

## Case Report / Olgu Sunumu

### A case of lichen striatus associated with alopecia areata universalis in an adult woman: successful treatment with tacrolimus ointment

#### Alopecia areata universalis ile birlikte seyreden bir erişkin liken striatus olgusu: takrolimus krem ile başarılı tedavi

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#### Abstract

A 40-year-old woman was admitted to our clinic with the complaints of itchy lesions appearing on the right leg for five months. The patient had also suffered hair loss of her scalp, eyebrows, legs and arms for one year. The patient was diagnosed as lichen striatus with this histopathological and clinical findings. The coexistence of these clinical presentations in the same patient may support the role of autoimmunity in the pathogenesis. In this case report, successful treatment of lichen striatus with tacrolimus in an adult with alopecia areata universalis is presented.

**Keywords:** Lichen striatus, alopecia areata, tacrolimus

#### Özet

Kırk yaşında bir kadın 5 aydır sağ bacağına olan kaşıntılı lezyonlar nedeni ile kliniğimize başvurdu. Hastanın aynı zamanda bir yıldır başında, kaşlarında, bacak ve kollarında kıl dökülmesi vardı. Hastaya histopatolojik ve klinik bulgular ile liken striatus tanısı konuldu. Bu klinik tabloların aynı hastada birlikte olması patogeneizde otoimmünitenin olası rolünü desteklemektedir. Bu olgu sunumunda alopecia areata universalisi olan bir erişkinde liken striatusun takrolimus ile başarılı tedavisi sunuldu.

**Anahtar sözcükler:** Liken striatus, alopecia areata, takrolimus

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## Introduction

Lichen striatus (LS) is a self-limited dermatosis characterized by linear papules, which primarily occurs in children [1-3]. LS has been reported to be a T-cell-mediated inflammatory skin disease with an autoimmune response against mutated keratinocytes [4]. Alopecia areata universalis is a serious form of alopecia areata, but it is frequently believed to be autoimmune disease [5]. Because corticosteroid ointments cause skin atrophy after a long period of application, tacrolimus treatment is justified in cases of LS with multiple skin lesions.

## Case Report

A 40 year-old woman was admitted to our clinic with the complaints of itchy lesions appearing on the right leg for five months. Also, the patient had suffered hair loss of her scalp, eyebrows, legs and arms for one year. However, she didn't respond to the treatments. There was no other characteristic in the patient's history except for the diabetes mellitus diagnosed a month ago. On the dermatological examination, there were multiple linear, dark brown-violaceous papules from the right femur to the right foot (Fig. 1). Also, her scalp hair and eyebrows were totally lost (Fig. 2). Involvement in mucosa and nails were not detected. Punch biopsy was performed on the leg lesions. The biopsy results showed hiperkeratosis in the epidermis, acanthosis, light spongiosis, scattered apoptotic cells, hydropic degeneration of the basal layer, and lymphocyte infiltration on the papillary and perivascular dermis, periadnexal lymphocyte infiltration (Fig. 3). The patient was diagnosed as lichen striatus with this histopathologic and clinical findings. The patient was started on 0.1 % tacrolimus ointment twice a day because of the disseminated lesions. The treated lesions began to improve two weeks after tacrolimus application and disappeared with light hyperpigmentation in six weeks (Fig. 4). The patient didn't request treatment for alopecia universalis.



**Figure 1. Dark brown violaceous papules that were disseminated linear on the patient's leg.**



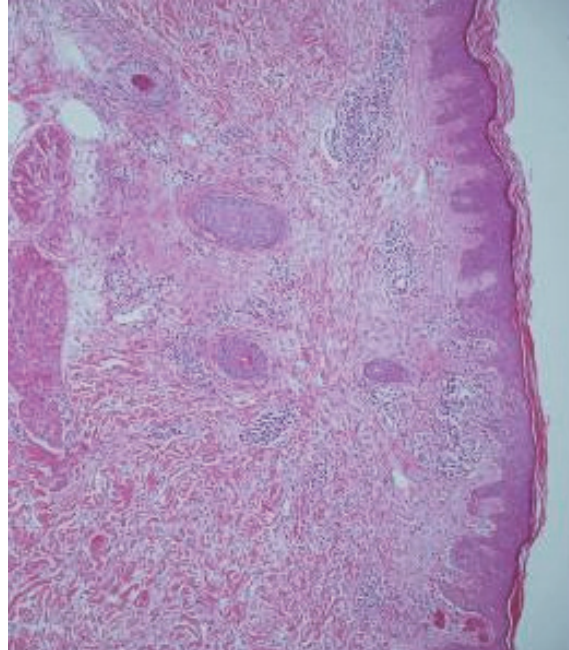
**Figure 2. Whole hair loss of the patient.**

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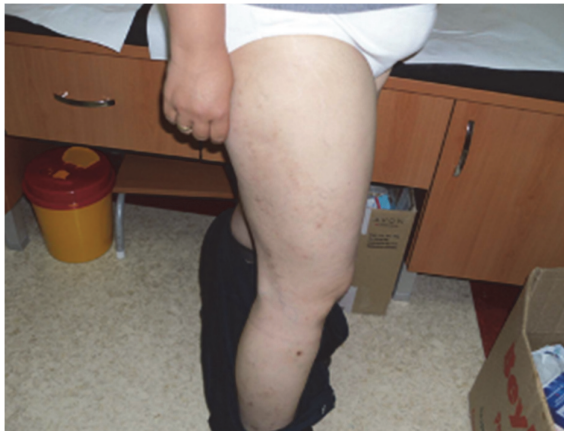
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**Figure 3. Superficial and deep perivascular and periadnexal infiltrate of lymphocytes and focal parakeratosis (Haematoxylin and eosin stain, X100).**



**Figure 4. After 6 weeks of treatment with topical 0.1% topical tacrolimus.**

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## Discussion

LS is a rare linear, self-healing papular dermatosis that primarily seen in children [1-3]. In most cases, the linearity has been showed to follow the lines of Blaschko [1, 3]. Average duration of the disease is 9 months, and the lesions spontaneously regress [1, 2]. The lesions frequently consist of solitary and unilateral continuous or intermittent erythematous papules [1, 3]. Multiple lesions are very rare [1, 3, 4]. In our case, the lesions were on one of the extremities and multiple. Although the linear distribution is assumed to depend on neurologic and developmental factors, the cause is unknown [3]. LS has been reported to be a T-cell-mediated inflammatory skin disease with an autoimmune response against mutated keratinocytes [4]. The abnormal immunity related to atopy may be an important characteristic in the induction of LS [3].

Alopecia areata universalis is a serious form of alopecia areata, but it is frequently believed to be autoimmune disease. It is central component in T-cell-mediated inflammation pathophysiology [5]. The case of LS associated with alopecia universalis may support the role of autoimmunity in the etiology. However, more advanced studies are necessary to prove this.

Treatment of LS is usually not needed except for the unusual case in which there is significant pruritus. Topical steroids are used to treat pruritus associated with the lesions [2, 4]. Tacrolimus is an immunosuppressive antibiotic belonging to the drug group known as calcineurin inhibitor or macrolide lactone [1]. It suppresses the activation of T lymphocytes and inhibits cytokines secretion [1, 2]. Tacrolimus may inhibit interleukin-2 transcription and thus prevent local T lymphocyte activation [2].

As the lesions were disseminated nature in our patient, we started on 0.1% tacrolimus ointment. We observed the recovery of the lesions within six weeks along with postinflammatory hyperpigmentation. Thus, skin atrophy that may occur due to the long-term use of topical steroid was inhibited.

We think that, while LS and alopecia universalis can coexist, it is likely that this is a coincidence and does not represent any common underlying pathogenesis. Some cell-mediated immunological mechanism might be a factor of the pathogenesis of LS and alopecia universalis. In our experience, 1% tacrolimus is an effective treatment option for multiple LS.

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