Clinical and Histopathological Study of 50 Cases of Lichen Planus

Bangaru H.[1], Karibasappa NA[2]

[1]Assistant Professor, Mysore Medical College and Research Institute, Mysore, [2]Professor (Rtd.), JJMMC, Davangere

Email: drbangaruskin@gmail.com

Abstract

Background: Lichen Planus (LP) is a unique, common inflammatory disorder that affects the skin, mucous membrane, nail and hair. Though lichen planus has distinct colour, morphology and distribution it can present with variability.

Objective: To know the incidence, various clinical manifestations, and correlation with histopathological findings.

Methods: A total of 50 Lichen planus patients attending outpatient department of Dermatology at Chigateri and Bapuji hospital, Davangere, Karnataka were included. Detailed history, thorough physical examination and relevant investigations were done.

The study design employed was a cross sectional study and the sample size was calculated with α=5% and absolute error of 3% for incidence 0.8%, the sample size was calculated to be 36.

Statistical Method: Frequency, proportion, Chi-Square test for association, contingency co-efficient and related statistical techniques with graphs using R software.

Inclusion Criteria: Clinically diagnosed Lichen Planus case.

Exclusion Criteria: Patients not willing for biopsy.

Result: Out of all Dermatology out patients LP constituted 0.57%. Majority (52%) of patients belongs to the age group of 21-40 years, with a male to female ratio of 1.5:1. Majority (68%) of patients presented within 3 months of duration, 90% of patients had pruritus. Papular LP was the commonest type, only skin was involved in 80%, skin and mucous membrane was involved in 18%. The commonest site involved was extremities in 72% followed by trunk in 38%. Reticular type was the commonest among oral lesions. Koebner phenomenon observed in 64% and nail involvement was seen in 20% of patients.

In our study hyperkeratosis(86%), hypergranulosis(86%), acanthosis(78%), saw toothing of rete ridges(59%) and liquefaction degeneration of basal cells(73%) were consistent features, civatte bodies were seen in 10% of cases, band like infiltrate (89%) and melanin incontinence(77.7%) were seen in dermis.

Conclusion: This study emphasizes the need for detailed history, clinical examination and as LP presents with various clinical morphological types, the histopathological features are very useful in differentiating its variants.

Keywords: Lichen planus, Pruritus, Pterygium

Introduction

Lichen planus is characterized by shiny, violaceous, flat topped, polygonal papules vary in size from pinpoint to a centimetre or more, may be closely aggregated or widely dispersed. Usually insidious in onset eventually flatten after few months, often replaced by an area of pigmentation persists for months or years, most often seen on the volar aspect of the wrist.[1]

The exact etiology of Lichen Planus is not known, various possible mechanisms are proposed like, autoimmune, genetic, infections (HCV), psychomotor and allergic.[2] The dermal T-Lymphocytes have been postulated to initiate or stimulate the pathogenic mechanism.[3] Though, a classic cutaneous lesion presents with typical "five Ps" that is, purple, planar, polygonal, pruritic and papular lesion[2] Lichen Planus can present with various morphological patterns as shown in Table 1. Lichen Planus also affects mucous membranes like oral, vaginal and esophagus. Oral Lichen Planus manifest with many variants like Reticular, papular, plaque-like, erosive, atrophic and bullous oral Lichen Planus.[4]

Nail involvement is seen in 10-15% of cases[5] with hallmark finding of pterygium. Lichen planus can also affect hair in the form of keratotic follicular papules with or without scarring alopecia.[6]

Rarely malignant transmission can occur in 0.3-3%.[4]

Histopathologically, classical papule of Lichen planus shows- compact orthokeratosis, wedge shaped hypergranulosis, irregular acanthosis, vacuolar alteration of basal layer and a band like dermal lymphocytic infiltration and pigmentary incontinence.[7] Civatte bodies are seen in lower epidermis. These features vary in variants of Lichen planus.

Management of Lichen planus is challenging, it is essentially benign and usually self-limited, although recurrences and exacerbations do occur for many years.[3] Topical, systemic and intra lesional steroids are useful in inducing remission.[3,8,9] Course and prognosis is unpredictable, typically persists for 1-2 years, generalised eruptions heal faster than limited disease, whereas hypertrophic Lichen planus follows a protracted, unremitting course.[6,3] Relapse occur in 15-20% of cases, more common in generalized LP.[6] Malignant transformation may occur, usually Squamous cell carcinoma develops in less than 1% of oral mucosal lesion.[6]

Table 1: Showing Age distribution

Age in years	No. of Patients	Percentage
Below 10	01	2%
11-20	07	14%
21-30	15	30%
31-40	11	22%
41-50	08	16%
Above 50	08	16%
Total	50	100%

Table 2: Showing sex distribution

Sex	No. of patients	percentage
Male	30	60%
Female	20	40%
Total	50	100%

Table 3: Showing various clinical types

Clinical types of LP	No. of patients	Percentage
Papular	18	36%
Guttate	02	4%
Hypertrophic	08	16%
Linear	04	08%
Actinic	04	08%
Annular	03	06%
Follicular	04	08%
Pigmented	03	06%
Zosteriform	01	02%
Oral	01	02%
Palms	03	06%
Bullous	02	04%
Total	50	100%

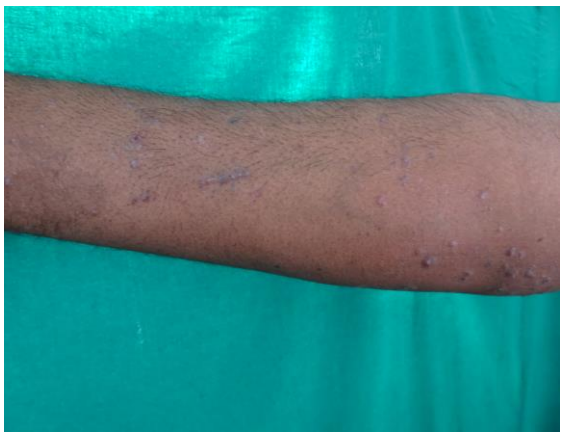

Fig. 1: Classical LP

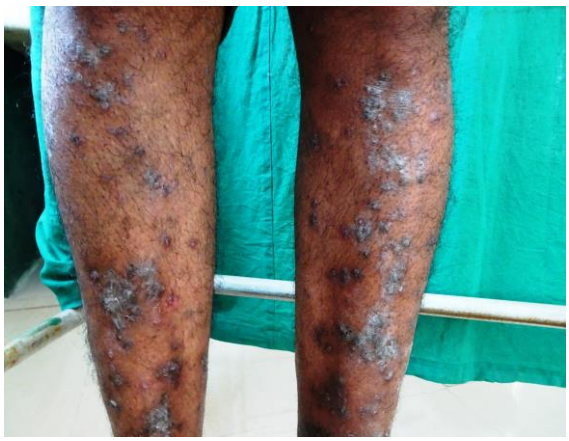

Fig. 2: Hypertrophic LP

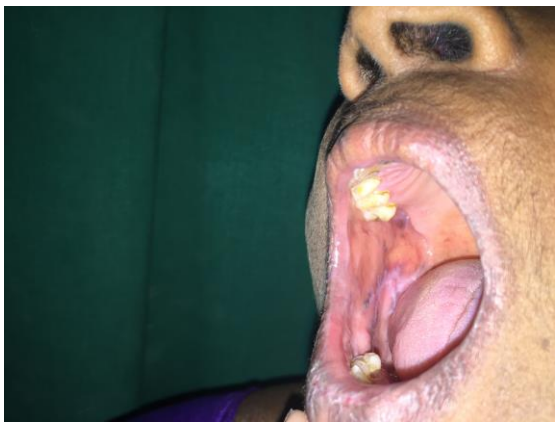

Fig. 3: Oral LP

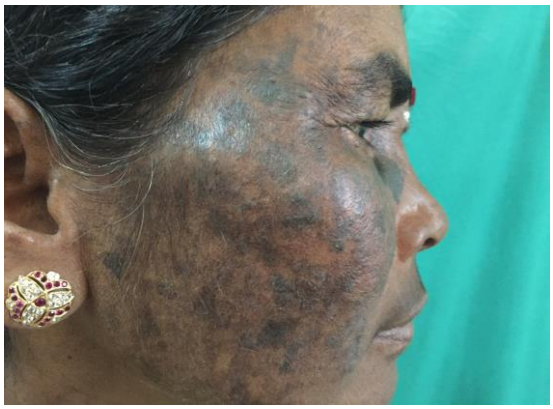

Fig. 4: Pigmented LP

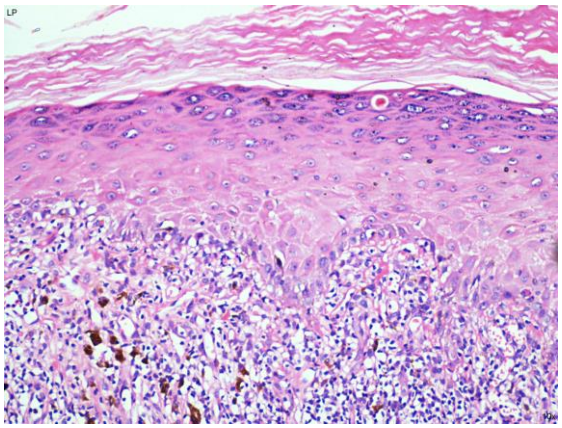

Fig. 5: HPE of Classical LP

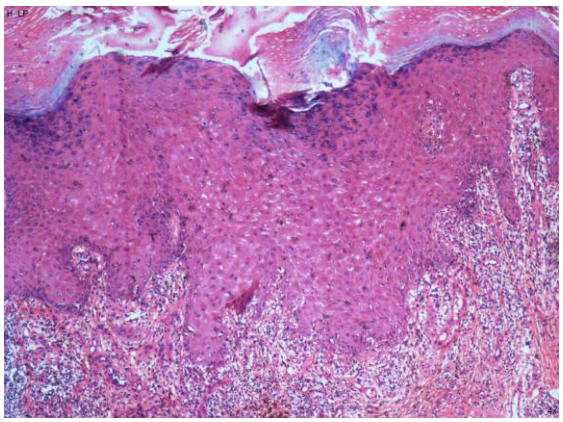

Fig. 6: HPE of Hypertrophic LP

Discussion

In our study, the incidence was 0.57%, in agreement with other study.[10] However higher incidence were reported from Indian studies.[11] The commonest age group affected in our study was 21-30 years, in agreement with other study.[12] Male predominance was observed in our study in accordance with other study[10,12] several studies have reported female predominance also.[3] Classical (papular) LP was the commonest followed by hypertrophic type as observed in other studies.[12,13] Linear LP was seen in 8% of cases in our study in agreement with other study.[14] However very low rate of linear LP was reported in a study.[15] Actinic LP was seen in 8% in our study, in accordance with other study.[10] The incidence of actinic LP varies from 7.48-14.1% it depends upon the climatic factors and occupation.[10,12,16] We have recorded higher incidence of follicular LP (8%) compared to other studies.[10,12] Our study showed that only skin was involved in 80% and both skin and mucous membrane in 18% of cases in accordance with other studies.[11,12,17] However only mucous membrane involvement is low compared with other studies.[11,12,17] Reticulate type was the commonest among oral LP as observed in other study.[18]

In our study hyperkeratosis (86%), hypergranulosis (86%), acanthosis (78%), saw toothing of rete ridges (59%) and liquefaction degeneration of basal cells (73%) were consistent features, saw toothed rete ridges seen in 59%, civatte bodies were seen in 10% of cases, band like infiltrate (89) and melanin incontinence (77.7%) were seen, our findings are in accordance with other studies.[8,17]

In classic Lp, all the cases showed hyperkeratosis and hypergranulosis, whereas irregular acanthosis and basal cell degeneration and band like infiltrate was seen in 89%. Among variants of LP cases, hypertrophic LP showed hyperkeratosis in all the cases. Follicular LP along with regular features follicular plugging was seen. In pigmented LP hyperkeratosis, hypergranulosis and basal degeneration was seen in only 33.3% of cases, whereas acanthosis and pigmentary incontinence was seen in all the cases.

Our study emphasizes the need for detailed history, clinical examination and as LP presents with various clinical morphological types we should aware of different clinical presentation. The histopathological study is very useful in diagnosis and helps in differentiating its variants. All the typical histopathological features of LP described in literature are seen in papular LP, whereas variants of LP shows some of the typical findings and few predominant changes suggestive of specific type.

References

1. Breathnach SM. Lichen Planus and Lichenoid Disorders. In: Burns T, Breathnach S, Cox N Griffiths C. Editors. Rook textbook of dermatology, Eighth edn., Blackwell 2010. Pp 41.1-41.28.
2. Camina C. Lichen planus and related conditions. Adv dermatol 1987;2:47-70.
3. Boyd AS, Nelder KH. Lichen planus. J Am Dermatol 1991;25:593-619.
4. Mallaoglu N. Oral LP: a review. British Journal of oral and maxillofacial surgery. 2000;38:370-377.
5. Tosti A, Peluso AM, Fanti PA, and Piraccini BM. Nail Lichen planus: clinical and pathological study of 24 patients. J Am Acad Dermatol 1993;28:724.
6. Daoud MS, Pittelkow MR. Lichen planus, In: Freedberg IM, Eisen AZ, Wolff K, Austen KF, Goldsmith LA, Katz SI. Editors. Fitzpatrik's Dermatology in general medicine, 6th edn., New York: Mc Grawhill, 2003;pp:463-477.
7. Mobini N, Toussaint S, Kamino H. Non-infectious erythematous, papular and squmous disease. In: Elder DE, Elenitsar R, Johnson BL, Murphy GE. Editors. Lever's Histopathology of skin. 9th edition., Lippincott Williams and Wilkins. Phildelphia 2005, pp 179-214.
8. Brethnach SM and Black MM. Lichen planus and Lichenoid disorders. In: Burns T, Breathnach S, Cox N, Griffiths C, editors. Rooks text book of dermatology, 7th edn., Blackwell Science, 2004.pp 42.1-42.32.
9. Scott MJ, Scott MS. Ungula LP. Arch Dermatol 1979;115:1197-9.
10. Sing OP, Kanwar AJ. Lichen Planus in India. An appraisal of 441 cases. Int J Dermatol 1976;15:752-6.
11. Sehgal VN, Rege VL. Lichen Planus: an appraisal of 147 cases. Ind J Dermatol Venereol 1974;40:104.
12. Kacchawa D, Kacchawa V, Kalla G, Guptha LP. A clinic-aetiological profile of 375 cases of Lichen Planus. Ind J Dermatol 1995;61:276-9.

13. Abdel–Hamid, Abdel-Aziz M. Lichen Planus: Histopathological study of 57 cases. Ind J Dermatol Venereol 1970;36:85-91.
14. Hatano H, Nagashima M, Miyake. Statistical studies of Lichen Planus. Jpn J Clin Dermatol 1996;23:511-16.
15. Altman J, Perry HO. The variations and course of Lichen planus. Arch Dermatol 1961;84:179-191.
16. Salman SM, Kibbi AG, Zaynouns. Actinic Lichen Planus: a clinicopathological study of 16 patients. J Am Acad Dermatol 1989;20:226-31.
17. Scully C and E L-Kom M. Lichen Planus: Review and update on pathogenesis. Journal of Oral Pathology 1985;14:431-458.
18. Anderson JO. Oral Lichen Planus- a clinical evaluation of 115 cases. Oral Surg, Oral Med and Oral Pathol. 1968;25:31-42.