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Original Article

A Clinico-pathological study of lichen planus in a tertiary care hospital in North Karnataka

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Abstract

Objective To document the incidence, various clinical manifestations and its correlation with histopathological findings.

Methods A total of 100 lichen planus patients attending outpatients, in the department of dermatology at Karnataka Institute of Medical Sciences Hubballi were included. Detailed history, thorough physical examination, relevant investigations were done.

Results Out of all dermatological outpatient, LP constituted 0.47% of the cases.42% belonged to the age group of 26-40 years, with a female to male ratio of 1.08:1. The disease was more common among housewives (47%), in middle (57%) and low (43%) socioeconomic status people. Majority (60%) of the patients presented within 6 months of duration. 96% of the patients had pruritus. Papular LP was commonest type. Only skin was involved in 86%, skin and mucous membrane were involved in 14%. The commonest site was lower limbs (92%) followed by the upper limbs (82%), trunk (42%). Among oral lesions, reticular type was the commonest over buccal mucosa. Koebner phenomenon was observed in 55% of the patients and nail involvement was seen in 6% of the cases. Histopathological changes of cutaneous LP showed hyperkeratosis (88%), hypergranulosis (87%), lymphocytic infiltration in a band like pattern (87%) in majority of the specimens.

Conclusion This study emphasizes the need for detailed history, clinical examination, investigations including biopsy in a case of LP as it can present with various clinical morphology and sites of involvement.

Key words
Lichen planus, histopathology.

Introduction

Lichen planus (LP), (Greek leichen, "tree moss"; Latin planus, "flat") is a unique, common inflammatory disorder that affects the skin, mucous membranes, nails, and hair.[1] The exact pathogenesis of the disease is not known, but both T-cell mediation and antibodies have been implicated. It affects all races, is worldwide in distribution and is concentrated in the age group between 30-70 years.[2]

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The primary lesion of lichen planus is a violaceous, flat topped, polygonal, pruritic, papule, and represents commonest among all the morphologies of lichen planus in all age groups.[3]

The incidence varies between 0.22% and 1% of the adult population worldwide. LP represented about 1.2% of all new dermatology patients in London and Turin, 0.9% in Copenhagen and 0.38% in India.[4]

We conducted this study to document and analyze the clinicopathological profile of lichen

planus.

Methods

The study was conducted in department of dermatology in collaboration with department of pathology, KIMS, Hubballi. A total of 100 clinically diagnosed lichen planus cases were included for the study. Clinical features like age, sex, duration of the disease, severity of itching, area of distribution of lesions, Koebner's phenomenon were recorded in the proforma. Biopsies from skin lesions of all these patients were taken and sent to pathology for histopathological examination. Reports were obtained for all these biopsies for comparison with clinical picture.

Chi-square test was used to assess associations between various variables. All analysis was performed using SPSS software.

Results

Figure 1 shows the distribution of study population according to age and gender. Majority of all these patients were in the age group of 26-40 years. The duration of the disease varied. Some patients sought clinical assistance as early as few days after its onset, while others, had the disease for several years **(Figure 2).**

Out of 100 cases of LP studied, 77 (77%) were of classical type **(Figure 3)**, 12 (12%), were of lichen planus pigmentosus (LPP) **[Figure 4]** and 9 (9%) were of lichen planopilaris **(Figure 5)**, 1 (1%) case was of nonspecific dermatitis and 1 (1%) case was of psoriasis. All the cases (100) were divided into different subgroups based on clinical variants, as well as, on the basis of anatomic distribution as involving scalp, face, neck, upper limb, lower limb and others (nail and mucosal involvement) lesions of classical lichen planus were mostly present on upper and lower extremities, while 2 of LPP had facial involvement and 2 of lichen planopilaris had scalp involvement along with extremities and trunk involvement.

Koebner phenomenon was seen in 55% of the cases.

Cutaneous lesions were associated with mucosal lesions in 14% of cases and nail lesions were seen in 6% of our patients. Out of 77 cases of classic LP all patients (100%) had hyperkeratosis (**Figure 6**) and hypergranulosis in 74 (96%) whereas acanthosis was seen in 71 (92%) cases, elongated rete ridges in 52 (67%) cases, basal cell degeneration in all the cases (90%), band-like inflammatory infiltrate (**Figure 7**) in 73 (95%) cases, melanin incontinence seen in 76 (98.7%), Civatte bodies seen in 72 (93%) and Max-Joseph spaces in 23 (29.8%) cases.

Out of 12 LPP cases, all patients had epidermal thinning and melanin incontinence (100%), basal cell degeneration in 10 (83%) and hypergranulosis in 4 (33%) cases.

Out of 9 cases of lichen planopilaris, hyperkeratosis, hypergranulosis, basal cell degeneration and perifollicular infiltration (**Figure 8**) were seen in all (100%) cases, Civatte bodies in 5 (55%) cases and follicular plugging seen in 4 (44%) cases. One case of nonspecific dermatitis was seen. One case was diagnosed as psoriasis.

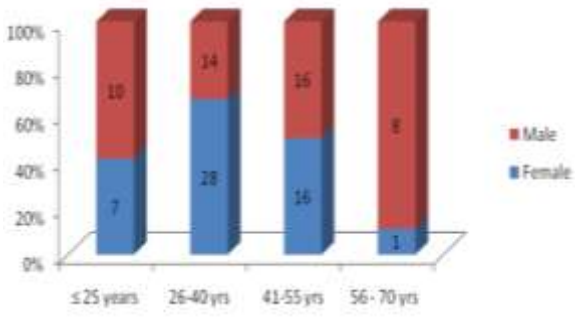

Figure 1 Distribution of study subjects according to age group and gender.

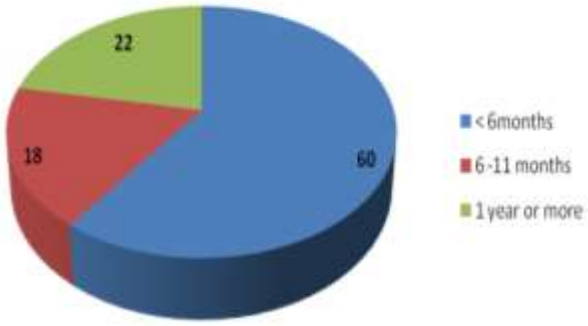

Figure 2 Duration of symptoms.

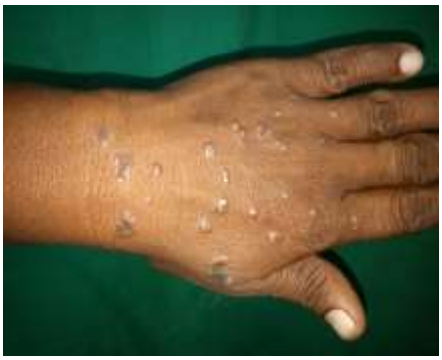

Figure 3 Clinical picture of lichen planus showing violaceous papules.

Figure 4 Clinical picture of lichen planus pigmentosus showing pigmented lesions.

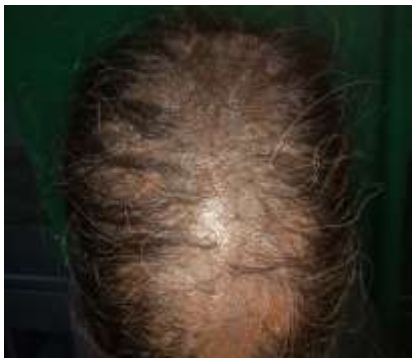

Figure 5 Clinical picture of lichen planopilaris showing scarring alopecia.

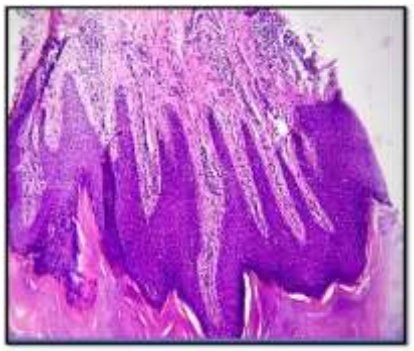

Figure 6 Photomicrograph showing hyperkeratosis, hypergranulosis, acanthosis, elongated rete ridges, and basal cell degeneration.

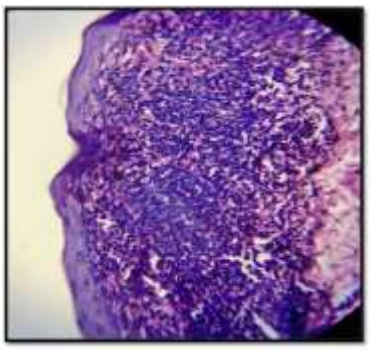

Figure 7 Photomicrograph of lichen planus showing band-like infiltrate.

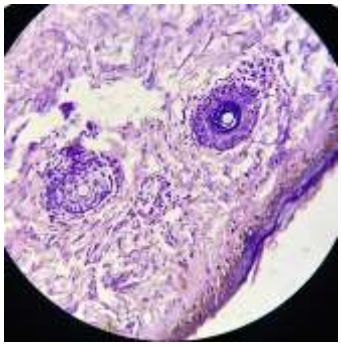

Figure 8 Photomicrograph of lichen planopilaris showing perifollicular inflammation.

Discussion

The present study describes the details of clinical and pathological characteristics of patients with LP. In our study, we observed that classical LP was the most common, constituting 77% of total cases followed by LPP (12%) and lichen planopilaris (9%). A similar finding with dominance of classical lichen planus over other types has been reported in the literature by various authors.[3] In our study, maximum number of patients belonged to the age group of 26 to 40 years, followed by 41 to 55 years. This correlates with another study that described data

of Indian population.[2] In our study we found that female gender was more commonly affected with LP than males. In a study by Boyd and Nelder[5] observed female preponderance and our finding was similar to this study. In our study, we found that upper and lower limbs (84%) were the most common sites to be affected in classical LP. A similar observation has been reported in study by Boyd and Nelder.[5] No cause could be attributed to this finding but increased exposure of these parts to sunlight might have been contributed to the causation. Mucous membrane involvement with skin lesions was observed in 14% of patients in our study and was consistent with study done by Kachchwa *et al*.[6] Nail lesions were seen in 6% of our patients which was similar to the findings observed in Kachchwa *et al*.[6] In our study, itching was present in 96% of the cases which was similar to the observation made by Sehgal and Rege.[2] The most frequently observed histopathologic findings in our study were hyperkeratosis and hypergranulosis (87%), acanthosis (78%) basal cell degeneration (96%), Civatte bodies (72%) and Max-Joseph spaces (23%). The result of our study correlate with that of study done by Asmitha *et al*.[7]

LPP is a common variant of LP seen in the Indian population with distinct clinical and histological findings as observed in the current study. Majority of our patients (83%) had pigmented lesions. Pigmentation was mostly diffuse and reticular in pattern.[4] In our study the histopathological findings observed commonly in LPP were epidermal thinning and melanin incontinence (100%), basal cell degeneration (83%) this was similar to the previous study done.[7]

Lichen planopilaris is an uncommon variant of lichen planus associated with hair loss. Majority of our patients were females as reported in many studies.[5] The most common site involved was scalp seen in 75% cases. As reported alopecia was observed in half of our patients.[7]

In our study the histopathological changes most frequently observed were hyperkeratosis, hypergranulosis and basal cell degeneration, perifollicular infiltration (100%). Less frequently observed findings were Civatte bodies and follicular plugging. Similar findings have been reported in previous studies.[8]

Conclusion

Lichen planus is a disease seen mainly in the age group 30 to 70 years. The disease is relatively more common in females than males. Classical lichen planus has a strong predilection to upper and lower extremities as common site of occurrence.

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