A case report of Folliculotropic mycosis fungoides: an aggressive variant of cutaneous T-cell lymphoma.

Ratchanee Vipanurat MD,

Pailin Puangpet MD.

ABSTRACT:

VIPANURAT R, PUANGPET P. A CASE REPORT OF FOLLICULOTROPIC MYCOSIS FUNGOIDES: AN AGGRESSIVE VARIANT OF CUTANEOUS T-CELL LYMPHOMA. THAI J DERMATOL 2016; 32: 262-8.

INSTITUTE OF DERMATOLOGY, MINISTRY OF PUBLIC HEALTH, BANGKOK, THAILAND.

Folliculotropic mycosis fungoides (FMF) is a distinct variant of mycosis fungoides (MF) characterized by hair follicle epithelium infiltration by neoplastic lymphoid cells. Clinically, the lesions can present as papules or plaques with follicular prominence, acneiform lesions, comedones, cysts, and nodular prurigo-like lesions surrounding hair follicles. The disease-specific 5-year survival in case with FMF is equal to those with classical tumor stage MF but less than the cases with classical plaque stage MF.

We report a case of 67-year-old man who presented with multiple erythematous follicular papules and plaques on the face, trunk and extremities which showed histopathologic, immunophenotypic findings of FMF. Laboratory work up showed high levels of lactate dehydrogenase and lymphocytosis. Computed tomography of chest and whole abdomen revealed no pulmonary nodules, no hepatosplenomegaly and no lymphadenopathy. Bone marrow biopsy showed moderately T-cell involved neoplasm. Based on these findings, the patient was diagnosed with FMF stage IVB (T3NxM0B2) and was referred to hematologist. The patient was given chemotherapy with CHOEP regimen with partial resolution of the lesions.

Key words: Folliculotropic mycosis fungoides, Mycosis fungoides, Cutaneous T-cell lymphoma

From : Institute of dermatology, Ministry of Public Health, Bangkok, Thailand.

Corresponding author: Ratchanee Vipanurat MD., email : toffytoffy@hotmail.com

บทคัดย่อ:

รัชนี วิภาณุรัตน์, ไพลิน พวงเพชร รายงานผู้ป่วยโรค FOLLICULOTROPIC MYCOSIS FUNGOIDES: AN AGGRESSIVE VARIANT OF CUTANEOUS T-CELL LYMPHOMA วารสารโรคผิวหนัง 2559; 32: 262-8.

สถาบันโรคผิวหนัง กรมการแพทย์ กระทรวงสาธารณสุข

Folliculotropic mycosis fungoides (FMF) เป็นมะเร็งผิวหนังลิมโฟมาชนิดทีเซลล์ (cutaneous T-cell Lymphoma) ที่มีลักษณะทางพยาธิวิทยาที่จำเพาะคือ พบลิมโฟไซต์ผิดปกติกระจายในรูขุมขนที่ผิวหนัง มีอาการแสดงได้หลายรูปแบบ ได้แก่ ตุ่มนูน ปื้นนูน ตุ่มคล้ายสิว ถุงน้ำ หรือ ก้อนใต้ผิวหนังบริเวณรอบรูขุมขน โดยอัตราการรอดชีวิตที่ 5 ปีในผู้ป่วย FMF เทียบเท่ากับผู้ป่วย classical tumor stage mycosis fungoides แต่มีการพยากรณ์โรคที่แย่กว่าเมื่อเทียบกับ plaque stage MF

รายงานฉบับนี้เป็นการนำเสนอผู้ป่วยชายไทย อายุ 67 ปี มาด้วย ตุ่มนูนแดงบริเวณรอบรูขุมขนที่รวมกันเป็นปื้นนูนแดงขนาดใหญ่บริเวณใบหน้า ลำตัว และแขนขา ผลทางพยาธิวิทยาและimmunohistochemistry เข้าได้กับโรค FMF ผลเอกซเรย์คอมพิวเตอร์บริเวณช่องอกและช่องท้องไม่พบการกระจายของโรค ผลการตรวจทางพยาธิวิทยาของไขกระดูกพบการกระจายของเนื้องอกมาที่ไขกระดูก ผู้ป่วยรายนี้จึงได้รับการวินิจฉัยเป็น FMF ระยะที่ 4 และได้รับการรักษาด้วยยาเคมีบำบัดชนิด CHOEP regimen หลังการรักษาพบว่าผื่นลดลง

คำสำคัญ: Folliculotropic mycosis fungoides, Mycosis fungoides, Cutaneous T-cell lymphoma

Introduction

Mycosis fungoides (MF) is the most common type of cutaneous T-cell lymphoma. It generally results from chronic antigenic stimulation leading to uncontrolled clonal expansion and the accumulation of T helper cells in the skin the lesion usually presents with scaling erythematous patches which may progress to plaques and tumors. Folliculotropic mycosis fungoides (FMF) is a distinct variant of MF characterized by hair follicle epithelium infiltration by neoplastic lymphoid cells. Clinically, the lesions can present as papules or plaques with follicular prominence, acneiform lesions, comedones, cysts, and nodular prurigo-like lesions surrounding hair follicles. The disease-specific 5-year survival in case with FMF is equal to those with classical tumor-stage MF but less than the cases with classical plaque stage MF.

Case report

A 67 year-old man presented with a 2-year history of multiple pruritic papules which gradually coalesced to form plaques. The rash initially started over both forearms and hands and later involved the face, scalp, trunk, and extremities. He had night fever for 2 months. There was no history of significant weight loss.

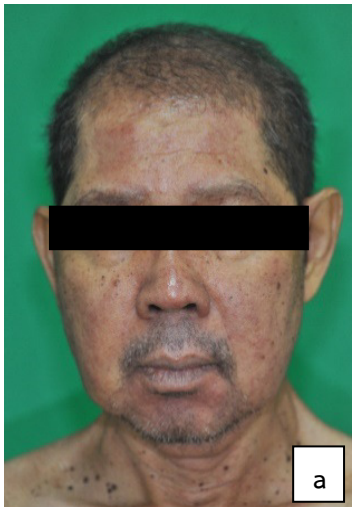
Topical corticosteroid, antihistamine and acitretin were given from the primary hospital. After 11 months of unsuccessful treatment, he was then referred to the Institute of Dermatology. He was otherwise healthy and not taking any medications. No relevant family history was noticed.

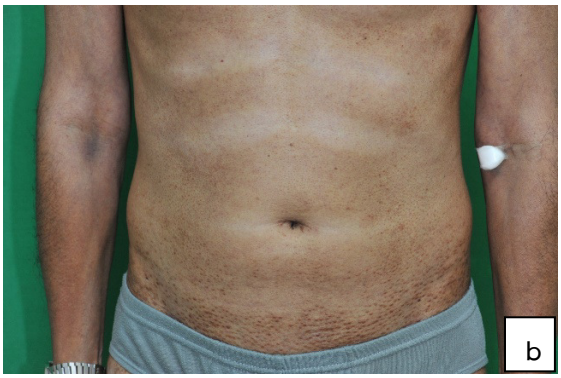
Physical examination revealed generalised erythematous follicular papules and some coalesce into plaques on the face, scalp, trunk and all extremities, involving 80% of BSA (Figure1). There were two enlarged left posterior cervical lymph nodes measuring 2x1.5 cm. in size, round, rubbery, movable and nontender. There was no hepatosplenomegaly.

Histopathologic examination from left forearm revealed perifollicular and intrafollicular infiltration with complete sparing of the epidermis. The infiltrate was composed mainly of small and medium-sized atypical cerebriform lymphocytes (Figure2). A smaller number of eosinophils and plasma cells were also observed. The section was further investigated with immunohistochemistry. These atypical cells had positive staining with CD3, CD4 and CD5, focal positive with CD30 but negative with CD7 and CD 20 (Figure3). Clinicopathologic correlation of the biopsy findings resulted in a diagnosis of folliculotropic mycosis fungoides.

Table 1 Comparison of folliculotropic mycosis fungoides (FMF) and classic mycosis fungoides

	Folliculotropic mycosis fungoides	Classic mycosis fungoides
Most common location	Head and neck	Bathing suit
Lesion	Papules or plaques with follicular prominence, acneiform lesions, comedones, cysts, nodular-prurigo-like lesion	Patch, plaque, tumor
Histopathology	Folliculotropic atypical lymphocyte infiltrate with or without follicular mucinosis	Atypical lymphocyte infiltrate in epidermis
Prognosis	5-yr survival for early stage 94% 5-yr survival for advanced stage 62-69%	10-yr survival for early stage 83-98%[5,9] 10-yr survival for advanced stage 42%[5,9]





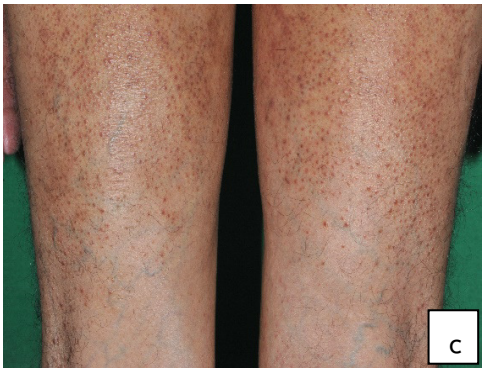


Figure1 Physical examination revealed generalised erythematous follicular papules and some coalesce into plaques on the face (a), trunk (b) and extremities (c), involving 80% of BSA.

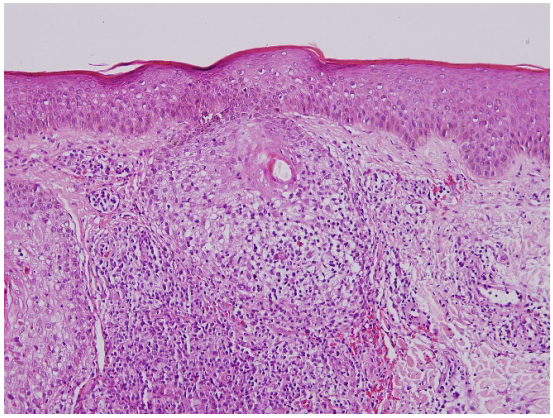


Figure 2 Histopathologic examination from left forearm revealed intrafollicular infiltration with complete sparing of the epidermis. The infiltrate was composed mainly of small and medium-sized atypical cerebriform lymphocytes. (H&E, 20x)

Discussion

Mycosis fungoides (MF) is the most common type of cutaneous T-cell lymphoma. It generally results from chronic antigenic stimulation leading to uncontrolled clonal expansion and the accumulation of T helper cells in the skin that usually presents with scaling erythematous patches that may progress to plaques and tumors.[1]

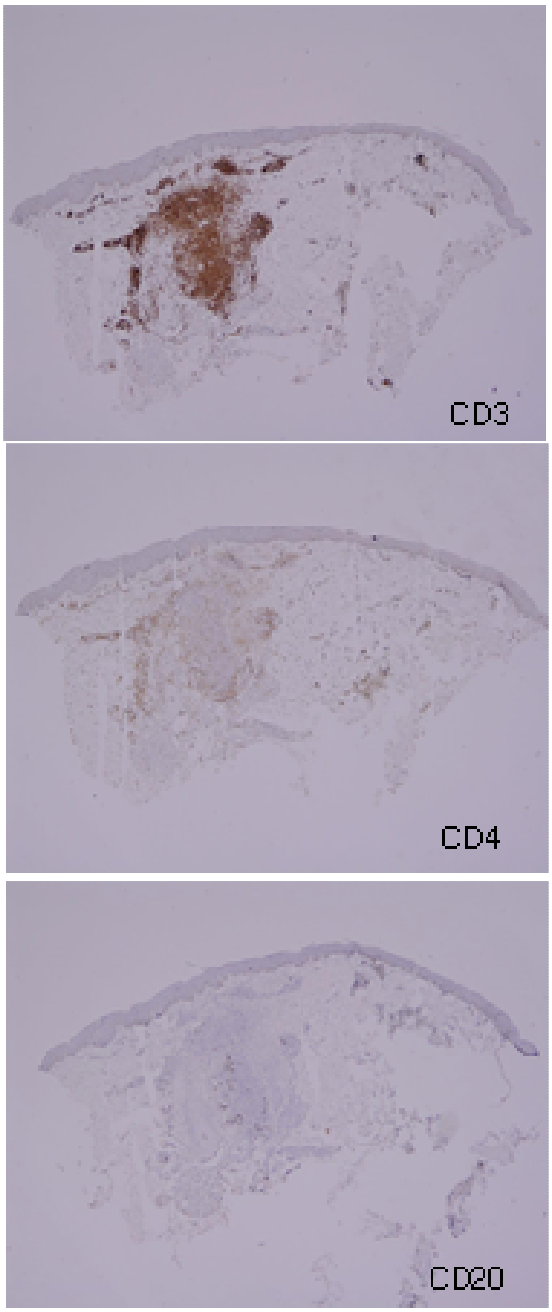


Figure 3 Immunohistochemistry stainings show atypical cells with positive staining for CD3, CD4 and CD5 but negative for CD7 and CD 20. (4x)

The current classification of the World Health Organization – European Organization for Research and Treatment of Cancer (WHO-EORTC) categorizes folliculotropic mycosis fungoides (FMF) as a distinct variant of MF which is characterized by hair follicle epithelium infiltration by neoplastic lymphoid cells. It is more common in men than in women. Clinically, the lesions can present as papules or plaques with follicular prominence, acneiform lesions, comedones, cysts, and nodular prurigo-like lesions surrounding hair follicles. The eyebrow plaques with follicular prominence with or without alopecia are highly characteristic finding. Pruritus is especially common in patients with FMF.[2] The differences between FMF and classic MF are clinical presentation, histopathology and prognosis. (Table1) The clinical presentation of FMF involves the head and neck region and often results in alopecia in contrast to the common bathing suit distribution of classic MF, in which head and neck region is generally spared.[3] The histopathological features of FMF are characterized by the classic pattern of folliculotropic lymphoid infiltrate with or without follicular mucinosis whereas the epidermis is often spared or minimally involved, an eosinophilic folliculitis-like pattern, a cystic pattern, basaloid folliculolymphoid hyperplasia, and a granulomatous pattern whereas histologic features of classical MF are characterized by

epidermotropism of atypical T lymphocytes with cerebriform nuclei or a band-like infiltrate in the upper dermis.[4] Immunohistochemical study in FMF is the same as classic MF, there are neoplastic-T cells for CD3 and CD4 but not for CD8.[5]

FMF is less responsive to treatment than classic mycosis fungoides because the deep extension of lymphocyte into the hair follicles limits the response to superficial therapies such as UVB phototherapy and topical corticosteroids. As a result, therapy for early-stage FMF includes phototherapy, preferable PUVA in combination with retinoid or interferon alpha. Advanced disease (≥stage IIB) requires aggressive therapy. Total skin electron beam irradiation has been considered effective and chemotherapy should be restricted to those patients with extracutaneous involvement.[3,6]

The disease-specific 5-year survival in case with FMF was equal to those with classical tumor-stage MF but less than the cases with classical plaque stage MF. Estimated 5-year survival was 94% in the early-stage group and 62-69% in the tumor-stage group.[2,7] The risk factors for disease progression and/or poor survival are age at diagnosis, large cell transformation and secondary bacterial infection.[8]

Herein we describe a case of patient who presented with multiple erythematous follicular papules and plaques on the face, trunk and extremities which showed histopathologic andimmunophenotypic findings of FMF. Laboratory work up showed high levels of lactate dehydrogenase and lymphocytosis. Computed tomography of chest and whole abdomen revealed no pulmonary nodules, no hepatosplenomegaly and no lymphadenopathy. Bone marrow biopsy showed moderately T-cell involved neoplasm. Based on these findings, the patient was diagnosed with FMF stage IVB (T3NxM0B2) and referred to a hematologist. The patient was given chemotherapy with CHOEP regimen with partial resolution of the lesions.

Conclusion

In conclusion, we report a case of the rare entity that clinical, histopathology and immunophenotypic findings are compatible with FMF. This case was misdiagnosed as eczema and incorrectly treated for 2 years before biopsy aided in determining the correct diagnosis. This report should raise awareness of the entity as a distinct diagnostic subtype of mycosis fungoides. Early recognition is important as associated with aggressive clinical course. FMF should be included in the clinical differential diagnosis of the follicular lesions especially on the head and neck region. All in all, long-standing follicular lesion should undergo biopsy to rule out FMF if the lesions do not respond to conventional treatments.

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