

**CASE REPORT**

## Successful Treatment of Lichen Striatus With Occlusive Imiquimod 5% Cream

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**ABSTRACT**

Lichen striatus is an uncommon acquired linear inflammatory skin disorder, that preferentially occurs in children. We report a 15-year-old girl with a 16-month history of lichen striatus. Topical application of imiquimod 5% cream twice-daily under occlusion led to resolution of the intense pruritus within 6 days of treatment and to complete remission of the cutaneous lesions after 5 weeks of treatment. The patient experienced no local or systemic side effects. She has been followed-up for 13 months and revealed no evidence of recurrence. Topical imiquimod may be an effective and safe alternative treatment for recalcitrant lichen striatus.

**INTRODUCTION**

Lichen striatus (LS) is an uncommon acquired inflammatory skin disorder with linear distribution along Blaschko's lines, that preferentially occurs in children.<sup>1</sup> Since LS is a benign, self-limited dermatosis spontaneously resolving in 6-12 months, its treatment is necessary only in patients with widespread or pruriginous lesions, no tendency to resolve and with frequent relapses. We report herein a patient with persistent lichen striatus, who showed complete remission of her skin lesions after 5 weeks of treatment with imiquimod 5% cream.

**CASE REPORT**

A 15-year-old Caucasian girl presented with a 16-month history of intensely pruritic skin lesions on her left thigh. The eruption had been diagnosed as lichen striatus and was left untreated, but since its expected spontaneous resolution was not observed within 16 months, the patient was referred to our Department of Dermatology. On physical examination, erythematous squamous and verrucous papules were seen, that clustered in an focally interrupted linear plaque (15 cm × 2 cm) extending on the posterior aspect of her left thigh along Blaschko's lines (Fig. 1A).

Histological examination of a biopsy obtained from the lesional skin revealed hyperkeratosis, orthokeratosis, focal parakeratosis and hypergranulosis, spongiosis, necrotic keratinocytes, invasion of lymphocytes into the epidermis and a moderately dense perivascular and perifollicular lymphohistiocytic infiltrate (Fig. 2). In view of the clinical and the histological features<sup>2</sup> the diagnosis of LS was made. Subsequent

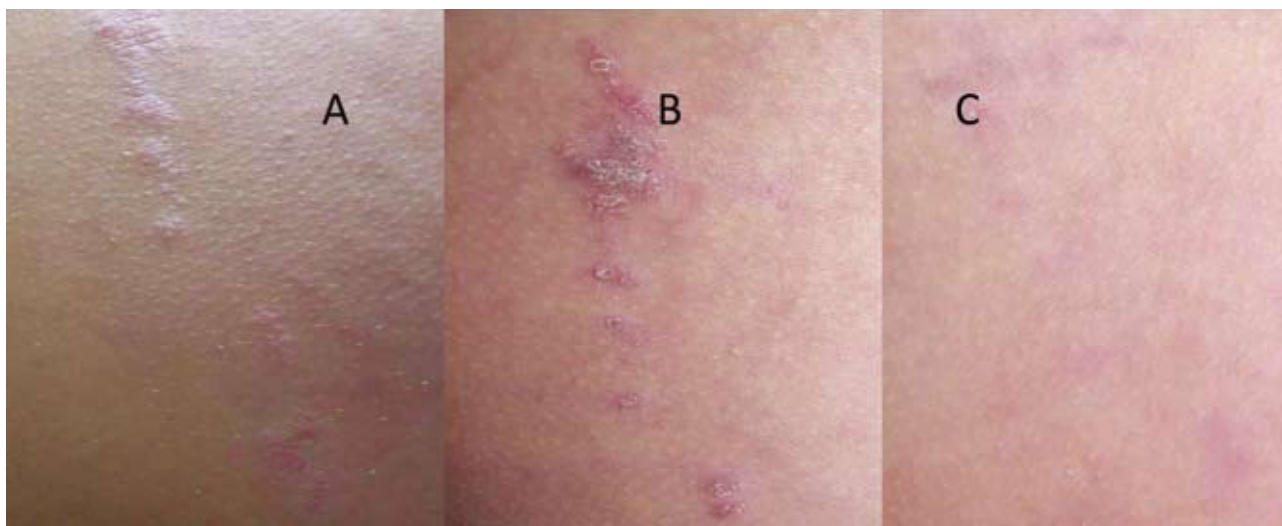
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**FIGURE 1.** Clinical aspect of lichen striatus prior to (A) and after 2 weeks (B) and 5 weeks (C) of topical treatment with 5% imiquimod cream.

to a thorough explanation of the safety profile of imiquimod 5% cream, the patient's parents gave their written informed consent and were instructed to apply this compound to the lesions twice daily under occlusion.

At six days after the onset of treatment the lesions became edematous, their color changed into violet and there was a resolution of pruritus, showing a progressive improvement thereafter (Fig. 1B). A complete remission of the lesions was achieved after 5 weeks of continuous treatment (Fig. 1C). The

patient experienced no local or systemic side effects; she has been followed-up for 13 months and revealed no evidence of recurrence.

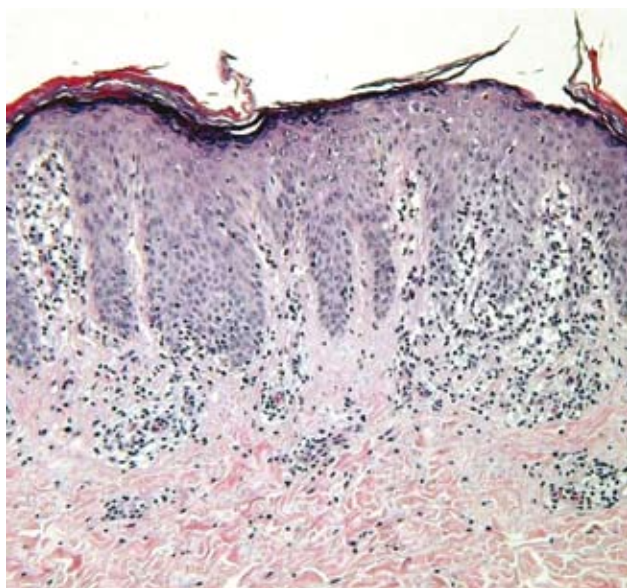
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#### DISCUSSION

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Imiquimod is a topically applicable Toll-like receptor-7/8 (TLR-7/8) agonist that stimulates the cutaneous innate and the cellular arm of adaptive immune response and exerts distinct antiviral, antitumor and immunoregulatory effects.<sup>3,4</sup> This compound is currently regarded as an efficient and safe topical agent for the immunotherapy of a variety of cutaneous infections, neoplasms and inflammatory disorders, most of which previously represented frustrating therapeutic problems.<sup>5-8</sup>

The exact immunomodulatory mechanisms underlying the impressive therapeutic effect of topical imiquimod in LS, reported for the first time in this study, remain to be elucidated. It may be suggested, however, that imiquimod-induced stimulation of TLR7- and TLR8-mediated signaling pathways leading to enhanced transcription and local release of pro-inflammatory cytokines, chemokines and other mediators<sup>9</sup> may interfere with the T cell-mediated inflammatory reaction against mutant keratinocytes hidden in Blaschko's lines,<sup>10</sup> thought to be caused in lichen striatus by infectious, mechanical or immunologic factors. It might be argued that the observed complete remission of LS in our patient may be due to the spontaneous healing of this dermatosis rather than to the pharmacological action of imiquimod. Although this possibility cannot be definitely ruled out, it seems, however, very unlikely in view of the rapid response and the complete disappearance of the skin lesions soon after the onset of treatment.



**FIGURE 2.** Histological aspect of lichen striatus (hematoxylin-eosin  $\times 400$ ).

## IMIQUIMOD IN LICHEN STRIATUS

Our findings suggest that topical imiquimod may be an effective and safe alternative treatment for lichen striatus. Further placebo-controlled, randomized clinical trials are now warranted to define the efficacy and safety of this compound in the treatment of recalcitrant, persistent and relapsing cases of lichen striatus.

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