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DIAGNOSTIC ERRORS IN LICHEN STRIATUS: THE IMPACT OF IRRATIONAL USE OF ANTIFUNGALS

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ABSTRACT
Lichen striatus is a rare inflammatory dermatosis characterized by the appearance of linear papules that follow Blaschko's lines. Although it can affect any age group, it is more common in children between 5 and 15 years old. Its etiology is uncertain, although it is associated with genetic, autoimmune and infectious factors. Clinically, it presents with erythematous or hypopigmented papules, with a slightly raised texture, arranged in a unilateral linear pattern. The lesions are usually asymptomatic or slightly pruritic and evolve in a self-limiting manner over a period of 6 to 24 months. The diagnosis is mainly clinical, but in atypical cases a skin biopsy may be required. The differential diagnosis includes linear lichen planus, incontinence pigmenti, linear inflammatory nevus, cutaneous lupus erythematosus, linear psoriasis, vitiligo, and pityriasis lichenoides chronica. Histopathology shows a band lymphocytic infiltrate in the superficial dermis. Treatment is conservative due to its self-limiting course. In symptomatic cases, topical corticosteroids, calcineurin inhibitors, emollients, oral antihistamines and, in refractory situations, phototherapy can be used. Educating caregivers about the benign nature of lichen striatus is essential to avoid unnecessary interventions. This case highlights the importance of an accurate differential diagnosis in pediatric dermatology to prevent the irrational use of topical treatments, such as antifungals, and reduce diagnostic errors. Continuous training of health professionals and the use of complementary diagnostic tools is recommended to improve care for these conditions.

KEYWORDS: Lichen striatus, treatment, irrational use.

INTRODUCTION
Lichen striatus is a rare inflammatory dermatosis characterized by the appearance of linear papules following Blaschko's lines. Although it can occur in any age group, its manifestation in the pediatric population poses a diagnostic challenge due to its low prevalence and similarity with other skin pathologies. This condition, considered benign and self-limiting, causes concern in parents and caregivers due to the abrupt appearance and striking appearance of the skin lesions, which leads to frequent dermatological consultations.

This pathology has been primarily described in children between 5 and 15 years old, although it can also affect infants and adults. Its geographical distribution is broad, with no clearly established racial or gender predilection. The lack of consensus regarding its etiology and underlying pathogenic mechanisms has motivated various studies in the past decade, focusing on the possible involvement of immunological, genetic, and environmental factors. It has been suggested that alterations in the immune system, such as dysfunctions in the regulation of cellular immune response, may play a key role in its development.

Its impact is not limited to the physical domain; it can also affect the emotional well-being of the child and the family dynamic, especially when the lesions are extensive or aesthetically noticeable. This highlights the importance of early and accurate diagnosis, as well as effective communication between healthcare professionals, patients, and their families to minimize anxiety associated with the disease.

Despite its self-limited nature, lichen striatus presents a challenge for pediatric dermatologists due to the need to differentiate it from other more severe or persistent linear dermatoses. Diagnostic confusion may lead to unnecessary invasive tests or the use of inappropriate treatments. This irrational use of medications, especially in the context of lichen planus, is often due to the difficulty in establishing an accurate diagnosis. Inappropriate prescription of topical or systemic treatments can worsen the clinical picture or cause

unnecessary adverse effects.[11] Therefore, it is essential for clinicians to have a thorough understanding of its clinical and pathological features to establish an accurate diagnosis and provide proper guidance to caregivers.

Etiopathogenesis

The etiology of lichen striatus remains uncertain. A possible association with genetic, autoimmune, and infectious factors that trigger a localized cutaneous inflammatory reaction has been suggested. Recent studies indicate that alterations in cutaneous embryogenesis may predispose to the appearance of this disease, as well as exposure to certain medications or prior viral infections.[1,2]

Clinical Features

Clinically, it presents as erythematous or hyperpigmented papules arranged in linear patterns following Blaschko's lines. These lesions may vary in color, from pink or red to brown or grayish, depending on the skin phototype and the temporal evolution of the lesion. Their texture is usually slightly elevated and rough to the touch, and in some cases, fine scaling is observed on the surface of the papules.[12]

Lesions are asymptomatic in most cases, although some patients may report mild to moderate pruritus. This symptom may intensify in situations of heat, sweating, or friction with clothing. The most frequent distribution of lesions is unilateral, predominantly affecting the trunk, upper, and lower limbs, following a linear pattern that respects the midline of the body.

In certain cases, lichen striatus may present atypical clinical variants, such as the hypopigmented form, which is mainly observed in patients with darker skin. This variant is characterized by the presence of hypopigmented macules instead of papules, which can lead to confusion with other conditions such as vitiligo or pityriasis alba.[13] Another less common variant is generalized lichen striatus, where lesions can spread more diffusely, although still respecting Blaschko's lines.

The natural course is self-limited, with a duration ranging from 6 to 24 months, although in some cases, it may persist for longer periods. After the resolution of lesions, areas of residual hyperpigmentation may remain, which tend to gradually disappear without the need for treatment.

Differential Diagnosis

The diagnosis of lichen striatus is clinical, although in atypical cases, a skin biopsy may be required to confirm the diagnosis. The main entities to consider in the differential diagnosis include:

- **Linear lichen planus:** Presents with violaceous, pruritic papules that also follow a linear pattern. Histopathology may be similar, but lichen planus usually has a greater inflammatory infiltrate and more marked changes in the epidermis.
- **Incontinentia pigmenti:** Mainly affects infants and progresses in stages, starting with vesicles and evolving into verrucous and hyperpigmented lesions. It is important to differentiate as it is associated with systemic anomalies.[14]
- **Inflammatory linear nevus:** Erythematous and scaly lesions with intense pruritus, which can resemble lichen striatus but have a more chronic course and are resistant to conventional treatment.
- **Cutaneous lupus erythematosus:** Although less common in children, it can manifest with linear erythematous lesions. Lupus is associated with photosensitivity and systemic alterations, guiding the diagnosis.
- **Linear psoriasis:** A variant of psoriasis that follows Blaschko's lines, with well-defined erythematous-squamous plaques and a chronic course.
- **Vitiligo:** In its segmental form, it may mimic the hypopigmented variant of lichen striatus but lacks inflammation and scaling.
- **Chronic lichenoid pityriasis:** Presents with similar scaly papules but with a more prolonged evolution, often associated with intense pruritus.[15]

Histopathology in lichen striatus shows a band-like lymphocytic infiltrate in the superficial dermis, hyperkeratosis, and vacuolar degeneration of the basal layer, features that help differentiate it from these entities.[7]

TREATMENT

Treatment is usually conservative due to its self-limiting course. In most cases, no therapeutic intervention is required, as the lesions tend to resolve spontaneously within 6 to 24 months. However, in symptomatic cases or with significant aesthetic compromise, various therapeutic strategies can be employed to relieve symptoms and improve skin appearance.

- **Topical corticosteroids:** First-line treatment in cases with inflammation or moderate pruritus. Low to medium potency corticosteroids are recommended to reduce inflammation and associated pruritus.[8] However, prolonged use should be avoided to prevent side effects such as skin atrophy.
- **Calcineurin inhibitors:** Tacrolimus and pimecrolimus are effective alternatives, especially in sensitive areas like the face or skin folds. These agents have a favorable long-term safety profile compared to corticosteroids.[9]
- **Emollients and skin care:** Emollients help maintain the skin barrier, reducing dryness and pruritus. Regular application is recommended to improve patient comfort.
- **Oral antihistamines:** In cases of intense pruritus unresponsive to topical treatments, antihistamines can provide symptomatic relief.
- **Phototherapy:** In refractory or generalized cases, narrowband UVB phototherapy has proven effective in reducing inflammation and accelerating lesion

resolution.[10] This treatment should be performed under the supervision of a specialized dermatologist.

- **Systemic treatments:** In extremely rare cases of lichen striatus resistant to conventional treatment, systemic immunomodulatory drugs may be considered, although evidence in this context is limited.

It is essential to educate parents and caregivers about the benign and self-limited nature of lichen striatus to avoid unnecessary interventions and reduce anxiety related to the condition. Periodic follow-up may be useful to monitor clinical evolution and adjust treatment as needed.

Current Illness

A 7-year-old female patient presents for medical consultation accompanied by her parents, who report the appearance of skin lesions on the left leg approximately one month ago. She was initially evaluated by a physician who diagnosed superficial mycosis and prescribed topical antifungal treatment (miconazole) applied every 12 hours for two weeks.

Despite treatment, the parents did not observe significant clinical improvement, prompting them to seek a second opinion. No changes in the size or characteristics of the lesions were reported during this period. The patient has no associated systemic symptoms such as fever, general malaise, weight loss, or night sweats.

Personal Medical History

- No history of chronic diseases.
- No known drug allergies.
- Complete vaccination schedule according to age.
- No history of recurrent skin infections.

Family History

- No relevant family history of dermatological, autoimmune, or allergic diseases.

Physical Examination

- **General Condition:** Patient in good general condition, alert, and cooperative.
- **Skin:** Papulo-erythematous and hypopigmented lesions arranged in a linear pattern following Blaschko's lines, located on the posterior surface of the leg. The lesions are slightly elevated with no evident scaling or signs of secondary infection.
- **Other Systems:** No relevant findings.

Fig. 1: Small hypopigmented papules are observed, arranged in a linear pattern following Blaschko's lines, located on the leg. The lesions have a slightly elevated texture, with no visible scaling, and are accompanied by some residual erythematous macules.

Diagnostic Impression

- Lichen striatus

Treatment

The treatment was expectant since the clinical diagnosis does not compromise life or function. A future re-evaluation by a pediatric dermatologist was considered as part of the case follow-up.

DISCUSSION

This case highlights the importance of an accurate differential diagnosis in pediatric patients with persistent skin lesions. The irrational use of topical antifungals, as observed in this patient, reflects a common tendency toward empirical treatment without proper diagnostic evaluation. This approach can not only be ineffective but also delay the correct diagnosis, cause unnecessary side effects, and contribute to antifungal resistance.

In the case of lichen planus in children, diagnostic errors are frequent due to its variable clinical presentation and its resemblance to other dermatoses, such as superficial mycoses or contact dermatitis. Lack of familiarity with the clinical variants of lichen planus and the omission of complementary diagnostic tools, such as dermoscopy or skin biopsy, increase the risk of errors.

To prevent these errors and the inappropriate use of topical medications, it is essential to

1. Promote continuous education in pediatric dermatology for healthcare professionals, with an emphasis on the differential diagnosis of linear dermatoses.
2. Encourage an evidence-based diagnostic approach, using complementary tools such as dermoscopy and histopathology when necessary.
3. Avoid prolonged empirical treatments without a clear diagnostic confirmation.

4. Educate caregivers on the importance of seeking specialized medical attention when there is no response to initial treatment.

A more systematic and reflective clinical approach will improve outcomes in the management of pediatric skin diseases, reducing both the unnecessary use of medications and complications derived from incorrect diagnoses.

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