CASE REPORT

Linear psoriasis: case report on three year old child*

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Abstract: Atypical and unusual locations of psoriasis are very frequent. However, localized linear psoriasis is rare, with few cases described in the literature. It is characterized by a linear distribution of psoriasis lesions along Blaschko lines. We report the case of a three years old child, who presented unilateral erythematous scaly plaques arranged along Blaschko lines in the left hemithorax, with no associated symptoms and no lesions in other parts of the body. The differentiation of linear psoriasis from other linear dermatoses is not easy. The combination of a thorough history, a careful examination of the skin and histopathology are essential to ensure the correct diagnosis and appropriate treatment.
Keywords: Child; Nevus; Psoriasis

INTRODUCTION

Psoriasis is a chronic, common skin disease, affecting approximately 2% of the population. Linear psoriasis is an unusual subtype characterized by distribution of lesions along Blaschko lines.

The main differential diagnosis is related to the inflammatory linear verrucous epidermal nevus (ILVEN), which also follows the Blaschko lines and usually appears in childhood. This condition is intensely pruritic and usually resistant to antipsoriatic.

In contrast, linear psoriasis is often asymptomatic or with mild pruritus, it responds well to antipsoriatic treatment and tends to have a late manifestation. However, it can occur in early childhood in an unusual nevoid distribution along the Blaschko lines.[1]

Pathogenesis of linear psoriasis is not clear, but it could be explained by the well-established concept of genetic mosaicism.[2]

CASE REPORT

Three year old boy presenting erythematous scaly plaques, following a linear path in the left hemithorax, with onset 3 months ago and progressive worsening (Figure 1).

There was no history of trauma in the chest before the appearance of linear lesion, and also no pruritus or other symptoms. There was no nail or mucosal changes, neither skin lesions in other parts of the body. No family member reported history of psoriasis or similar skin lesions.

Main diagnostic hypotheses were ILVEN and linear psoriasis. For better understanding of the clinical condition, it was performed a biopsy of the lesion in the left thoracic region. The result showed psoriasiform dermatitis with characteristics of psoriasis (Figures 2 and 3).

Topical treatment was then initiated with clobetasol propionate 0.05%. In 3 weeks there was a significant decrease of the plaques, with only a few slightly hypopigmented spots remaining, along Blaschko lines in the left hemithorax (Figure 4).

DISCUSSION

Linear psoriasis, in the absence of lesions elsewhere on skin, is an unusual and probably underdiagnosed disease. There are few cases described in the literature, and therefore there isn't an estimated prevalence of the disease. Its clinical and histologic similarity to ILVEN remains a diagnostic challenge.

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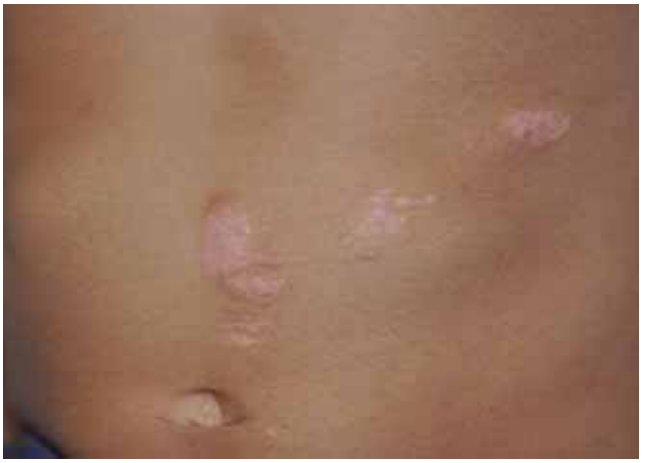

Figure 1: Erythematous, scaly plaques, following linear path in the left hemithorax

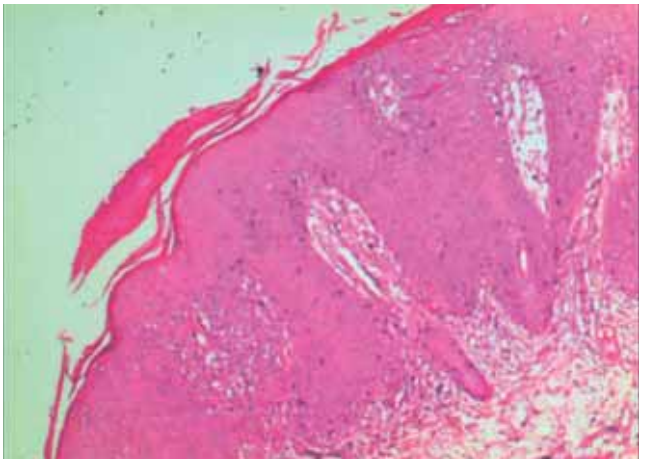

Figure 2: Histological image (400x): epidermis shows pattern of psoriasiform acanthosis associated with hypo-agranulosis and parakeratotic hyperkeratosis. Accompanying superficial perivascular lymphocytic inflammation

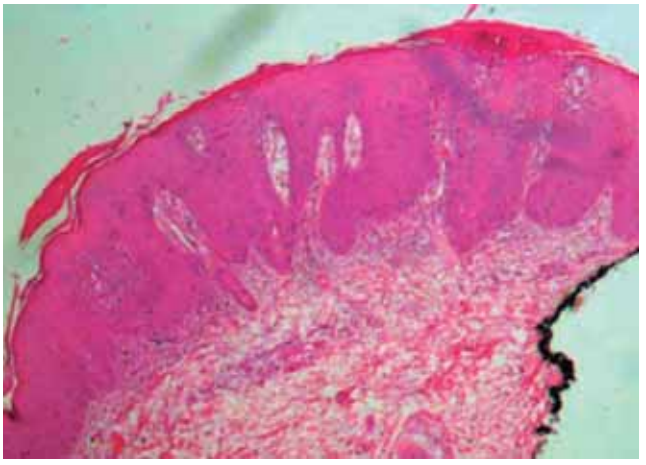

Figure 3: Histological image (400x): Epidermis shows psoriasiform acanthosis associated with hypo-agranulosis and parakeratotic hyperkeratosis. Accompanying superficial perivascular lymphocytic inflammation

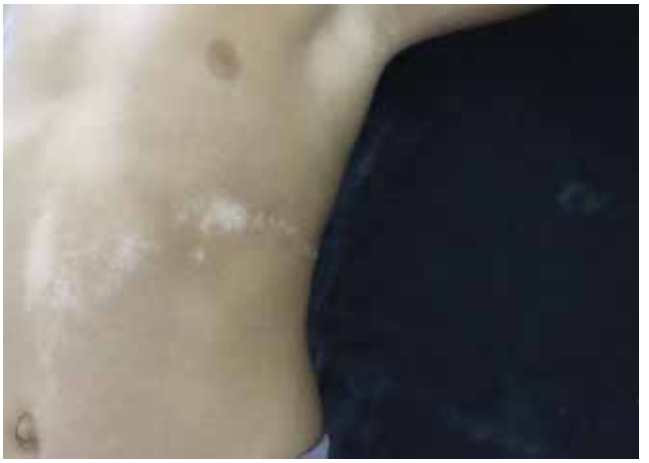

Figure 4: Hypopigmented residual spot along Blaschko lines in the left hemithorax after topical treatment with clobetasol 0.05%

Distinction between these two entities has been discussed in literature.[3] Late start of asymptomatic or mildly itchy lesions, rapid progression, possible involvement of the nails and/or scalp and favorable response to antipsoriatic treatment, converge for the diagnosis of linear psoriasis. In contrast, ILVEN lesions usually appear in the first months of life, are slowly progressive, very itchy and highly refractory to antipsoriatic treatment.

Histologically, ILVEN presents hypergranulosis associated with areas of orthokeratosis alternating with agranulocytosis associated with areas of parakeratosis. As non-specific characteristics, literature describes papillomatosis, acanthosis and perivascular and dermal chronic lymphocytic infiltrate, which can also be seen in psoriasis. However, Munro's microabscess, considered as being characteristic of psoriasis, can occasionally be seen in ILVEN.[4]

Unfortunately, proposed clinical and pathological criteria fail in situations where there is significant overlap between ILVEN and linear psoriasis. Immunohistochemical studies could be useful in distinguishing them. There is little expression of keratin 10 in psoriasis, while its levels remain normal in ILVEN. Also, involucrin would be detectable in psoriasis, but absent in ILVEN.

Pathogenesis of linear psoriasis is unknown, but it could be explained by the concept of genetic mosaicism. Happle proposed that loss of heterozygosity would occur in somatic cells during embryogenesis, resulting in homozygosity to one of predisposition genes for psoriasis. It would be a plausible explanation for the following characteristics: non-hereditary, linear distribution pattern corresponding to many other disorders in mosaic, and possibility of coexistence of common and linear forms.

Psoriasis is a multifactorial disease, so the

presence of environmental factors can be decisive for the appearance of the lesions. This explains why linear psoriasis is usually absent at birth, developing later in life.

Despite the onset of lesions at the age of 3 years, some features make linear psoriasis the main hypothesis for the reported patient: male patient, absence of prior nevus lesions, symptoms such as itching, rapid progression of the lesions, therapeutic success to antipsoriatic treatment and histological findings. Although rare, there have been some reports of linear psoriasis that occurred in early childhood. [5]

We believe that linear psoriasis is really a distinct entity that can be diagnosed based on the combination of complete history, careful physical examination, consistent histological findings and satisfactory response to treatment. Immunohistochemistry, when available, could also be useful. ❑

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