

CHRONIC LYMPHOBLASTIC LEUKEMIA DIAGNOSED BY PRIMARY CUTANEOUS LESION

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ABSTRACT

Chronic lymphocytic leukemia (CLL) is a malignant, low-grade, monoclonal disorder characterized by the accumulation of lymphocytes with variable clinical features. Cutaneous manifestations or leukemia cutis are non-specific, uncommon presentations of CLL and can present in many different ways. In this case report, we discuss a 76-year-old male who presented with skin lesions of the lower limbs and severe itching. Due to the lack of response to the treatment with topical corticosteroids, initial tests were carried out. Complete blood count results indicated lymphocytosis. Eventually, ultimately, the skin lesions led to the diagnosis of CLL. The patient was treated with bendamustine-rituximab (BR). After receiving the treatment, all cutaneous manifestations and generalized itching disappeared. This case highlights the importance of comparing similar cases of CLL presented with dermatological conditions in order to understand proper management and practice.

**Keywords:** Chronic lymphocytic leukemia, Skin lesions, Lymphocytic vasculitis, Leukemia cutis.

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INTRODUCTION

Chronic lymphocytic leukemia (CLL) which is the most common form of leukemia is a low-grade lymphoproliferative disorder. Clinical presentations of CLL can be a variable spectrum of features [1]. Although CLL usually presents with classic manifestations, in some cases, it appears with unusual or rare externalizations [2]. Cutaneous manifestations and skin lesions which are called leukemia cutis are rare presentations of CLL and occur in 4–25% of patients and usually do not appear as the first sign of the disease [3]. In this case, we report a patient with CLL who has presented with a flat skin lesion, erythema, and severe itching.

CASE REPORT

A 76-year-old man with a medical history of hypertension and no prior chemotherapy presented with flat lesions of the lower limbs and severe itching (Fig. 1). The patient was examined by a dermatologist 2 months before the admission and treated with topical corticosteroids and antihistamines. As a consequence of the lack of response to the treatment, initial tests were conducted.

Complete blood count test revealed WBC 18.67 (\*10<sup>9</sup> L), RBC 3.21 (\*10<sup>12</sup> L), hemoglobin 9.8 (g/dl), HCT 31.5%, and PLT 198 (\*10<sup>9</sup> L). Blood differential test showed lymphocyte 90.8%, neutrophil 8.6%, monocyte 0.4%, eosinophil 0.2%, and basophil 0.0%. Due to the lymphocytosis as the result of conducted tests, the patient was referred to a hematologist for further examinations.

Computed tomography scan indicated a few small lymph nodes on the base of the neck, significant adenopathy in the posterior triangle of the neck, adenopathy in the axillary regions, and mild splenomegaly with the length of 156 mm (Fig. 2).

To conduct a further examination, the biopsy of itching cutaneous lesions was carried out. Microscopical findings showed skin tissue with moderate perivascular lymphocytic aggregation and vessel damage. In conclusion, pathological studies of lesions indicated lymphocytic vasculitis.

Results of peripheral blood flow cytometry showed the percentage of reactivities of the cells with the MoAbs. CD20 was 71% as a B-cell marker, CD5 was 93% as a T-cell marker, CD23 was 77%, and CD 10 was reported negative.

Bone marrow aspiration and biopsy revealed an obvious increase in lymphoid proliferation (Fig. 3).

As the result of conducted tests and examinations, diagnosis of CLL was confirmed. According to the Rai staging system for CLL, our patient had Stage III CLL.

After confirmation of the diagnosis of CLL, the patient was treated with bendamustine-rituximab. The administered dose of rituximab was 700 mg on the 1<sup>st</sup> day. On the 2<sup>nd</sup> and 3<sup>rd</sup> day, the administered dose of bendamustine was 150 mg.

The patient tolerated chemotherapy and 1 day after the first period of prescribed chemotherapy, the symptoms were improved and itching was resolved (Fig. 4).

The patient consent for using the information and images has been taken.

DISCUSSION

CLL is considered as the most common adult leukemia worldwide and among all leukemia in the United States, CLL accounts for 25–30% of cases [4].

Cutaneous eruptions and dermatological conditions in CLL have been identified in 4–25% of patients [3,5]. Cutaneous manifestations of CLL may be presented primarily as leukemia cutis or more commonly as secondary lesions [6].

Typical presentations of leukemia cutis in CLL are erythematous papules, plaques, nodules, or large tumors. According to the histopathological findings, cutaneous infiltrations in CLL can be described with three architectural patterns. These patterns are patchy perivascular and periadnexal, band-like, and nodular diffuse [7].



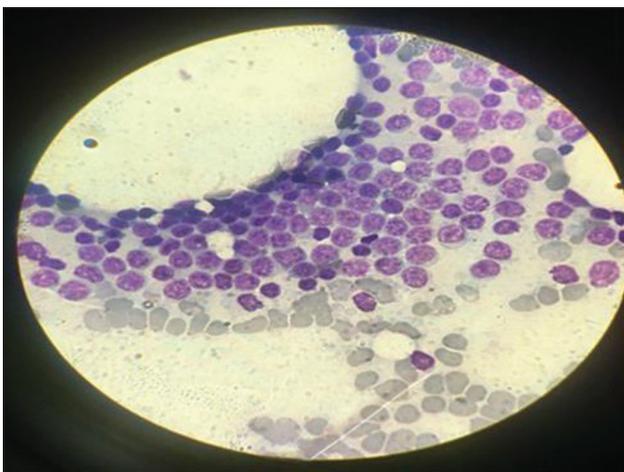
**Fig. 1: Skin lesions of the lower limbs like flat lesions without papules or pustules**



**Fig. 4: The conditions of skin lesions in the same areas after the first course of chemotherapy**



**Fig. 2: Mild splenomegaly revealed by computed tomography scan**



**Fig. 3: Bone marrow aspiration reveals increase in lymphoid proliferation [ $\times 1000$ ]**

Although previous case reports suggested the notion that leukemia cutis leads to a negative prognosis, recent data and studies indicate that in the absence of progressed systemic disease, cutaneous involvement in CLL does not affect prognosis [8].

Similar cases of CLL with cutaneous manifestations has have been documented and reported. Lu *et al.* reported a patient with subclinical

B-cell CLL presented with skin hypertrophic changes of the ears, eyebrows, tip of the nose, toes, and fingers. According to this case report, considering leukemia cutis in patients with underlying CLL is important [9].

Another case reported by Raufi *et al.* who introduced a patient with the skin lesion of bilateral ears. This cutaneous manifestation led to the diagnosis of CLL [10].

This case, by describing a flat skin lesion with erythema and severe itching of the lower limb as an unusual clinical manifestation of CLL, highlights the importance of considering leukemia cutis as a harbinger of underlying CLL (Fig. 1).

Although our case suggests that early cutaneous manifestations of CLL can lead to the diagnosis. Further investigations and comparison of similar cases is are needed to enhance our understanding of disease as well as proper management and practice.

## CONCLUSION

Cutaneous lesions which do not answer to the common treatments should be considered serious and to diagnose the main disorder and rule out the differential diagnosis further examinations should be ruled out.

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