ORIGINAL ARTICLE

Atypical clinical presentation of primary and secondary cutaneous follicle center lymphoma (FCL) on the head characterized by macular lesions

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Background: Primary cutaneous follicle center lymphoma (pcFCL) usually presents with reddish nodules, plaques, and tumors on the head and neck or the back.

Objective: We sought to describe a peculiar clinical presentation of pcFCL and secondary cutaneous follicle center lymphoma (FCL).

Methods: We report a series of 13 patients (7 male and 6 female; median age 58 years, mean age 58.2 years, age range 26-83 years) with either pcFCL (11 patients) or secondary cutaneous FCL (2 patients) presenting with lesions on the head deviating from the classic clinical manifestations characterized by plaques and tumors.

Results: All patients presented clinically with diffuse, ill-defined, partly hypochromic, partly erythematous macules or with inconspicuous lesions located predominantly on the scalp and forehead. Dimension ranged between 4 to 5 cm^2 and greater than 30 cm^2. The initial diagnosis was never cutaneous lymphoma, and all patients received various diagnoses including rosacea, alopecia, erysipelas, discoid lupus erythematosus, angiosarcoma, *Borrelia* infection, or sarcoidosis. Histologic examination confirmed the diagnosis of FCL in all patients.

Limitations: Small number of cases and retrospective study design are limitations.

Conclusions: This clinical presentation of both pcFCL and secondary cutaneous FCL is unusual and represents a pitfall in the clinical diagnosis. Dermatologists should be aware of this clinical variant of FCL to establish a timely diagnosis and treat patients properly. (J Am Acad Dermatol http://dx.doi.org/10.1016/j.jaad.2016.05.039.)

Key words: alopecia; cutaneous B-cell lymphoma; diffuse macule; large cell lymphocytoma; primary cutaneous follicle center lymphoma; secondary cutaneous follicle center lymphoma.

Primary cutaneous follicle center lymphoma (pcFCL) is defined as the neoplastic proliferation of germinal center cells confined to the skin.[1,2] pcFCL is listed as a specific entity in both the 2005 European Organization for Research and Treatment of Cancer (EORTC)-World Health Organization (WHO) classification of

Abbreviations used:

EORTC:	European Organization for Research and Treatment of Cancer
FCL:	follicle center lymphoma
pcFCL:	primary cutaneous follicle center lymphoma
WHO:	World Health Organization

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primary cutaneous lymphomas and the 2016 WHO classification of tumors of hematopoietic and lymphoid tissues.[1,2]

pcFCL presents clinically with erythematous plaques and tumors located mainly on the head and neck and on the trunk.[1-3] A distinct presentation with plaques and tumors on the back surrounded by erythematous macules and papules expanding centrifugally around the central tumors has been described as "reticulohistiocytoma of the dorsum" or "Crosti lymphoma."[4-6]

We report a series of 11 patients with pcFCL and 2 with secondary cutaneous follicle center lymphoma (FCL) presenting with unusual clinical manifestations characterized by diffuse, ill-defined, partly hypochromic, partly erythematous macules or with inconspicuous lesions located predominantly on the scalp and forehead.

CAPSULE SUMMARY

- Cutaneous follicle center lymphoma usually presents with plaques and tumors.
- We report a clinical variant of follicle center lymphoma characterized by macules or inconspicuous lesions on the head.
- This clinical presentation of follicle center lymphoma can be misdiagnosed as various conditions including rosacea, alopecia, erysipelas, discoid lupus erythematosus, angiosarcoma, or sarcoidosis.

METHODS

Data from 13 patients observed between 1998 and 2014 (7 male and 6 female; median age 58 years, mean age 58.2 years, age range 26-83 years) with pcFCL were retrieved from the lymphoma database of the Research Unit of Dermatopathology, Department of Dermatology, Medical University of Graz (Austria). The study was approved by the Ethic Committee of the Medical University of Graz. Clinical photographs were available for all patients. At least 1 skin biopsy was performed in all cases; in 6 cases more than 1 biopsy specimen was available for review. The diagnosis was made according to criteria published in the 2005 WHO-EORTC classification for cutaneous lymphomas and the 2008 WHO classification of hematologic diseases.[1,2] Primary skin involvement was defined as the presence of cutaneous lymphoma without visceral or nodal involvement at the time of the diagnosis after complete staging procedures (including for all patients: complete blood cell count, computerized tomography of the chest and of the abdomen, sonography of the superficial lymph nodes, and bone-marrow biopsy specimen). All pcFCL cases were staged using the current International Society for Cutaneous Lymphomas-EORTC staging classification for primary cutaneous lymphomas other than mycosis fungoides and Sézary syndrome.[7]

Histology

Biopsy specimens were fixed in 10% buffered formalin and subsequently embedded in paraffin. Sections were stained with hematoxylin-eosin for routine histopathologic evaluation.

Immunohistology

Detailed immunophenotypic analysis were performed on routinely fixed, paraffin-embedded tissue sections according to a previously described 3-step immunoperoxidase.[8] The panel of markers included antibodies directed against CD20, CD21, Bcl-2, Bcl-6, MIB-1, and MUM-1 (all from Dakopatts, Glostrup, Denmark); and CD3 and CD10 (Novocastra, Newcastle upon Tyne, United Kingdom). Microwave enhancement was used for all of the antibodies. Second and third antibodies were obtained from Dakopatts.

Molecular biology

Polymerase chain reaction analysis of the immunoglobulin heavy chain genes were performed according to standard procedures as described previously[9] with minor modifications.[10,11] Analysis of *Borrelia* DNA was performed according to standard procedures as described previously.[12]

RESULTS

Clinical data

Clinical data are summarized in Table I. Complete staging investigations, performed after the diagnostic biopsy specimen, were negative in 11 patients (pcFCL). In 2 of these patients the lesions represented a relapse of a known pcFCL. Upon staging, in the last 2 patients a systemic FCL with secondary skin involvement was found. In both of these patients the skin lesions represented the first manifestation of the systemic lymphoma.

All patients presented clinically with diffuse, ill-defined, partly hypochromic, partly erythematous macules located predominantly on the scalp and forehead (Fig 1). One patient (case 12) had inconspicuous lesions on both parietal regions and reported hair loss (Fig 2). A biopsy on the right parietal region was performed because the pattern of the "alopecia" was thought to be unusual by the referring physician, and specimen was submitted with a clinical diagnosis of