Case Report

Sezary syndrome - A case report

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Abstract

Cutaneous T-cell lymphomas (CTCL) are a heterogenous group of lymphoproliferative disorders characterised by monoclonal expansion of malignant T cells, primarily helper T (CD4) cells. Mycosis fungoides (MF) and its erythrodermic and leukemic variant, the Sezary syndrome (SS) are the most common clinical types of CTCL. A 48 year old female presented to medical outpatient department with complaints of increasing breathlessness and cough with expectoration of six months duration. She was a known treated case of pulmonary tuberculosis. On examination she had multiple papules and rashes all over the face neck and trunk and generalized lymphadenopathy involving bilateral axillary, cervical and inguinal nodes. Due to the presence of the characteristic triad of erythroderma, lymphadenopathy and circulating atypical lymphoid cells (Sezary cells) and immunophenotypic positivity for T helper subtype, a diagnosis of Sezary syndrome was done.

Key words

Sezary syndrome, Cutaneous T-cell lymphoma, Mycosis fungoides, Leukemic variant.

Introduction

Cutaneous T-cell lymphomas (CTCL) are a heterogenous group of lymphoproliferative disorders characterised by monoclonal expansion of malignant T cells, primarily helper T (CD4) cells. Mycosis fungoides (MF) and its erythrodermic and leukemic variant, the Sezary syndrome (SS) are the most common clinical types of CTCL [1]. SS is characterized by a monoclonal proliferation of neoplastic T helper cells with cerebriform nuclei (Sezary cells), with immunophenotyping showing typical positivity for CD4 and negativity for CD7 and CD26 [2]. SS and MF share morphological and biological features which include nuclear atypia, immunophenotype of mature T cell, presence of T cell receptor (TCR) gene rearrangements in many cases and abnormalities in PTEN gene [3].

SS differs from MF in certain characteristics like loss of skin homing of the cutaneous lymphocyte antigens resulting in the circulation of malignant cells in the peripheral blood, and predominant secretion of T helper type 2 cytokines [4].

Case Report

A 48 year old female presented to medical outpatient department with complaints of increasing breathlessness and cough with expectoration of six months duration. She was a known treated case of pulmonary tuberculosis. On examination she had multiple papules and rashes all over the face neck and trunk and generalized lymphadenopathy involving bilateral axillary, cervical and inguinal nodes. Complete hemogram revealed mild anemia (Hemoglobin 10 gms), mild thrombocytopenia (platelet 1, 00,000), and an elevated leukocyte count (total leucocyte count 61000). Peripheral smear examination revealed atypical lymphoid cells, some having the typical cerebriform nuclei- the sezary cells (**Figure - 1**).

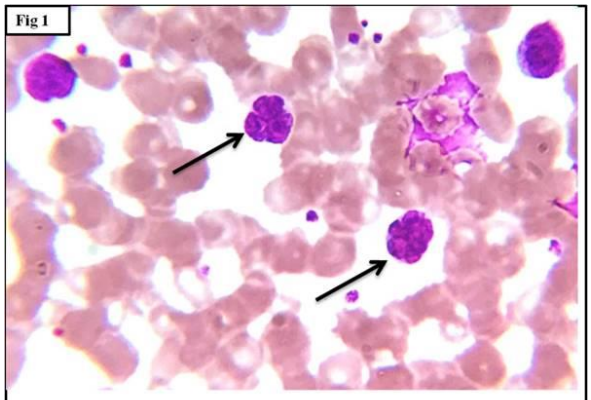

Figure 1 - Peripheral smear showing presence of atypical lymphoid cells and cells with convoluted cerebriform nuclei(arrows). Leishman X1000.

Owing to the presence of multiple maculopapular lesions over the trunk, face and neck, a skin biopsy was performed. We received an elliptical piece of skin in ten percent neutral buffered formalin. Grossly the skin with sub cutis measured 1X0.3X0.3 cms. Routine processing of the biopsy was done, 4 micrometer sections were taken and stained with hematoxylin and eosin. Microscopically, the epidermis was unremarkable. The upper dermis revealed an intense band like lymphocytic infiltrate (Figure 2A) with mild focal epidermotrophism (**Figure - 2B**).

The atypical lymphocytes had hyper chromatic and hyperconvuluted nuclei, some surrounded by a clear halo. Immunohistochemistry was performed, which revealed positivity for T cell markers CD3 (**Figure - 3A**), CD4 (**Figure - 3B**) and negativity for CD8 and CD26.

Due to the presence of the characteristic triad of erythroderma, lymphadenopathy and circulating atypical lymphoid cells (Sezary cells) and immunophenotypic positivity for T helper subtype, a diagnosis of Sezary syndrome was offered. Treatment was started, but the patient was lost to follow up.

Discussion

MF is the most common form of CTCL accounting for 70% of all cases, usually presenting with patches and plaques in the skin and pursuing an indolent, long clinical course [5]. Nevertheless, some cases show progression to a leukemic presentation with presence of atypical Sezary cells in the peripheral blood. SS, the leukemic variant of CTCL is clinically characterized by features of pruritus, early onset of erythroderma and lymphadenopathy. It is an aggressive disease associated with poor prognosis and a median survival of two to three years [3]. In rare cases, MF can evolve into SS during progression of the disease with SS being part of the spectrum of MF.

SS can either arise de novo or from preexisting lesions of the mycosis fungoides [6]. SS usually presents with non-specific erythroderma, described as diffuse, bright red with scaling. The associated symptoms include fever, chills, weight loss, fatigue and insomnia related to the intense pruritus and poor temperature homeostasis. Other presenting features include ectropion, fissuring and/or scaling of the palms and soles, nail dystrophy, ankle edema and alopecia [6]. SS as originally defined is characterized by the classical triad of erythroderma, lymphadenopathy

and circulating Sezary cells in the peripheral blood [3].

The diagnosis of SS is done by peripheral blood smear examination for Sezary cells, or demonstration of phenotypically abnormal T cells by flow cytometry, or analysis of T-cell receptor (TCR) gene for the evidence of an identical T-cell clone in both the skin and in the blood, or by cytogenetic study for a chromosomally abnormal clone [7].

SS is characterized by a monoclonal proliferation of neoplastic T cells and an immunophenotype that is classically CD4+CD7–CD26– [2]. The classical Sezary cell shows a characteristic cerebriform nucleus with hyperdiploid DNA and chromosome count. Some authors believe that Sezary cells found in the peripheral blood are of reactive nature whereas others believe that the cells are malignant [8]. The malignant T cell in Sezary syndrome expresses the pan-T cell markers C2, CD3 and CD5 as well as CD45+RO+ and CD4+ [9]. The early T-cell marker CD7 may be deleted in most cases of SS [10], however it can be positive in about a third of patients. CD25 (IL-2 receptors) may be positive but are negative in at least half the cases [11]. This patient had characteristic Sezary cells in the peripheral blood, and immunphenotyping of the atypical lymphocytes in the skin biopsy by immunohistochemistry revealed positivity for CD3, CD4 and negativity for CD8 and CD26.

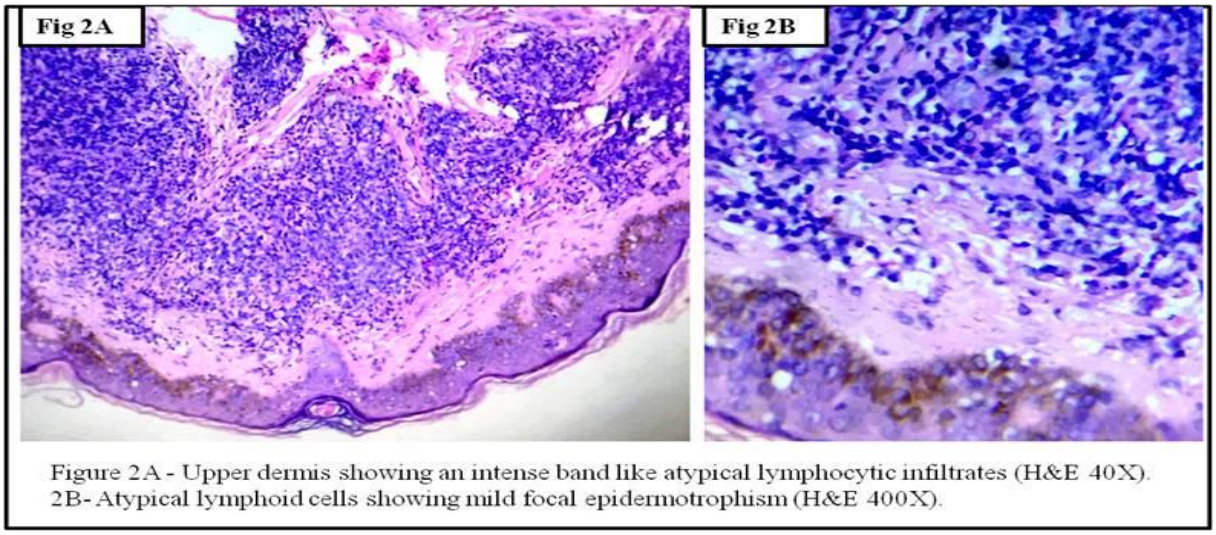

Figure 2A - Upper dermis showing an intense band like atypical lymphocytic infiltrates (H&E 40X). 2B- Atypical lymphoid cells showing mild focal epidermotrophism (H&E 400X).

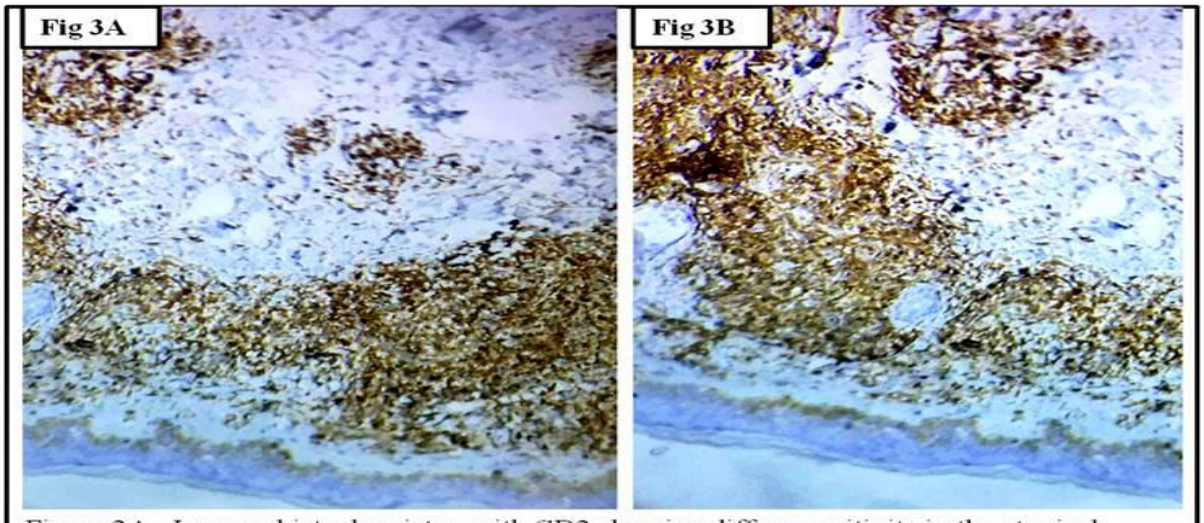

Figure 3A - Immunohistochemistry with CD3 showing diffuse positivity in the atypical lymphoid cells. (CD3. 100X). B - Immunohistochemistry with CD4 showing diffuse positivity in the atypical lymphoid cells. (CD4. 100X).

References

1. Vonderheid EC, Bernengo MG, Burg G, Duvic M, Heald P, Laroche L, Olsen E, Pittelkow M, Russell-Jones R, Takigawa M, Willemze R. Update on erythrodermic cutaneous Tcell lymphoma: report of the International Society for Cutaneous Lymphomas. J Am Acad Dermatol., 2002; 46: 95-106.
2. Bernengo MG, Novelli M, Quaglino P, Lisa F, De Matteis A, Savoia P, Cappello N, Fierro MT. The relevance of the CD4+ CD26– subset in the identification of circulating Sézary cells. Br J Dermatol., 2001; 144: 125-35.
3. Kim YH, Hoppe RT. Mycosis fungoides and the Sézary syndrome. Semin Oncol., 1999; 26: 276–89.
4. Saed G, Fivenson DP, Naidu Y, et al. Mycosis fungoides exhibits a Th1-type cell-mediated cytokine profile whereas Sézary syndrome expresses a Th2-type profile. J Invest Dermatol., 1994; 103: 29–33.
5. Willemze R, Kerl H, Sterry W, et al. EORTC classification for primary cutaneous lymphomas: a proposal from the cutaneous lymphoma study group of the European Organization for Research and Treatment of Cancer. Blood, 1997; 90: 354–71.
6. Ng PPL, Goh GL. Sezary Syndrome: A Case Report and a Review of the Molecular Pathomechanism and Management. Ann Acad Med Singapore, 1998; 27: 864-7.
7. Russell-Jones R. Diagnosing erythrodermic cutaneous T-cell lymphoma. Br J Dermatol., 2005; 153: 1-5.
8. Bendelac A, O'Conner N T J, Daniel M T, Boitard C, Michel C, Laroche C, et al. Nonneoplastic circulating Sezary-like cells in cutaneous T-cell lymphoma. Cancer, 1987; 60: 980-6.
9. Sterry W, Mielke V. CD4+ cutaneous T-cell lymphoma show the phenotype of helper/inducer T cells (CD45RA-, CDW29+). J Invest Dermatol., 1989; 93: 413-6.
10. Wood G S, Hong S R, Sasaki D T, Abel E A, Hoppe R T, Warnke R A, et al. Leu/CD7 antigen expression by CD3+ T-cells: Comparative analysis of skin and blood in mycosis fungoides/Sezary syndrome relative to normal blood values. J Am Acad Dermatol., 1990; 22: 602-7.
11. Kaudewitz P, Josimovic-Alasevic O, Dianantstein T, Eckert F, Klepzig K, Burg G. Soluble IL-2 receptor serum levels in cutaneous T-cell lymphoma: correlation with clinical stage and IL-2 receptor status in cutaneous infiltrates. J Invest Dermatol., 1988; 91: 386-7.