITC. Immunofluorescent studies revealed lymphoid popula-

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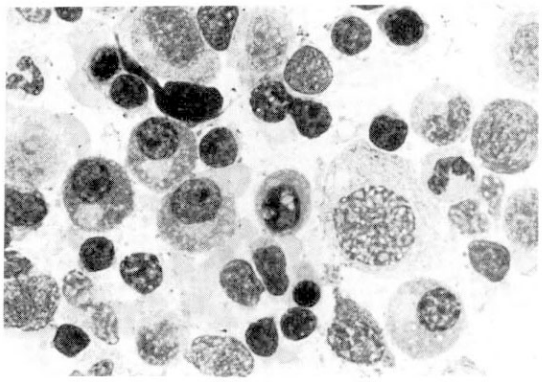

Fig. 1. Bone marrow aspiration smear reveals moderately increased number of neoplastic plasma cell(Wright X 1000).

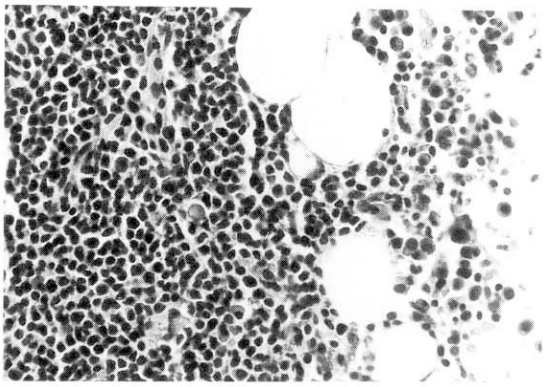

Fig. 2. Bone marrow biopsy reveals localized collections of small lymphocytic lymphoma cells and interstitial infiltration of neoplastic plasma cell (H. E X 400).

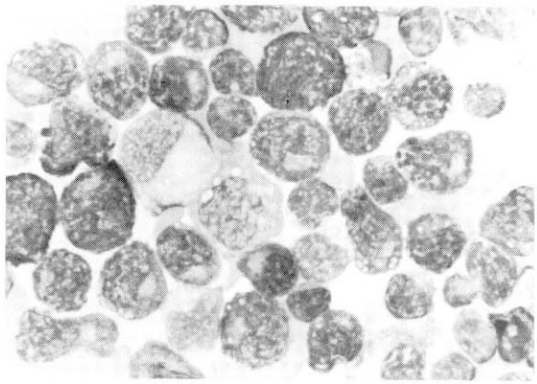

Fig. 3. Cytospin slide of pleural fluid shows mixed infiltrations small lymphocytic lymphoma cells and malignant plasma cells(Wright X 1000).

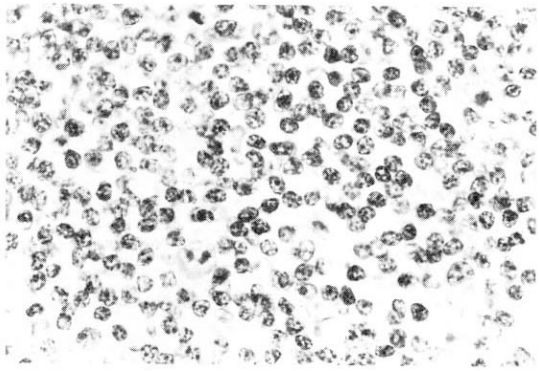

Fig. 4. Biopsy of mesenteric lymph node reveals malignant lymphoma of diffuse small cell type.

tions with bright surfacefluorescence for IgA lambda, as well as the presence of IgA lambda in the cytoplasm of plasma cells. Pleural fluid contained atypical plasma cells and neoplastic small lymphocytes(Fig. 3) and its immunoelectrophoresis revealed IgA lambda monoclonal gammopathy. Esophagogastroduodenoscopic examination was normal. Contrast enhanced small bowel radiography demonstrated only mucosal irregularities and luminal narrowing of the jejunum. Abdominal CT scan with oral contrast revealed an irregular mass in the jejunum with multiple lymph node enlargement. Exploratory laparotomy was performed, revealing anunresectable mass in the jejunum and a small amount of ascites. The characteristics of ascites was similar to the pleural fluid. Biopsy of mesenteric lymph node disclosed malignant lymphoma of diffuse small cell type(Figi. 4). and its immunochemical studies showed diffuse positivity for pan-B marker. The patient was treated with combination chemotherapy of cyclophosphamide, vincristine and prednisolone. The IgA lambda monoclonal protein has diminished and the patient's general condition has improved. There was no further bleeding from intestine.

DISCUSSION

Multiple myeloma(MM) is the major malignancy of plasma cells. Patients with MM can present with a variable spectrum of clinical features and different stages of the disease[7]. MM is a disease in which approximately 99% of patients have a monoclonal protein in the serum and/or urine. This has led to the prevailing concept that myeloma is monoclonal at the cellular level[6].

Although lymphomas are usually neoplasms of lymphatic tissues, substantial numbers of non-

Hodgkin's lymphoma arise in other tissue. Bone marrow biopsy may be diagnostic in patients without peripheral lymphadenopathy. Bartl et. al. found the incidence of bone marrow involvement in approximately 65% of non-Hodgkin's lymphomas(NHL) at the time of diagnosis[8].

In this case, the patient fulfilled criteria for MM with IgA lambda monoclonal gammopathy and bone marrow plasmacytosis[7]. In the bone marrow biopsy, there were localized collection of malignant lymphocytes in addition to the malignant plasma cells. Mesenteric lymph node biopsy revealed NHL.

The occurrence of both MM and NHL in our patient implies several possible pathogenetic mechanisms. First, one malignant disease may evolve from anthor. The malignant B cell lymphoma clone may mature giving rise to MM. A comparison of the immunologic phenotype of both MM and NHL in a patient is needed to reach meaningful conclusions. In our patient, where monoclonal Ig synthesized by both cell types had the same type of light chains, we performed a study with anti-idiotype reagents; idiotypic determinants expressed by serum and intracellular plasmacytic Ig were detectable on the surface Ig of lymphoma cells. These findings suggest the possibility that the lymphoma cells transformed into plasma cells. On the other hand, the development of high grade malignant lymphoma in patient with chronic lymphocytic leukemia was first reported by Richter in 1928 and transformation to high grade lymphoma is now a well-known event in other low grade malignancies of the B cell lineage[9]. The malignant transformation of MM has rarely been reported. During the last decade, patients with advanced MM survive longer due to intensified chemotherapy and improved supportive care. This increased survival has permitted the development and improved the chance of observing transformation of MM to high grade malignant lymphoma. It is possible that cytotoxic treatment per se may promote transformation[10]. Another possible mechanism is that both malignancies are different manifestation of original neoplastic clone. In 1982, Bryant et. al., reported plasma cell myeloma in a patient with a cutaneous T-cell lymphoma[3]. In 1986, Gran et. al., described a patient with coincident MM and NHL with 2 serum monoclonal immunoglobulin[2]. They suggest that the rare association of two diseases represents different manifestations of a unique clonal disorder which affects the B cell precursor. Although it would be rare, a possibility of independent of two infrequent malignancies at one time exists.

In terms of patient management, treatment must be directed to the more life-threatening condition. In our case, lymphoma was a more serious condition because of intestinal bleeding.

This case offers additional support to the theory of malignant transformation of MM and NHL. Opportunities to study and understand the unique natural history and evolutional dynamics for this transformation are rare. We would recommend further multicenter comparisons of slimilar cases in a broad effort to better define this complicated disease process.

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