Hypo-pigmented mycosis fungoides is a rare malignancy in pediatrics

Babak Abdolkarimi[1], Mozhdeh Sepaskhah[2], Maral Mokhtari[3], Fatemeh Sari Aslani[3], Mehran Karimi[4]

Affiliations: [1]Department of Pediatrics, Lorestan University of Medical Sciences, Khoramabad, Iran, [2]Molecular Dermatology Research Center, Dermatology Department, Shiraz University of Medical Sciences, Shiraz, Iran, [3]Department of Pathology, Shiraz University of Medical Sciences, Shiraz, Iran, [4]Hematology Research Center, Shiraz University of Medical Sciences, Shiraz, Iran

Corresponding Author: Mehran Karimi, Professor of Pediatrics Hematology & Oncology, Hematology Research Center, Shiraz University of Medical Sciences, Shiraz, Iran, Tel: & Fax: 98-7136473239, Email: mkarimi820@gmail.com

Abstract

Hypopigmented mycosis fungoides (HMF) is an uncommon form of cutaneous T-cell lymphoma. It can be seen in children and is usually mistaken for eczema, vitiligo, or progressive macular hypomelanosis, clinically and histopathologically. We present a boy with HMF confirmed by histopathology. The patient had a course with slow clinical progression without Sezary syndrome.

Keywords: hypopigmentation, lymphoma, mycosis fungoides, pediatric lymphomas.

Introduction

Mycosis fungoides (MF) is the most common subtype of cutaneous T-cell lymphoma (CTCL). Patients with MF usually present with_concurrent and/or slowly progressing skin lesions of variable size and shape [1].

The typical history of MF is characterized by an indolent progression through four stages that exhibit patch, plaque, tumor, and visceral lesions. However, this progression is not necessarily seen in all patients [2]. Hypopigmented MF (HMF) is an atypical form of MF and most of these patients are younger than patients typically diagnosed with classical mycosis fungoides [3].

The peak age of MF presentation is above 50, with a 2:1 male/female ratio [4]. Although MF is a disease usually seen in adults, it is occasionally seen in children with similar clinical findings. The prognosis for hypopigmented mycosis fungoides is much better than for classical mycosis fungoides. The correct identification of hypopigmented MF can be delayed for many years because it is easily misdiagnosed as pityriasis alba, leprosy, pityriasis versicolor, sarcoidosis, post inflammatory hypopigmentation, or idiopathic guttate hypomelanosis; consequently it is treated with inappropriate medication [5]. The rarity of this variant may be secondary to underreporting, incorrect diagnosis, or both. The present report presents an Iranian child with MF.

Case Synopsis

A 10-year-old boy presented with progressive hypopigmented patches with local faint erythema and scale on the trunk and legs. The patient's past medical history and review of systems were otherwise negative. There was no history of arthralgia, radiation, or chemical exposure. There were no swellings or lymphadenopathy in any part of his body.

On physical examination, there were several hypopigmented macules and patches with focal fine scales in different sizes and shapes on his trunk and legs (**Figure 1A**). He had no lymphadenopathy, hepatosplenomegaly or extra-cutaneous involvement such as liver, spleen, or lungs. Also, there were

no atypical cells in the peripheral blood, ruling out the possibility of Sezary syndrome.

The patient underwent skin biopsy in the dermatology department with differential diagnoses of partially treated psoriasis, mycosis fungoides, atypical pityriasis rosea, and eczema with post-inflammatory hypopigmentation.

The trunk incisional skin biopsy showed hyperkeratosis, moderate regular acanthosis, and severe epidermotropism of mildly atypical lymphocytes with hyperchromatic nuclei, some of which had irregular nuclear border surrounded by a clear halo. Papillary dermis showed moderate and mainly lymphocytic infiltrate around the vessels. (**Figure 1B**)

In addition, immunohistochemistry examination was performed on the paraffin-embedded tissue: CD3, CD5, CD8, and CD43 markers were positive, and CD4 was weakly positive in the epidermis. CD7, CD20, and CD30 markers were negative. These findings resulted in five points of the algorithm for diagnosing early MF developed by the International Society for Cutaneous Lymphoma (ISCL); a diagnosis of early patch stage hypopigmented MF was made.

Investigations carried out at the hematology clinic included full blood count, reticulocyte count, peripheral blood count, renal and liver function tests, chest X-ray, and abdominopelvic ultrasonography; all of them were normal. Lactate dehydrogenase (LDH) was within the normal range. Viral screening for HIV, hepatitis B surface Ag, and hepatitis C virus were negative. Anti-Ro (SSA), Anti-SSB, ANA, Anti-DNA, c-ANCA, p-ANCA, C3, C4, CH50, and immunoglobulin E were in the normal range. Erythrocyte sedimentation rate (ESR) was 20 mm/hour. Treatment had been started in the dermatology clinic with topical corticosteroids (fluocinolone) once daily along with oral acitretin (Neotigason™, Actavis, UK) 10mg once daily. This was started after a pediatric endocrinology consultation regarding potential effects of acitretin on the patient's growth. The cutaneous symptoms disappeared almost completely with this treatment after six months of therapy and then acitretin tapering was started (every other day) and topical corticosteroid was changed to triamcinolone. The patient has been in remission and free of lesions or other signs of mycosis fungicides over the past four years of follow-up.

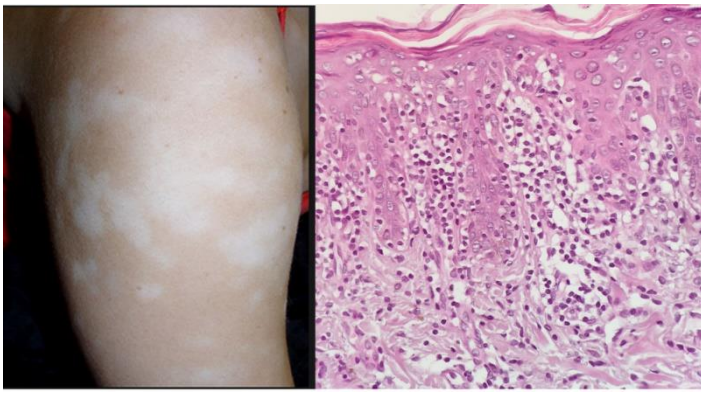

Figure 1. *A) Hypopigmented macules and patches over the lower extremities. B) Histopathology. Hyperkeratosis, moderate acanthosis, and severe epidermotropism of mildly atypical lymphocytes with hyperchromatic nuclei, surrounded by a clear halo. H&E, 400×.*

Case Discussion

Mycosis fungoides is generally rare among Asians and has a higher incidence rate in blacks. Reported incidence of MF is 0.5 per 100,000 per year [7]. Although in the recent large population-based studies about 2% of MF patients were younger than nineteen years of age [8], higher proportions (16.6%) of juvenile MF patients are included in some studies [9]. Seventeen cases of ninety-six hypopigmented MF patients described in the literature were children (17.7%), [10].

Fatemi Naeini et al. [2] described five pediatric patients (5.8%) among eighty-six patients with a clinical and histologic diagnosis of MF in Iran. In this study, the youngest of five patients (5.8%) who presented with hypopigmented MF was 15 years old and hypopigmented MF patients presented at a younger age in comparison with other MF patients. Overall, hypopigmented MF has been reported to comprise between 58 and 91% of pediatric MF cases [11, 12]. However, there is no available valid specific study in Iranian pediatrics to date.

Mycosis fungoides tends to appear in areas of the body usually not exposed to sunlight. However, the clinical manifestations of mycosis fungoides are

variable and up to fifty variants have been described. One such variant is HMF, an uncommon entity [13].

Our patient had hypopigmented lesions. This variant of MF is known to have a particular propensity in young patients. The differentiation between hypopigmented MF and early stage inflammatory vitiligo or other hypopigmented conditions is an area of importance. Differentiation between hypopigmented MF and vitiligo on clinical and even histopathology and immunohistochemistry is not easy [14]. Moreover, vitiligo is not uncommon in southern Iran and many patients in this country develop typical depigmented macules and patches over time. However, the clinical morphologic type of MF might impact disease progression with the hypopigmented variant being the type with the most favorable prognosis [15].

In fact, the hypopigmented variant of juvenile MF appears to have a better prognosis than classical MF and a cytotoxic immunophenotype is also more common among juvenile-onset patients and is not associated with a worse prognosis [15].

The most important prognostic factor for MF is the staging in which the evolution of the disease in the skin (T), the lymph node status (N), visceral (M), and blood involvement (B) are evaluated. The presence of extracutaneous disease is rare and occurs frequently in the lungs, oral cavity, and central nervous system. Sézary cells are used as criteria for the diagnosis of Sérazy syndrome, which is a leukemic variant of the disease that generally presents initially with erythroderma that may also exhibit diffuse alopecia, palmoplantar hyperkeratosis, and diffuse lymph node involvement [16]. Our patient had a benign course without Sézary cells in the blood, extracutaneous manifestations, or symptomatic skin lesions. In his four-year follow-up period, the patient has been in remission without developing any serious complications.

Typically, MF can present with the hypopigmented patches as the sole cutaneous manifestation with no associated erythematous patches or plaques. Besides the common childhood diseases of hypopigmentation noted above, these skin lesions should be considered in the differential diagnosis of diseases such as disseminated infections, including leishmaniasis, leprosy, South American blastomycosis, coccidioidomycosis, and other deep fungal infections. Also, granulomatous mycosis fungoides with hypohidrosis may mimic lepromatous leprosy [17].

Conclusion

MF is the most common primary skin T-cell lymphoma in adults, but it is a rare condition in children with good response to topical treatment. Since it may mimic several other hypopigmented skin disorders such as vitiligo, clinicohistopathologic correlation is ultimately essential to make an accurate diagnosis. Although the prognosis for HMF is generally good, it is a malignant skin tumor and should always be treated with close follow-up, even though aggressive treatment is usually not necessary.

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