

CLINICO-EPIDEMIOLOGICAL PROFILE OF PATIENTS WITH LICHEN STRIATUS: A RETROSPECTIVE STUDY FROM A TERTIARY CARE CENTRE IN NORTH INDIA

Arti Singh¹, Ramesh Kumar², Kapil Vyas³, Rozy Badyal², Pritee Sharma², Suresh Kumar Jain², Dinesh Chand Mathur¹

¹Department of Dermatology, Venereology, Leprology, JNU Medical College, Jaipur, Rajasthan

²Department of Dermatology, Venereology, Leprology, Government Medical College Kota, Rajasthan

³Department of Dermatology, Venereology, Leprology, Geetanjali Medical College, Udaipur, Rajasthan

Corresponding Author:

Ramesh Kumar

Government Medical College Kota, Rajasthan

E-mail:kush_ramesh3@yahoo.com

Abstract

Background: Lichen striatus (LS) is a benign, self-limited, linear, inflammatory dermatosis of unknown etiology that usually affects children. Most of the literature on lichen striatus has appeared as case reports or isolated case series from India.

Material and Methods: Clinical records of children with LS, who attended the Department of dermatology, at our tertiary care centre, from July 2013 to December 2017, were analyzed.

Results: Twenty nine patients were analyzed. Mean age was 6.5 years, ranging from 1.6 year to 12 years. We found 17 (58.62%) male and 12 (41.38%) female cases with slight male preponderance. Nine (31.03%) patients were less than 3 year, 13 (44.82%) patients from 3-6 year age group, 7 (24.13%) patients from 6-12 year age group. Most common site was upper limbs 11 (37.93%) cases followed by trunk 7 (24.13%). Most common complaint was hypo pigmentation in 22 (75.86%) children by the parents. Nail involvement was seen in 3 (10.34%) boys.

Conclusion: In this large case study, lichen striatus appears as a disease of young children with a male predilection. The disease appears statistically more often in the cold seasons, particularly in the winter. The most frequently involved sites are the limbs, while nail involvement is very rare.

Keywords: Lichen striatus, Linear inflammatory dermatosis

Introduction

Lichen striatus (LS) is an asymptomatic self-limited skin disease of unknown etiology which was first described by Senear and Caro in 1941.^[1] LS is characterized by erythematous or brownish papules with a flattened surface that are frequently scaly in appearance and occasionally display vesicles. The lesions are usually solitary and unilateral and have a linear distribution following Blaschko's lines, usually on the extremities.

Atypical forms with multiple and bilateral lesions have been described. Onset is usually sudden, with the disease progressing over days or weeks and slowly decreasing spontaneously until the papules resolve within 6–24 months, leaving a transitory residual hypopigmentation, especially in patients with a dark complexion.

The inflammatory phase is not always detected, and hypopigmentation may be the first manifestation. The higher incidence during spring and summer, along with the existence of familiar clustering, suggest that viral infections could be an elicitation factor. Other possible precipitating factors may include cutaneous injury, trauma, hypersensitivity, or other as yet unspecified factors.

Material and methods

Medical records and photographs were used in a retrospective study of 29 children affected by lichen striatus who were seen at

the Department of Dermatology, Government Medical College, Kota, India, between July 2013 and December 2017. We studied the gender, age, and family history of the patients as well as the season of onset, morphology, distribution, extent, duration, itching, residual hypopigmentation and treatment of lichen striatus and any associated symptoms or diseases.

Results

Twenty nine patients were analyzed (Table 1). Mean age was 6.5 years, ranging from 1.6 year to 12 years. We found 17 (58.62%) male and 12 (41.38%) female cases with slight male preponderance. Nine (31.03%) patients were less than 3 year, 13 (44.82%) patients from 3-6 year age group, 7 (24.13%) patients from 6-12 year age group. Most common site was upper limbs 11 (37.93%) cases followed by trunk 7 (24.13%) (figure-1). Most common complaint was hypo pigmentation in 22 (75.86%) children by the parents. Nail involvement was seen in 3 (10.34%) boys.

Morphology

Based on the morphology of the lesions, we identified the following three clinical patterns:

Lichen striatus albus, with hypopigmented macules and/or papules with only a few typical lichenoid pink papules in 22(75.86%) patients. Typical lichen striatus, with pink, red, or flesh colored, flat-topped, lichenoid papules was found in 4(13.79%) patients.

Table 1. Comparison of Visual analogue scale (VAS) in both the study groups at different time interval.

Clinical profile	Number of patients	Percentage(%)
Age (Years)	(Mean 6.5 years; range 16 months -12 years)	
1-3	9	31.03
3-6	13	44.82
6-12	7	24.13
Sex (M:F)	17:12	
Family history of LS	None	
history of atopy	8	27.58
Season of onset		
Winter	8	27.58
Spring	7	24.13
Summer	6	20.68
Autumn	8	27.58
Distribution		
Single linear/curved band	22	75.86
Multilinear band	6	24.13
Localised oval patch	1	3.44
Involved sites		
Single leg	4	13.79
Single lower limb with buttock	2	6.89
Single arm	3	10.34
Single arm with shoulder	4	13.79
Single Hand	1	3.44
Only head/neck/face area	4	13.79
Only trunk	4	13.79
Back with shoulder	3	10.34
Only forearm	3	10.34
Penis	1	3.44
Morphology		
Typical Lichen striatus	4	13.79
Lichen striatus albus	22	75.86
Nail Lichen striatus	3 (2 finger and one toe nail)	10.34
Associated diseases		
Atopy (atopic dermatitis allergic rhinitis allergic conjunctivitis,asthma)	8	27.58
P. alba	2	6.89
History of trauma	None	
History of viral fever	None	



Figure 1a : Showing distribution of lichen striatus lesions ; 1a- over face



Figure 1b : lichen striatus lesions over penisLtd



Figure 1c : lichen striatus lesions over trunk

Nail lichen striatus, which includes onychodystrophy, thinning, longitudinal ridging and splitting, fraying, and onycholysis restricted to the lateral portion of the affected nail, or more rarely, to the medial portion. Nail lichen striatus was seen in three (10.34%) boys, ages 9 and 11 years (figure-2). In all patients of nail lichen striatus, cutaneous involvement was also seen.

Distribution of lesions was unilateral in all patients with 19 (65.55%) on the right side and 10 (34.48%) on the left side of the body. Thirteen patients (44.82%) had pruritus and 16 (55.17%) were asymptomatic. Eight patients (27.58%) had a history of atopy.

All of the 29 patients analyzed in regard to seasonality, the

appearance of lesions occurred in 7 (24.13%) during spring months, in 6 (20.68%) in the summer, in 8 (27.58%) in autumn and in 8 (27.58%) in winter.



Figure 2a : Variants of lichen striatus ;2a -linear LS



Figure 2b : : Hypopigmented variant of lichen striatus



Figure 3 : Nail lichen striatus

Table 2. Review of the various studies of lichen striatus

Series of cases by author/year	Number of cases	Mean age (years) (range)	Gender M/F	Seasons of presentation (%)	Location (%)	Mean duration of Episode	Itch (%)	Residual hypopigmentation (%)
Our study	29	5.06 (16m to 12 yr)	19:12 (3:2)	Spring (24.13) Summer(20.68) Autumn(27.58) Winter (27.58)				
Kennedy et al ⁵	61	2.98	1:2	Spring and summer (71)	EE 77, IE>SE	NC	NC	NC
Sittart et al ⁸	53	2.5 y (1–40 m)	1:2.3	Spring and summer (75)	EE 92	NC	NC	NC
Taniguchi et al ¹⁸	89	29 d–14 y)	1:3	Spring (22.4) Summer (34.2) Autumn (22.4) Winter (21)	EE 86.5 IE>SE	NC	34	NC
Patrizi et al ¹⁹	115	4 y + 5m (1 m–13 y)	1:2	Spring (24) Summer (4) Autumn(23) Winter (48)	EE 62 IE>SE	6 m	11	28.57, 3.8 hyper

Discussion

The analysis of 29 patients with LS found a male:female ratio of 1.41:1 showing a clear preponderance of the disease in boys, in contrast to the findings of other studies.^[2,3,4,5,6] Taieb et al⁷ found an equal incidence in both sexes. The ages of our patients ranged from 1.6 to 12 years, the same age interval as has been reported in other series 2,3,4,7. Review of the various studies is shown in table 2.

As in the study of Kennedy and Rogers⁵ and Sittart et al⁸, who reported an incidence peak in preschool children, we also found 13(44.82%) cases of LS in 3 to 6 years age group.

In some reported series there was mostly involvement of the upper limbs 3,6,7. Kennedy and Rogers⁵ found lesions on the superior limbs 1.7 times more often, as was also seen by Ruiz-Maldonado et al.² In our study, 11(40.7%) of 29 patients had lesions on the upper

limb and 6 had lesions on the lower limbs. This means that almost half of the instances occurred on the upper limbs; this location is 2 times more common than occurrence on the legs 4 (13.79%). Other locations were also affected, such as the trunk (thorax, abdomen, and dorsum) and neck. In all patients, the lesions followed a pattern corresponding to the lines of Blaschko.

Lichen striatus is a dermatosis of unilateral manifestation in the majority of cases.^[2,5] In our study, all of the patients had unilateral lesions. The right side was involved more than left and the side involved was independent of gender. Bilateral lesions were described in few case reports.^[9-13] Bilateral lesions were not found in our patients.

In addition, 16 (55.17%) of our patients were asymptomatic. This finding is in agreement with the series of Ruiz-Maldonado et al^[2], who described 80% of patients without associated symptoms. Thirteen (44.82%) patients in our study had pruritus

and this feature was independent of age. A relevant finding was that all of the atopic patients were 8 (27.58%) had 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^[15], 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 8 (27.58%) patients have personal history of 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%.^[16]

Kennedy et al^[5] 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. In our study most of the patients 16 (55.16%) appeared in winter and autumn while 13 cases appeared in other rest of the seasons.

Differential diagnosis of LS may include different linear papular eruptions such as linear psoriasis, linear Darier's disease, linear lichen planus, linear porokeratosis and inflammatory linear verrucous epidermal nevus (ILVEN). Hypopigmented lesions may be confused with linear vitiligo or nevoid hypomelanosis (the so-called hypomelanosis of Ito). Of these entities, ILVEN may be the most difficult to differentiate. In contrast to LS, ILVEN is always pruritic and it does not regress spontaneously but instead undergoes periods of exacerbation with periods of improvement.^[17]

Conclusion

In conclusion, through this study we found that LS is a disease that predominately affects boys between 1.5 and 14 years of age, involving mostly the upper limbs unilaterally, with right side being affected more than left side 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.

How to cite this article:

Singh A, Kumar R, Vyas K, Badyal R, Sharma P, Jain SK, Mathur DC. Clinico-epidemiological profile of patients with lichen striatus: A retrospective study from a tertiary care centre in North India. *JDA Indian Journal of Clinical Dermatology* 2020;3:08-11

References

1. Senear FE, Caro MR. Lichen striatus. *Arch Dermatol Syph* 1941;43:116-33
2. Ruiz-Maldonado R, Violante-Morlock N. Liquen Estriado. *Dermatol Mex* 1971;15:27-41.
3. Staricco RG. Lichen striatus. *Arch Dermatol* 1959;79:311-24.
4. Vasily DB, Bhatia SG. Lichen striatus. *Cutis* 1981;28:442-4.
5. Kennedy D, Rogers M. Lichen striatus. *Pediatr Dermatol* 1996;13:95-9.
6. Kanegaye JF, Frieden IJ. Lichen striatus: simultaneous occurrence in siblings. *Pediatrics* 1992;90:104-6.
7. Taieb A, El Youbi A, Grosshans E, Maleville J. Lichen striatus: a Blaschko linear acquired inflammatory skin eruption. *J Am Acad Dermatol* 1991;25:637-42.
8. Sittart JA, Pegas JR, Sant Ana LA, Pires MC. Lichen striatus: epidemiologic study. *Med Cutan Ibero Lat Am* 1989;17:19-21.
9. Gupta A, Gautam RK, Bhardwaj M. Bilateral lichen striatus: A case report with review of literature. *Indian Dermatol Online J* 2017;8:264-6.
10. Kurokawa M, Kikuchi H, Ogata K, Setoyama M. Bilateral lichen striatus. *J Dermatol* 2004;31:129-32.
11. Aloï F, Solaroli C, Pippione M. Diffuse and bilateral lichen striatus. *Pediatr Dermatol* 1997;14:36-8.
12. Patri P. Bilateral lichen striatus. *G Ital Dermatol Venereol* 1983;118:101-3.
13. Mopper C, Horwitz DC. Bilateral lichen striatus. *Cutis* 1971;8:140-1.
14. Toda K, Okamoto H, Horio T. Lichen striatus. *Int J Dermatol* 1986;25:584-5.
15. Di Lernia V, Ricci GP, Bonci A, Patrizi A. Lichen striatus and atopy. *Int J Dermatol* 1991;30:453-4.
16. Hurwitz S. *Clinical pediatric dermatology*. Philadelphia: WB Saunders, 1993:45.
17. Hauber K, Rose C, Brocker EB, Hamm H. Lichen striatus: clinical features and follow-up in 12 patients. *Eur J Dermatol* 2000;10:536-9
18. Taniguchi Abagge K, Parolin Marinoni L, Giraldo S, O. Carvalho V, de Oliveira Santini C, and Favre H. Lichen Striatus: Description of 89 Cases in Children. *Pediatr Dermatol* 2004;21:440-43
19. Patrizi A, Neri I, Fiorentini C, Bonci A, and Ricci G. Lichen Striatus: Clinical and Laboratory Features of 115 Children. *Pediatr Dermatol* 2004;21:197-204.

