

Unilateral multiple lichen striatus treated with tacrolimus ointment: a case report

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S U M M A R Y

A previously healthy 11-year-old boy with multiple, unilateral lichen striatus (LS) on the left side of the body is described. The distribution of the lesions corresponded to the lines of Blaschko. Histology of the lesional skin was compatible with LS. Two years after the onset of the linear eruption, treatment with tacrolimus ointment resulted in significant improvement over a short period of time. To our knowledge, this is the first time that the use of tacrolimus for successful treatment of LS with multiple lesions has been reported.

Introduction

Lichen striatus (LS) is a rare linear papular dermatosis that primarily occurs in children. Small, flat, pink lichenoid papules, initially discrete but rapidly coalescing, appear suddenly and expand over a week or more to form a dull red, slightly scaly linear band usually 2 mm to 2 cm wide. The linearity has been shown to correspond in many cases to the lines of Blaschko (1). The average duration of the disease is 9 months, and subsequently the lesions spontaneously regress. Histological findings in LS are rather varied and non-specific (2), but they are significant for making a distinction between LS and other linear dermatoses. Emollients and

topical steroids may be used to treat associated pruritus, if present.

Studies have shown that LS is a T-cell-mediated inflammatory skin disease (2) and that tacrolimus ointment is effective for the treatment of particular, persistent forms of this condition (1, 3). It is also effective for the treatment of other dermatoses such as mucosal lichen planus (4), psoriasis (5), atopic dermatitis (6), eczema, and rosacea. Tacrolimus is an immunosuppressive antibiotic belonging to the group of drugs called macrolide lactones or calcineurin inhibitors. It binds to the receptor FK binding proteins within the

K E Y W O R D S

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Fig. 1. Multiple hyperpigmented maculae and livid bands on left arm and anterior aspect of the left side of the trunk.

cell. The resulting drug-protein complex inhibits calcineurin, which in turn reduces the activity of T lymphocytes, which then fail to release their cytokines (7). Tacrolimus may also reduce the number of IL 8 cytokine receptors in the keratinocyte, thus reducing the inflammation.



Fig. 2. Linear hyperpigmented maculae on the left leg.

Case report

This is a case report of an 11-year-old boy suffering from LS with multiple lesions on the left side of the trunk and left upper and lower extremities. After a 2-year course of the disease, local tacrolimus therapy resulted in rapid regression of the lesions.

A healthy 11-year-old boy presented with a 2-year history of an asymptomatic, linear erythematous rash on the left part of the body. No treatment had been used. On examination, the cutaneous lesions showed polymorphism. There were multiple pinhead-sized



Fig. 3. Clinical picture 3 weeks after beginning treatment with tacrolimus ointment.

erythematous papules, livid bands, and hyperpigmented maculae coalescing in a linear arrangement along the upper arm and forearm (Fig. 1) and along the linea alba; multiple, linear lesions at the anterior and posterior aspects of the left half of the trunk (Fig. 1) along the left leg (Fig. 2) and from the left gluteus

along the popliteal fossa to the internal malleolus. There were no changes in the scalp, buccal and genital mucosa, or nails. There was no relevant medical history in the patient or his family. There was no history of atopy. The results of routine laboratory blood and urine tests were normal. Histological findings verified the presence of hyperkeratosis and acanthosis in the epidermis with mildly increased basal layer pigmentation. There was a lymphocytic perivascular infiltrate in the upper dermis.

The linear eruption was diagnosed as LS, based on clinical and histological characteristics. Because of the multiple lesions and long course of the disease, the patient was instructed to apply 0.03% tacrolimus ointment twice a day on the linear lesions, which showed improvement within 3 weeks (Fig. 3). Tacrolimus was applied for an additional 4 weeks, when complete healing was achieved.

Discussion

LS lesions are usually solitary and unilateral, and are most commonly manifested on the arms and legs, but may develop on the neck and trunk as well. Facial involvement has been reported as less frequent (1). Multiple lesions, unilateral or bilateral, are very rare and only a few individual cases of multiple LS localization have been reported (8, 9). Kurokawa (8) presented a patient

with bilateral LS localization in the lower extremities, and Aloï (9) described a patient with diffuse, bilateral LS. The mean duration is about 9 months, with spontaneous healing. If the cutaneous lesions do not disappear, or pruritus is present, corticosteroid ointments are applied.

Our report presents a rare form of LS with multiple, unilateral lesions on the left upper and lower extremities and on the left half of the trunk. The linearity of the lesions corresponded to the lines of Blaschko. Histopathological findings were compatible with LS. Tacrolimus ointment was applied 4 months after the skin lesions were biopsied because of the presence of multiple lesions and a 2-year course of disease without any tendency towards spontaneous regression. The regression of skin lesions was noted after 3 weeks of treatment and, after 7 weeks, complete healing without any side-effects was achieved.

Tacrolimus is an appropriate drug for local application because it is well tolerated by patients (1, 3–5). Because it does not affect collagen synthesis (10), there is no risk of skin atrophy. Serum drug levels remain low or undetectable with topical application (6), thus avoiding the risk of nephrotoxic effects found with oral tacrolimus. As far as we know, tacrolimus has been applied only to LS cases with solitary lesions so far, and this is the first application of tacrolimus for local therapy of LS with multiple lesions. Because corticosteroid ointments cause skin atrophy after a long period of application, tacrolimus treatment is justified in cases of LS with a prolonged course and solitary or multiple skin lesions.

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