

## A Case of an Unusually Aggressive Cutaneous Anaplastic Large T-Cell Lymphoma in a Young Patient

Case Report

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### Abstract

Primary Cutaneous Anaplastic Large-cell Lymphoma (PC-ALCL) is the second most common cutaneous T-cell Lymphoma. PCALCL is composed of large cells with an anaplastic, pleomorphic, or immunoblastic cytology, and expression of the CD30 antigen by the majority (>75%) of tumor cells. We here by report a case of unusually aggressive PC-ALCL in a young adult.

**Keywords:** Primary Cutaneous Anaplastic Large Cell Lymphoma; Anaplastic Lymphoma kinase; Aggressive, CD30.

### Introduction

Primary Cutaneous Anaplastic large-Cell Lymphoma (PC-ALCL) is the second most common cutaneous T-cell Lymphoma [1]. (PC-ALCL) is part of the spectrum of CD30+ lymphoproliferative diseases of the skin including lymphomatoid papulosis. PCALCL is composed of large cells with an anaplastic, pleomorphic, or immunoblastic cytology, and expression of the CD30 antigen by the majority (>75%) of tumor cells [2]. PC-ALCL remains confined to the skin with rare dissemination beyond local lymph nodes in most cases [2]. PC-ALCL must be distinguished from secondary cutaneous lesions of systemic ALCL since the latter runs a poor clinical course [3]. PC-ALCL mainly affects older patients in the sixth decade. We here by report a case of unusually aggressive PC-ALCL in a young adult.

### Case Report

A 34-year-old man with history of chronic smoking, admitted to our department for pigmented patches on the trunk and scalp lasting for 3 years (Figure 1). The patient reported spontaneous regression in some lesions (Figure 2). The large lesion is localized in the chest (Figure) began as a small reddened patch and after 3 months became a 30-cm, then 50cm raised, dark, ulcerative circular mass lesion (Figure 3). Lymphadenopathy was appreciated

on physical examination. Histological and immunohistochemical study confirms primary cutaneous lymphoproliferation T CD30 (+) consistent with an anaplastic lymphoma cutaneous CD30 (+) Expressed by 75% of atypical cells (Figure 4, 5). ALK was negative. Tumor extension assessment had not objectified extra cutaneous reached. The histological study of surgical resection of axillary lymphadenopathy was inflammatory. The patient has received treatment by methotrexate, then CHOEP chemotherapy, without improvement. The patient died of septic shock.

### Discussion

PCALCL CD30-positive is the second most common form of cutaneous T-cell Lymphoma (CTCL) with an incidence of 0.1 to 0.2 patients per 100,000 [1]. It is mainly affects people in their sixth decade with a male to female ratio of 2 to 3/1 [1].

The criteria for the diagnosis of PCALCL include: more than 75% infiltration of CD30+ large anaplastic cells in skin biopsy, no clinical history of lymphomatoid papulosis, mycosis fungoides or other cutaneous lymphomas, and no extra cutaneous localization after extensive investigations at presentation [4]. Our patient fulfilled all the criteria.

Clinically, it is solitary asymptomatic reddish to violaceous nodule,

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**Figure 1. Tumors on the Trunk and Scalp.**



**Figure 2. Spontaneous Regression in some Lesions on the Trunk.**



**Figure 3. Ulcerative Circular Mass Lesion.**

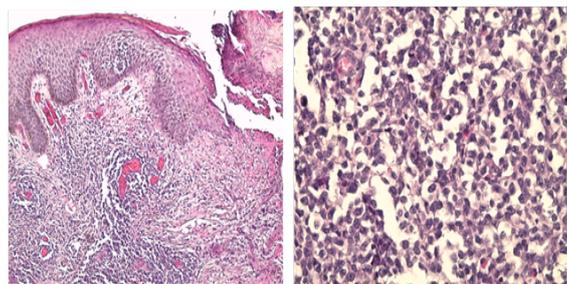


plaque or tumor over the head, trunk and extremities. The lesion is often slow growing with an indolent clinical course and may present for a long time before being diagnosed [5], and may regress spontaneously in 30% of cases [6]. However clinical presentation can be impressive with the rapid appearance of a single purplish red tumor with necrotic evolution. In our case, evolution were insidious for 3 years with the notion of spontaneous regression of lesions, then becoming rapidly progressive with installation of more extensive ulcerated and necrotic tumors.

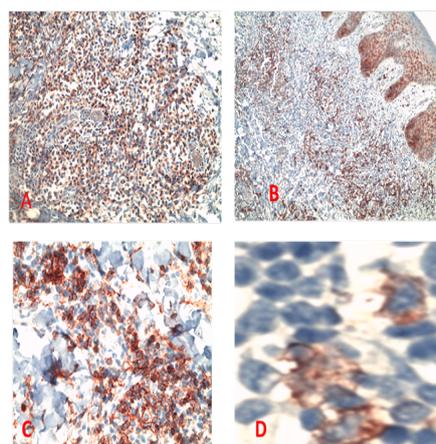
Generalized or multifocal lesions are rare and seen in about 20% of the patients [2], they are not controlled by treatment with a risk of secondary progression extracutaneous high relative to the localized form (17% versus 8%), and a higher mortality rate (12% versus 3%) [7].

PC-ALCL is characterized histologically by dense cohesive sheets of large atypical cells, known as “hallmark cells”, comprising

**Figure 4. Epidermal ulceration, with Dense Lymphoid infiltrates on the Dermis.**



**Figure 5. Immunohistochemical Study Confirms Primary Cutaneous Lymphoproliferation T CD30.**



**A: IHC G x 200 CD3 (+). B: IHC G x 100 EMA (+).  
C: IHC G x 400 CD4 (+). D: IHC G x 400 CD30 (+).**

more than 75% of the cellular infiltrate. The cells have abundant cytoplasm with reniform-shaped hyperchromatic nuclei and prominent eosinophilic nucleoli with frequent mitoses [8], similar histological findings were observed in our case.

Nuclear matrix protein (NMP)-ALK is a nuclear fusion protein, which is not expressed in normal lymphocytes. ALK expression is common in systemic ALCL and rare in PC-ALCL, its expression in skin is a warning to look for systemic disease [3] specially nodal involvement.

In our case, the ALK was negative, and the histological study of surgical resection of axillary lymphadenopathy was inflammatory confirming the primary cutaneous character of lymphoproliferation. Our patient is classified as stage T3bN0M0 based on the TNM classification system for primary cutaneous lymphomas other than MF/SS of the ISCL/EORTC [9].

Extracutaneous dissemination occurs in approximately 10% of patients with localized disease and mainly involves the regional lymph nodes, thus long-term follow-up is required in all patients with PCALCL.

The mechanisms that are involved in the development of anaplastic large cell lymphoma are unknown [10]. In most patients, the initial step that involves activation and clonal expansion of CD30+ T cells is controlled effectively by the host immune response [10]. Further progression occurs only when the tumor cells acquire a growth advantage, either by additional chromosomal alterations or when the host immune response becomes deficient [10].

However, there may be spontaneous regression of the lesion if the host immune response is intact [10].

PC-ALCL can lend confusion with transformed mycosis fungoides or with a lymphomatoid papulosis, hence the interest of a clinicopathological confrontation.

Treatment of PC-ALCL should be decided according to the size, number and extent of the tumor.

Primary C-ALCL is an indolent disease, therefore treatment measures should focus on noninvasive strategies. Localized radiation therapy or surgical excision for solitary or localized lesions is the preferred treatment for C-ALCL [11]. Systemic therapy is indicated for patients refractory to local therapy, multifocal disease like our patient, and/or extracutaneous spread of disease. A well-tolerated option includes slow-dose methotrexate [12, 13], but unfortunately it was not effective in our case. Alternative therapies such as oral bexarotene, Interferon-alpha (IFN), thalidomide, or doxorubicin may be used for treating PC-ALCL [1, 14, 15].

Combination chemotherapy is not indicated in the first intention, but in view of an aggressive clinical course, and based on the available research [11-13], our patient was treated with chemotherapy type CHOEP. Unfortunately, this tumor has a tendency to recur, even after long disease-free intervals. According to the literature review, multi-agent systemic chemotherapy does not prevent future relapses [7].

Newer classes of drugs such as brentuximab vedotin (SGN35) [16, 17], histone deacetylase (HDAC) inhibitors are now available as treatment alternatives. Recently Romidepsin was approved for treatment of cutaneous ALCL for patients that had received systemic chemotherapy at least once [18].

In our patient, the refractory and debilitating multifocal shape was enough to indicate multiagent systemic chemotherapy. Moreover, the vital prognosis can be put into play by the iatrogenic immunosuppression.

## Conclusion

Although they are exceptional, multifocal, recurrent and refractory forms seem very debilitating, having a fatal prognosis, and pose a problem of management.

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