Successful Radiation Therapy for Primary Cutaneous Follicle Center Lymphoma

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Abstract
Primary cutaneous follicle center lymphoma (PCFCL) accounts for the majority of primary cutaneous B-cell lymphomas. We report a 60-year-old woman with PCFCL. She had a red nodule (25 × 25 mm) on the right side of the lower jaw. She was diagnosed with PCFCL by skin biopsy. And then, she was treated with radiation therapy (total 30.6 Gy), which completely eliminated the nodule. Our case suggests that radiation therapy may be a first choice for PCFCL patients with a solitary lesion or localized lesions.

Introduction
Primary cutaneous B-cell lymphoma is classified into three groups: extranodal marginal zone lymphoma of mucosa-associated lymphoid tissue (MALT lymphoma), primary cutaneous diffuse large B-cell lymphoma (PDLBCL), leg type, and primary cutaneous follicle center lymphoma (PCFCL) [1]. PCFCL accounts for the majority of primary cutaneous B-cell lymphomas [2]. Here, we report a patient with PCFCL who was successfully treated with radiation therapy.

Case Presentation
A 60-year-old woman without any remarkable past history, including drug use, noticed a small red nodule on the right side of the lower jaw approximately 3 years prior to the first consultation, at which point the nodule had enlarged to 25 × 25 mm. The surface of the nodule was red and smooth without ulceration (Figure 1a). Skin biopsy of the nodule demonstrated a dense and thick proliferation of mononuclear cells throughout the dermis and subcutaneous tissue (Figure 1d). The majority of cells were small lymphocytes, but we also observed a follicular structures, comprising centrocyte-like cells with cleaved nuclei (Figure 1g). Immunohistochemical staining demonstrated that the proliferating mononuclear cells were diffusely positive for CD20 (Figure 1e). The follicular center cells expressed CD5, CD10, CD21, Bcl-2, and Bcl-6 (Figure 1f, 1h, and 1i), indicating that the follicular structures was not reactive growth. She had a normal lactate dehydrogenase level of 206 IU/L (normal ≤ 229 IU/L). FDG positron emission tomography/computed tomography examination showed pathologic FDG uptake in the right lower jaw (the standardized uptake value max was 5.3; Figure 1b). IgH-JH gene rearrangement was detected by Southern blot. However, the 14;18 translocation (IGH/BCL2) was not detected by fluorescence in situ hybridization. She was diagnosed with PCFCL and treated with radiation therapy (total 30.6 Gy), which completely eliminated the nodule (Figure 1c).

Figure 1: (a) Red nodule of the right lower jaw. (b) Pathologic FDG uptake in the right lower jaw by positron emission tomography. (c)
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The right lower jaw 4 months after radiation therapy. (d) Histopathology of nodule (H&E stain; original magnification ×12.5, scale bar=500 μm). (e, f) CD20 and CD21 immunohistochemistry of the nodule (original magnification ×40, scale bar=500 μm). (g) Histopathology of the follicular center (H&E stain; original magnification ×400, scale bar=20 μm). (h, i) Bcl-2 and Bcl-6 immunohistochemistry of the follicular center (original magnification ×200, scale bar=40 μm).

Discussion

PCFCL typically presents with solitary or grouped firm erythematous plaques or tumors. Common sites of PCFCL are the head, neck, and trunk. About 5% of PCFCL patients have lesions on the legs, which are associated with a poor prognosis [2]. It has been reported that 10% of PCFCL cases harbor the 14;18 translocation (IGH/BCL2); [3] however, this translocation was not present in our case.

PCFCL shows a good prognosis (5-year disease-specific survival (DSS) of 95%). MALT lymphoma also shows a good prognosis (5-year DSS: 98%), while the 5-year DSS of PDLBCL, leg type is 50% [2]. However, PCFCL patients who have lesions on the legs have a poor prognosis (5-year DSS: 20%) [2]. For treatment, PCFCL patients with a solitary lesion or localized lesions may be treated with radiation therapy or surgical excision, although PCFCL patients with leg lesions may undergo more intensive treatment [2]. It has been reported that the dose range of irradiation is normally between 20 and 30 Gy [4]. In our case, surgical excision was not performed for cosmetic reasons. Radiation therapy (total 30.6 Gy) successfully treated our patient with a good cosmetic result. Our case suggests that radiation therapy may be a first choice for PCFCL patients with a solitary lesion or localized lesions to improve treatment and cosmetic results.

Conflict of Interests

Authors declare none.

References