

A Case of Floral Variant of Follicular Lymphoma

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Abstract

Floral variant of follicular lymphoma is uncommon and it shows floral appearance caused by atypical lymphocytes that irregularly invade and invaginate into the germinal center. [1] A 59 year-old man presented with incidentally found peribronchial lymph node by chest X-ray. It had been hard to biopsy so the patient received lobectomy of the left lower lung. Microscopic findings were similar to lymphoepithelioma-like carcinoma or metastatic carcinoma in lymph nodes. The tumor showed irregularly shaped germinal center-like lesion, which look like progressive transformation of germinal center. Immunohistochemical stains showed positive for CD20, bcl-6, CD 10 and negative for CD3, CD5 and bcl-2. We treated this patient with CHOP chemotherapy regimen. Initial CT scan revealed an enlarged lymph node at the medial basal segment of the left lower lobe of the lung. Follow up chest CT scan after treatment revealed complete resolution of the tumor mass. Floral variant of follicular lymphoma was first described in 1987 by Osborne and Butler. [3] The histologic features are similar to those of progressive transformation of germinal center (PTGC) and nodular lymphocyte predominant Hodgkin lymphoma (NLPHL). Clinical presentation and subsequent clinical course of the floral variant of follicular lymphoma are not different to usual cases of follicular lymphoma. [4] Our case was diagnosed as a floral variant of follicular lymphoma by histologic feature. It was treated by excisional biopsy and chemotherapy.

Key Words : CHOP, Follicular lymphoma, Marginal zone B-cell lymphoma, Nodal marginal zone lymphoma

Introduction

Follicular lymphoma is the most common type of the indolent non-Hodgkin lymphomas in western countries. It is defined as a lymphoma of follicle center B-cell, which has at least a partially follicular growth pattern. Immunophenotype can help the diagnosis of follicular lymphoma. All cases show expression for HLA-DR, CD19, CD20, CD79a, CD21 and CD10, and negative for CD5, CD43 and CD11c. CD23 expression is variable. However, follicular lymphoma has less common morphologic variants. The diagnosis is based on a combination of the morphologic and immunophenotypic findings. Floral variant of follicular lymphoma is uncommon. It shows floral appearance caused by atypical lymphocytes that irregularly invade and invaginate into the germinal center. There is no general consensus regarding the treatment. But Its clinical course and treatment are not different from usual cases of nodal marginal zone lymphoma. Many of the initial treatment was evaluated alkylator-based therapy. Complete response rates with single agent or combination therapy with alkylating agents (eg, CHOP) have ranged from 30 to 60 percent.

Case Report

A 59-year-old man presented to a local hospital because of a lobulated mass on chest PA. He had no specific symptom and any other history of fever, night sweat or weight loss. A physical examination was unremarkable. Laboratory test was all within normal range. The tumor was incidentally founded on chest PA. And it was located at a peribronchial

lymph node at the medial basal segment of the left lower lobe on chest CT. F-18 FDG whole body scan image showed an increased uptake of FDP (SUV max: 8.2) in the lobulated mass. There was no abnormal FDG uptake in other areas, except mass. There was no metastatic lymph nodes (Fig. 1).

It was hard to do biopsy because of location of the mass. We performed excisional biopsy and left lower lobectomy. The microscopic findings were similar to lymphoepithelioma-like carcinoma or metastatic carcinoma in the lymph nodes. The tumor revealed irregular shaped germinal center-like lesion, which looked like progressive transformation of the germinal center (Fig. 2A). Immunostaining of the lymph nodes showed positive reactivity for CD20, bcl-6 and CD 10, but negative for CD3, CD5 and bcl-2 (Fig. 3). Finally, the tumor was diagnosed as floral variant follicular lymphoma,

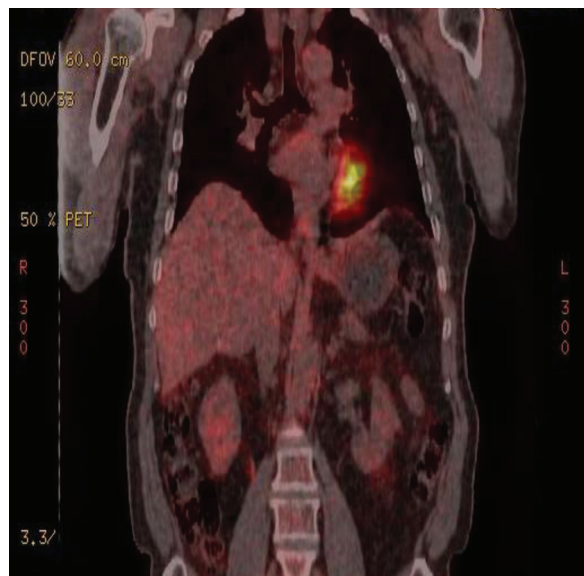


Fig. 1. F-18 FDG whole body scan image shows an increased uptake of FDG (SUV max : 8.2) in a lobulating mass at the medial basal segment of the left lower lobe of the lung.

stage IA grade 3a (Fig. 2B).

We treated this patient with CHOP chemotherapy regimen. CHOP regimen was composed of cyclophosphamide 750 mg/m², vincristine 1.4 mg/Kg, adriamycin 50 mg/m² and prednisolon 100 mg. CHO was covered on day 1 and prednisolon was covered on day 1 to 5. He got total 4 cycle of CHOP for 4 months. Follow-up chest CT scan revealed complete resolution of the tumor lesion (Fig. 4).

Discussion

Follicular lymphoma is the most common type in the indolent non-Hodgkin lymphomas. In western countries, it is defined as a lymphoma of follicle center B-cells (centrocytes and centroblasts), which has at least a partially follicular growth pattern [1,2]. Especially floral variant of the follicular lymphoma shows floral appearance caused by atypical lymphocytes that irregularly invade and invaginate into the germinal center [3]. Kojima *et al.* [4] described

two histological subtypes of the floral variant of follicular lymphoma. One subtype is a macrogerminal center pattern. The character is that the mantle zone lymphocytes are invaginated into the neoplastic germinal center. The other subtype is a microgerminal center pattern with massive invasion of the mantle zone lymphocytes. Neoplastic germinal center of microgerminal center type is almost complete breakage because of massive invasion. Floral variant of the follicular lymphoma was first described in 1987 by Osborne and Butler [3]. The histologic features are similar to those of progressive transformation of germinal center (PTGC) and nodular lymphocyte predominant Hodgkin lymphoma (NLPHL). In follicular lymphomas, there remains normal reactive germinal centers and most of the nodules consist of monotonous lymphoid cells without tangible body macrophages. Lymphocytic and/or histiocytic Reed-Sternberg cell (L&H cell) which are specific for NLPHL are absent [5]. Overexpression of bcl-2 is frequently seen in the follicular

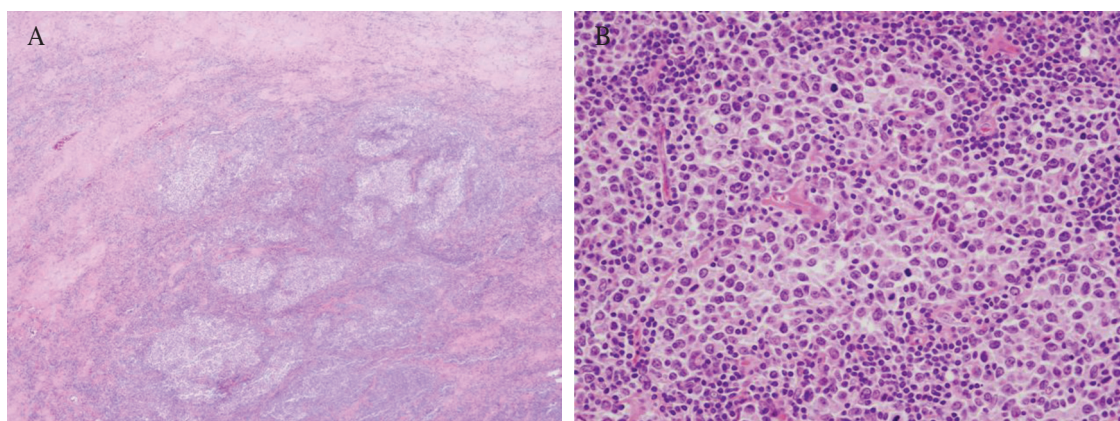


Fig. 2. Microscopic findings of the tumor lesion. Low magnification of the tumor shows an ameboid or floral configuration (A). High magnification of an irregular shaped nodule shows an irregular shaped sheet of the larger cells infiltrated by small round lymphocytes. High magnification of the nodule shows sheets of centroblasts, there are admixed centrocytes (grade 3a) (B).

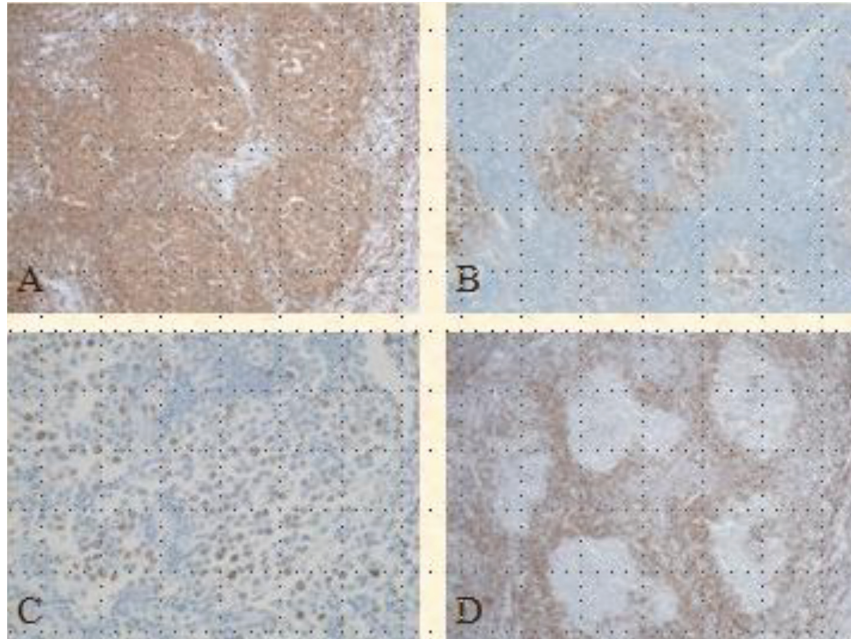


Fig. 3. Immunohistochemical stains the large atypical cells in the irregular nodule shows positive for CD20 (A), CD10 (B), and Bcl-6 (C) and negative for Bcl-2 (D).

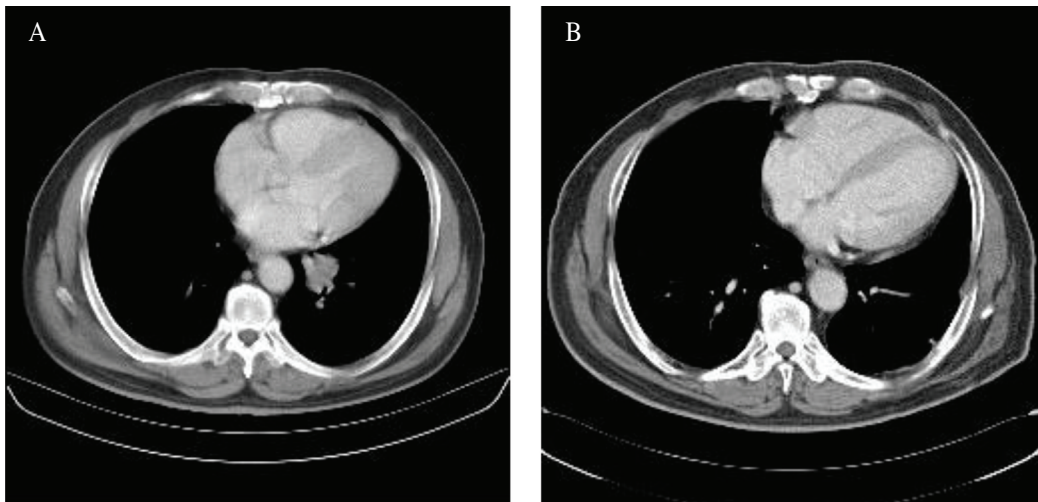


Fig. 4. The chest CT before left lower lobectomy shows a tumor which is located at the medial basal segment of the left lower lobe of the lung (A). Follow-up chest CT after left lower lobectomy shows no evidence of local recurrence (B).

lymphoma. PTGC shows only focal expression for bcl-2 [6]. Follicle center cells are positive for CD10 and bcl-6. Sometimes bcl-2 protein is not expressed in the grade 3 follicular

lymphoma. Dunphy *et al.* [5] reported two cases of flow cytometric findings in the floral variant of follicular lymphoma. In one case of them, mantle cells obscured monoclonality in

the lymphocyte region. Clinical presentation and subsequent clinical course of the floral variant of follicular lymphoma are not different from usual cases of follicular lymphoma [7]. Generally rituximab is a viable treatment option in patient with follicular lymphoma. It is a standard first-line treatment option when rituximab is combined with cyclophosphamide, doxorubicin, vincristine and prednisone (CHOP) chemotherapy [8]. Clinically, the 'floral variant' of NMZBL shows usually a localized disease, good general status and good prognosis [9]. However, it has been postulated that follicular lymphoma with marginal zone differentiation is a high-risk variant of follicular lymphoma. It reveals poorer disease-free and overall survival rate than for typical follicular lymphoma [10-12]. Kojima *et al.* [4] reported two cases of floral variant of follicular lymphoma containing marginal zone B-cell component and showing worse prognosis compared to usual follicular lymphoma.

But our case was founded in early stage. The tumor was completely excised and treated CHOP chemotherapy. There was no recurrence of the lymphoma on the last follow-up chest CT.

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