Review Article

Lichen Striatus: Review article

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Abstract:

Introduction: The lichen striatus is a rare disease of the skin. LS mainly affects children. LS is a benign self-limited, localized blaschkolinear inflammatory disorder of unknown etiology.

Methods: A literature review was performed on any aspects of LS in children using pubmed and google scholar sing following terms: lichenstriatus, nail lichen striatus, facial Lichen Striatus, lichenoidplaque, dermatology. Articles not related to children population were excluded.

Findings: In epidemiological review most of cases in children usually were between the age of 3 and 15 years. Females are affected more than males. The etiology of LS is still unknown.in one article there is an increasing incidence in spring and summer. seasonal variation with a peak incidence of lichen striatus further suggests a viral origin. The histologic pattern of LS is well defined. A perivascular inflammatory is seen. A lichenoid pattern with inflammatory infiltrate near the dermoepidermal junction may be present. clinical and histologic findings overlap with other cutaneous disorder that follows the lines of blaschko. Lesions are usually unilateral and characteristically appears as shiny ,flattoped erythematous papules. Lesion occur more frequently on legs, although any part of the body may be affected. Treatment or no treatments was not significantly correlated with duration of disease.

Conclusion: LS mainly affects children. LS is a benign self-limited, localized blaschkolinear inflammatory disorder of unknown etiology. 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. There isn't any specific treatment for LS Its benign, Treatment or no treatments was not significantly correlated with duration of disease, self-limited course is marked by spontaneously involution in 6–12 months, with no scar formation.

Keywords: lichen Striatus, Children, Erythematous Papules, Blaschko line

Introduction:

Lichen striatus (LS) is a benign, self-limited, localized blaschkolinear inflammatory disorder of unknown etiology (1, 2). It mainly affects children (3, 4) between the ages of 4 to 6 months and 15 years(2, 3, 5-7)and is more common in girls (3, 5). Lesions begin with inflammatory papules and lichenoid plaques spreading in a blaschkolinear segment (8).

The blaschko system of nevus lines first described by Alfred Blaschko in 1901 corresponds to the developmental pattern of skin cells precursors (9, 10). Researchers later observed the linearity of certain cutaneous disorders following Blaschko lines, in particular lichen striatus(11, 12).

The lesion is usually unilateral, particularly involving the limbs alone, although lesions may extend from the trunk to a limb, and less commonly occur on the trunk alone or on the face (2, 5). Nail involvement in LS is relatively uncommon and can develop with or without skin lesions (13).

The histopathologic features of lichen striatus are nonspecific (5, 14-16). The main pathologic changes consist of a lymphocytic infiltrate mainly centered around the subpapillary vessels, extending into some of the dermal papillae and aligned along the sweat glands and hair follicles (14, 17, 18).

Methods:

A medline search was performed using the following terms: lichen striatus, nail lichen stratus, lichen striatus in children. The current narrative review was performed on databases of Pubmed and Google scholar about lichen striatus in children. Articles not related to children population were excluded the concepts of prevalence and incidence aspects of disease were extracted from the reviewed articles (19).

Findings:

1: Etiology

The incidence and prevalence is unknown,But between January 1980 and December 2000all cases of LS were identified at the pediatric dermatology Division of the pediatric Department , Parana federal university (3) And another report between January 1989 and January 2000,115 cases were identified at the pediatric dermatology unit, university of Bologna , Bologna ,Italy (20).

Most of cases occur in childen, usually between the ages of 3 and 15 years , but onset in early infancy and in adults has been reported. Females are affected approximatelytwo or three times as frequently as males (3, 20, 21).

In a case series of 115 Italian children, female predominance was noted, as was an association with atopy in 70 cases. Three types have been described: classical, alba and associated with nail involvement (22)**.**

2: Etiology:

The etiology of LS is still unknown. One hypothesis is a possible viral origin for the disease (2, 23-25)

Kennedy et al 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 (23)

Toda et al suggested a link between a personal or family history of atopy and development of LS (26). Seasonal variation with a peak incidence of lichen striatus during the spring and summer months further suggests a viral trigger (23, 24).

3: Histopathology:

The histologic pattern of LS is well defined. A perivascular inflammatory infiltrate of 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 affected (1, 26, 27)

Clinical and histologic findings overlap with other cutaneous disorders that follow the lines of Blaschko, including linear lichen planus(28), linear cutaneous lupus erythematous (29), linear psoriasis (30), linear lichen nitidus(31), and blaschkitis(32).

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 shape links 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, 3, 9, 21). Nowadays lichen striatus is arare disease.It occurs in any age but it is more common in children between 4 to 6 months and 15 years. Lichenstriatus is a benign,self limited, linear inflammatory dermatosis of unknown etiology.It characteristically appears as shiny ,flat-topped , erythematous papules that follows the blachko lines. It is spontaneously involutedbetween 6 to 12 month without scar. Corticosteroidscan not speed the involution of lesions. To provide a framework to review the incidence and prevalence of LS in children,the current concept on the prevalence and incidence of children LS are summarized.

4: Clinical features:

Lesions are typically solitary and unilateral, occur- ring more frequently on the legs, although any part of the body may be affected (4, 23). Nail involvement is rare (2, 23), 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 (4). Its benign, self-limited course is marked by spontaneously involution in 6–12 months, with no scar formation (4). Residual hyper- or hypopigmentation may persist for a couple of years (33). Textbooks indicate that the active phase of LS lasts for 6 to 12 months (34-36). Followed by flattening and persistent pigmentary alteration for 1 to 3 years (36, 37)

LS presents over days to weeks as a unilateral, solitary linear band on the extremities. Bilateral, multiple streaks and inflammatory triggers (e.g., hepatitis B vaccination) have been reported. Face, buttock, and trunk involvement can occur (34-39)

Tostiet al.3 reported that nail LS is not always associated with skin lesions. They suggested that nail LS should be sus- pected when a child or a young adult presents with lateral nail involvement of a single nail(13)

It is clinically characterized by papules arranged in bands, mainly along the Blaschko lines (2, 9, 20, 21, 40).

5: Treatment:

There isn't any specific treatment for LS. Treatments used included hydrocortisone cream, pimecrolimus, emollients, and no treatment. Treatment or no treatment was not significantly correlated with duration of disease(4)

The role of therapy with topical steroids and non-steroidal anti inflammatory agents in the treatment of lichen striatus is unclear. Previous reports have suggested that topical corticosteroids and tacrolimus may shorten the course (23, 41).

Conclusion:

In general, these findings indicated that in recent years several and different childhood Lichen Striatus cases are reported. The lichen striatus is a rare disease of the skin. LS mainly affects children. LS is a benign self-limited, localized blaschkolinear inflammatory disorder of unknown etiology. 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. There isn't any specific treatment for LS Its benign, Treatment or no treatments was not significantly correlated with duration of disease, self-limited course is marked by spontaneously involution in 6–12 months, with no scar formation.

Conflicts of Interest

The author(s) declare(s) that there is no conflict of interest regarding the publication of this paper.

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References:

1. Reed RJ, Meek T, Ichinose H. Lichen striatus: a model for the histologic spectrum of lichenoid reactions. Journal of cutaneous pathology. 1975;2(1):1-18.
2. Taieb A, El Youbi A, Grosshans E, Maleville J. Lichen striatus: a Blaschko linear acquired inflammatory skin eruption. Journal of the American Academy of Dermatology. 1991;25(4):637-42.
3. SENEAR FE, CARO MR. Lichen striatus. Archives of Dermatology and Syphilology. 1941;43(1):116-33.
4. Ruiz-Maldonado R. Violante-Morlock N. Liquen Estriado Dermatol Mex. 1971;15:27-41.
5. STARICCO RG. Lichen striatus: a study of fifteen new cases with special emphasis on the histopathological changes and a review of the literature. AMA archives of dermatology. 1959;79(3):311-24.
6. Vasily D, Bhatia S. Lichen striatus. Cutis. 1981;28(4):442-4, 6.
7. Schroeter AL, editor Pediatric Dermatology and Dermatopathology: A Text and Atlas III. Mayo Clinic Proceedings; 1995: Elsevier.
8. Keegan BR, Kamino H, Fangman W, Shin HT, Orlow SJ, Schaffer JV. "Pediatric Blaschkitis": Expanding the Spectrum of Childhood Acquired Blaschko-linear Dermatoses. Pediatric dermatology. 2007;24(6):621-7.
9. JACKSON R. The lines of Blaschko: a review and reconsideration. British Journal of Dermatology. 1976;95(4):349-60.

10. Blaschko A. Die Nervenverteilung in der Haut in ihrer Beziehung zu den Erkrankungen der Haut: Beilage zu den Verhandlungen der Deutschen Dermatologischen Gesellschaft, VII. Congress zu Breslau im Mai 1901: Braumüller; 1901.
11. Happle R. Lyonization and the lines of Blaschko. Human genetics. 1985;70(3):200-6.
12. Happle R. The lines of Blaschko: a developmental pattern visualizing functional X-chromosome mosaicism. Biology of heritable skin diseases: Karger Publishers; 1987. p. 5-18.
13. Tosti A, Peluso AM, Misciali C, Cameli N. Nail lichen striatus: clinical features and long-term follow-up of five patients. Journal of the American Academy of Dermatology. 1997;36(6):908-13.
14. Stewart W, Lauret P, Pietrini P, Thomine E. Lichen striatus: critères histologiques (à propos de cinq cas). Ann Dermatol Venereol. 1977;104:132-5.
15. Gianotti R, Restano L, Grimalt R, Berti E, Alessi E, Caputo R. Lichen striatus–a chameleon: An histopathological and immunohistological study of forty-one cases. Journal of cutaneous pathology. 1995;22(1):18-22.
16. Patrone P, Patrizi A, Bonci A, Passarini B. [Lichen striatus: a clinical and histological study of 8 cases]. Giornale italiano di dermatologia e venereologia: organo ufficiale, Societa italiana di dermatologia e sifilografia. 1990;125(6):267-70.
17. Miquel C, Brousse N, De Prost Y, Fraitag S, editors. [Lichen striatus: evaluation of histologic criteria in 13 cases]. Annales de pathologie; 2000.
18. Hauber K, Rose C, Bröcker E-B, Hamm H. Lichen striatus: clinical features and follow-up in 12 patients. European Journal of Dermatology. 2000;10(7):536-9.
19. Hurwitz S. Clinical Pediatric Dermatology: A Textbook of Skin Disorders of Childhood and Adolescence. Journal of Toxicology-Cutaneous and Ocular Toxicology. 1994;13(3):265-6.
20. Patri P. Lichen striatus bilaterale. G Ital Dermatol Venereol. 1983;118:101-3.
21. Bolognia JL, Orlow SJ, Glick SA. Lines of blaschko. Journal of the American Academy of Dermatology. 1994;31(2):157-90.
22. Patrizi A, Neri I, Fiorentini C, Bonci A, Ricci G. Lichen striatus: clinical and laboratory features of 115 children. Pediatric dermatology. 2004;21(3):197-204.
23. Kennedy D, Rogers M. Lichen striatus. Pediatric dermatology. 1996;13(2):95-9.
24. Sittart J, Pegas J, Sant'Ana L, Pires M. [Lichen striatus. Epidemiologic study]. Medicina cutanea ibero-latino-americana. 1988;17(1):19-21.
25. Smith SB, Smith JB, Ellis LE, Hogan DJ. Lichen striatus: simultaneous occurrence in two nonrelated siblings. Pediatric dermatology. 1997;14(1):43-5.
26. Toda Ki, Okamoto H, Horio T. Lichen striatus. International journal of dermatology. 1986;25(9):584-5.
27. FRIEDEN IJ. JOHN T. KANEGAYE, MD. Pediatrics. 1948;90(1):106.
28. Kabbash C, Laude TA, Weinberg JM, Silverberg NB. Lichen planus in the lines of Blaschko. Pediatric dermatology. 2002;19(6):541-5.
29. Lee MW, Choi JH, Sung KJ, Moon KC, Koh JK. Linear eruptions of the nose in childhood: a form of lichen striatus? British Journal of Dermatology. 2000;142(6):1208-12.
30. Atherton D, Kahana M, RUSSELL-JONES R. Naevoid psoriasis. British Journal of Dermatology. 1989;120(6):837-41.
31. Prigent F, Cavelier-Balloy B, Lemarchand-Venencie F, Civatte J, editors. Lichen nitidus linéaire. Annales de dermatologie et de vénéréologie; 1989: Masson.

32. Müller C, Schmaltz R, Vogt T, Pföhler C. Lichen striatus and blaschkitis: reappraisal of the concept of blaschkolinear dermatoses. British Journal of Dermatology. 2011;164(2):257-62.
33. Hurwitz S. Cutaneous disorders of the newborn. Clinical pediatric dermatology. 1993:25-8.
34. Iorizzo LJ, Jorizzo JL. The treatment and prognosis of dermatomyositis: an updated review. Journal of the American Academy of Dermatology. 2008;59(1):99-112.
35. Odom RB, James WD, Berger TG. Andrews' diseases of the skin: clinical dermatology: WB Saunders Company; 2000.
36. Schachner LA, Hansen RC. Pediatric dermatology: Elsevier Health Sciences; 2011.
37. Taniguchi Abagge K, Parolin Marinoni L, Giraldi S, Carvalho VO, De Oliveira Santini C, Favre H. Lichen striatus: description of 89 cases in children. Pediatric dermatology. 2004;21(4):440-3.
38. Jo J-H, Jang H-S, Park H-J, Kim M-B, Oh C-K, Kwon K-S. Early treatment of multiple and spreading lichen striatus with topical tacrolimus. Journal of the American Academy of Dermatology. 2007;57(5):904-5.
39. Karakaş M, Durdu M, Uzun S, Karakaş P, Tuncer İ, Çevlik F. Lichen striatus following HBV vaccination. The Journal of dermatology. 2005;32(6):506-8.
40. Aloi F, Solaroli C, Pippione M. Diffuse and bilateral lichen striatus. Pediatric dermatology. 1997;14(1):36-8.
41. Fujimoto N, Tajima S, Ishibashi A. Facial lichen striatus: successful treatment with tacrolimus ointment. British Journal of Dermatology. 2003;148(3):587-90.