

Lichen Striatus: Description of 89 Cases in Children

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Abstract: Lichen striatus (LS) is a benign, self-limited, linear, inflammatory dermatosis of unknown etiology that usually affects children. We analyzed 89 cases in regard to age of appearance, sex, race, symptoms, seasonal incidence, localization of lesions and affected side of the body, and presence of atopy. Lesions predominated on the inferior limbs, with no preponderance of any age, and were asymptomatic in the majority of the instances. There was no difference in the incidence of LS in regard to the season of the year. A possible association of lichen sclerosus with atopy and pruritus was observed.

Lichen striatus (LS) is a benign, self-limited, linear, inflammatory dermatosis of unknown etiology (1). It mainly affects children (2,3) between the ages of 3 and 15 years (3–6) and is more common in girls (2,4). Although rare in adults, LS may appear at any age.

It characteristically appears as shiny, flat-topped, erythematous papules ranging from 2 to 4 mm in diameter, which cluster in a continuous or interrupted linear pattern, sometimes reaching 1–3 cm wide. This pattern corresponds to the lines of Blaschko. It is believed that these lines indicate somatic mosaicism reflecting the distribution of clones of abnormal keratinocytes during embryonic migration (2,5,7,8).

Lesions are typically solitary and unilateral, occurring more frequently on the legs, although any part of the body may be affected (3,9). Nail involvement is rare (5,9), but onychodystrophy may occur (6).

The onset of lesions is sudden and progresses to the full clinical aspect in days or weeks. LS is typically asymptomatic, but intense pruritus can occur (3). Its benign, self-limited course is marked by spontaneous

involution in 6–12 months, with no scar formation (3). Residual hyper- or hypopigmentation may persist for a couple of years. Corticosteroids do not speed the involution of lesions and are not routinely used in treatment, but can be employed to reduce pruritus (10).

The etiology of LS is still unknown. One hypothesis is a possible viral origin for the disease (5,9,11–13). Kennedy et al (9) observed that the occurrence varied enormously with the season of the year, with an increased incidence in spring and summer. They associated this increased incidence in the hot months with a viral disease. Toda et al (14) suggested a link between a personal or family history of atopy and development of LS.

Although the etiology is unknown, the histologic pattern of LS is well defined. A perivascular inflammatory infiltrate of lymphocytes and histiocytes in the upper dermis, which occasionally extends to the deep dermis, is seen. Epidermal features may include spongiosis, exocytosis, and dyskeratosis. A lichenoid pattern with inflammatory infiltrate near the dermoepidermal junction may be present. Hair follicles and sweat glands can be

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affected (1,15,16). These histopathologic findings are not specific and may appear in other diseases such as lichen planus or other inflammatory dermatoses.

METHODS

Our study included all cases of LS seen in the Pediatric Dermatology Division of the Pediatric Department, Paraná Federal University, from January 1980 to December 2000. Diagnosis was based on clinical findings and some of the patients were biopsied to confirm the clinical hypothesis. Doubtful cases were excluded. Ours was an autoselected sample because only those LS patients who sought medical support were analyzed. Age and month of appearance of lesions, affected side of the body, and personal history of atopy were recorded.

Statistical analysis was done by the Statistics Department of our University using Fischer's exact test, exact reliance intervals, and Student's *t*-test. These tests were used to confront all possible relationships between the collected data.

RESULTS

Eighty-nine patients were analyzed. We found a female preponderance (67 cases; 75.3%). Eighty-three children were white (93%) and six (7%) were black. Twenty-nine patients (32.6%) were infants (29 days to 2 years), 27 (30.3%) were 2–6 years old, 24 (27%) were 6–10 years old, and 9 (10.1%) were 10–14 years old.

Forty-six children (51.7%) had lesions on the legs; in 31 (34.8%) they were located on the arms, in 9 (10%) on the trunk, and in 3 (3.5%) only the face was affected. Distribution of lesions was unilateral in 80 patients (90%) with 43 (53%) on the right side and 37 (47%) on the left side of the body, and bilateral lesions were found in 9 patients (10%).

Thirty patients (34%) had pruritus and 59 (66%) were asymptomatic. Eighteen patients (20%) had a history of atopy.

Of the 76 patients analyzed in regard to seasonality, the appearance of lesions occurred in 17 (22.4%) during spring months, in 26 (34.2%) in the summer, in 17 (22.4%) in autumn, and in 16 (21%) in winter.

DISCUSSION

The analysis of 89 patients with LS found a female:male ratio of 3:1 (Fig. 1), showing a clear preponderance of the disease in girls, as has been described by other authors (3,4,6,9,17). Taieb et al (5) found an equal incidence in both sexes, and there are no reports in which boys were more often affected than girls. The ages of

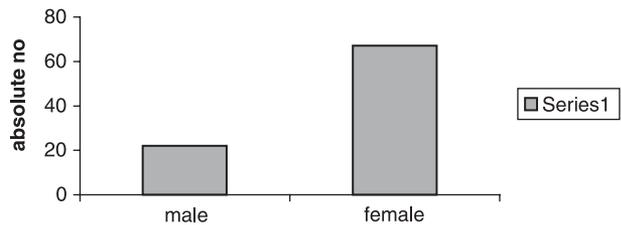


Figure 1. Distribution of LS patients by gender.

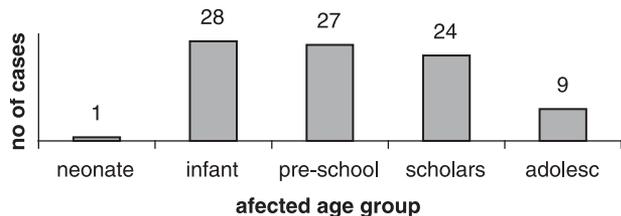


Figure 2. Distribution of LS patients by age group.

our patients ranged from 3 months to 14 years, the same age interval as has been reported in other series (3–6).

In contrast to the findings of Kennedy and Rogers (9) and Sittart et al (11), who reported an incidence peak in preschool children, we found no preponderance of LS in any age group (Fig. 2).

In regard to race, white children were almost 14 times more often affected than black children, a fact that can be explained by the clear white population predominance in our state and not by race as a predisposing factor to development of LS.

In some reported series there was mostly involvement of the superior limbs (4,5,17). Kennedy and Rogers (9) found lesions on the superior limbs 1.7 times more often, as was also seen by Ruiz-Maldonado et al (3). In our study, 46 of 89 patients had lesions on the legs and 31 had lesions on the arms. This means that more than half of the instances occurred on the legs; this location is 1.5 times more common than occurrence on the arms. Rarely other locations were also affected, such as the trunk (Fig. 3) (thorax, abdomen, and dorsum) and face (Fig. 4). In all patients, the lesions followed a pattern corresponding to the lines of Blaschko.

Lichen sclerosis is a dermatosis of unilateral manifestation in the majority of cases (3,9). In our study, 90% of patients had unilateral lesions. The right and left sides were equally affected and the side involved was independent of gender. Bilateral lesions were found in 10% of patients.

In addition, 66% of our patients were asymptomatic. This finding is in agreement with the series of Ruiz-Maldonado et al (3), who described 80% of patients



Figure 3. Lichen striatus on the thorax and arm.

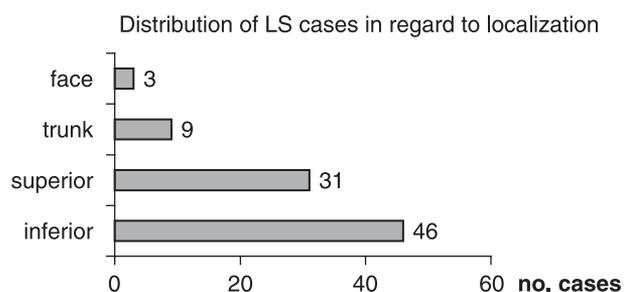


Figure 4. Distribution of LS patients by location of lesions.

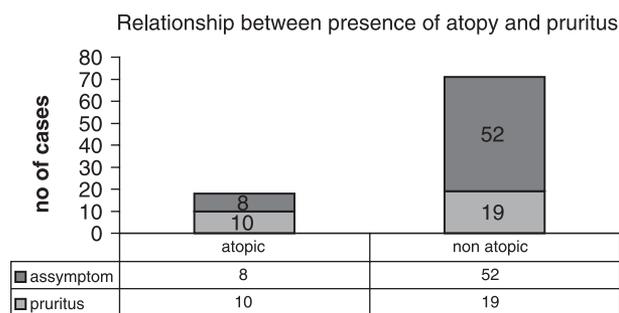


Figure 5. Relationship between atopy and pruritus.

without associated symptoms. Thirty-four percent of our children had pruritus, and this feature was independent of age. A relevant finding was that most of the atopic patients (55%) had pruritus (Fig. 5). Only 26% of non-atopic patients reported pruritus.

Toda et al (14), in a study of 26 patients with LS, found that 84.6% had atopy, suggesting that a personal or family history of atopy could favor the appearance of the disease. Di Lernia et al (18), studying a group of 19 children, found that 53% had atopy, a much lower percentage than that observed by Toda et al (14). In our study, only 20% of patients with a personal history of

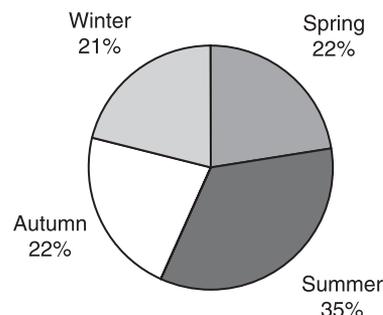


Figure 6. Incidence of LS by season of the year.

atopy had no familial atopy. These findings do not allow the association of LS with atopy, since this number is very close to the incidence of atopy in the general population, which is 15% (19). In atopic patients, lesions were equally distributed when compared to nonatopic children, with no predilection of location or affected side.

Kennedy et al (9) observed an increased incidence of LS in spring and summer, and suggested a possible viral origin. Significant differences in regard to the season of the year were not found in our study (Fig. 6). Nevertheless, their theory cannot be discarded because seasons in Brazil are not well defined and some climatic differences may have occurred from one year to another throughout the 20 years of the survey.

In conclusion, through this study we found that LS is a disease that predominately affects girls between 3 and 10 years of age, involving mostly the inferior limbs unilaterally, with either side being equally likely to be affected and with a pattern following the lines of Blaschko.

Most of the children did not show any symptoms, but when symptomatic, the most common finding was pruritus. Asymptomatic lesions were twice as common as pruritic ones.

Atopy was not a striking feature, as its proportion was similar to that found in the general population. Nevertheless, although the existence of atopy or pruritus was infrequent, they tended to be seen together in many patients. The majority of atopic patients presented with pruritic lesions, and this may suggest that the sensitive skin of these children is more susceptible to the development of exacerbated reactions in LS lesions.

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