

ORIGINAL ARTICLE

Clinical and Histopathological Study of Lichen Planus

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Abstract

Aim: To study the various clinical manifestations of Lichen Planus and correlate histopathologically. **Materials & Methods:** The Co-relational study conducted in 100 patients diagnosed with LICHEN PLANUS with involvement of skin, mucous membrane or both. Skin examination was done in detail with special reference to the predilected sites and morphology of lesions to type of the lesion clinically. **Results:** 40% of patients show moderate itching. 38% showing papular type of lichen planus in which 80% patients show cutaneous involvement. Lower limb is involved in 74 % patients followed by upper limb in 72% patients. Hyperkeratosis is the most common histopathological change seen in epidermis and lymphocytic infiltration in dermis in 98% patients. **Conclusion:** Papular, guttate and hypertrophic types were the commonest types seen in many cases of actinic L.P.

Keywords: Lichen planus, Histopathology, Hyperkeratosis

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Introduction

Lichen planus (LP) is a distinct cutaneous disease which consists of an eruption of papules which are peculiar in colour, configuration, location and pattern of appearance and in microscopic with gross structure ⁽¹⁾. The pathogenesis and etiology of LP remains unclear. An autoimmune reaction in which CD8+ T lymphocytes attack basal keratinocytes leading to apoptosis of the cells has been favoured ⁽²⁾.

Lichen planus is generally a self-limiting condition that usually affects in the middle age. The structures that can be involved include the skin, mucous membranes, hair and nails. The most common clinical picture is that of volaceous polygonal papules with a characteristic distribution on the trunk and on the flexor aspect of the forearm. The cutaneous hypertrophic plaques or the atrophic lesions of Lichen Planus are less commonly seen³. LP is a self-limited dermatosis. All forms of LP, except for few exceptions are treated with the same measures.

Topical and systemic treatment options are available and are preferred depending on the severity of the findings. Topical therapy primarily consists of the use of corticosteroids of class III and IV. Other therapeutic options include topical calcineurin inhibitors, phototherapy with UVA, UVA1 or UVB, retinoids, various forms PUVA. Systemic therapy is indicated in patients resistive to topical therapy as well as in exanthematous and ulcerative forms of LP. Systemic therapy includes use of corticosteroids and acitretin, alone or in combination, as well as cyclosporine, dapsone and azathioprine are proven treatment methods. Present study was conducted to find out the various clinical manifestations of Lichen Planus and to correlate it with histopathologically.

Materials & Methods

The Co-relational study conducted in the skin OPD of Dr. DY Patil Medical College, Hospital and Research Centre, Pimpri, Pune, from July 2014 to September 2016. 100 patients diagnosed with Lichen Planus (LP) with involvement of

skin, mucous membrane or both irrespective of their age, sex, education, occupation, socio economic status, duration of illness and associated diseases are included in study and detailed history was obtained which included the following: Occupational history, duration of illness, onset of disease (whether sudden or insidious), progression of the disease, aggravating and reliving factors, association with itching or burning sensation in the oral cavity, aggravation of itching on exposure to sunlight, emotional factors if any, habits like chewing, betel nut chewing and alcoholism, ingestion of any drugs, development of new lesions at the site of trauma, associated infections or any systemic illness and any similar illness in the past along with detailed general examination was carried out in all these patients with special importance to oral cavity, genitalia, nails and hair. Skin examination was done in detail with special reference to the predilected sites and morphology of lesions to type of the lesion clinically. All these patients were examined for any systemic disease association. Biopsy was done in all cases. Written consent from the patients was taken before doing biopsy.

Results

As far as symptoms are concerned, moderate itching was seen in 40% cases, followed by severe itching in 30% patients and skin lesions were asymptomatic in 10% of the patients. 30% patients were housewives and 34% were labourers. Students, agriculturists and others constituted 36%. The commonest sites of involvement were the upper and the lower limbs, 72% and 74% respectively followed by the trunk in 54%

Table- 1: Clinical Types

Types	Cases	%
Papular	38	38 %
Guttate	14	14 %
Hypertrophic	16	16 %
Linear	8	8 %
Actinic	6	6 %
Annular	6	6 %
Follicular	4	4 %
Pigmented	2	2 %
Atrophic	2	2 %
Zosteriform	2	2 %
Oral	2	2 %

The commonest clinical type was papular variety (38%) followed by hypertrophic (16%) and guttate (14%) table-1. Only cutaneous involvement was seen in 80%, both skin and mucous membrane involvement in 18% whereas 2% presented with only oral lesion without any skin lesions.

Reticulate type of lesions was seen over buccal mucous membrane in 12 patients, on the lips in 10 patients and over the tongue in 4 patients. Erosive lesions were seen over the lips in 4 patients and buccal mucosa membrane in 4 patients. Papular lesions over the lips were seen in 4 patients and in the buccal mucous membrane in 2 patients. Nail changes were seen in finger nails in 30 patients and toe nails in 6 patients, longitudinal ridging was the commonest change in 12 patients (Table-2).

Table- 2: Nail Changes

Type	Finger	Toe
Longitudinal ridging	12	-
Thinning	6	4
Thinning & longitudinal ridging	4	2
Pitting	4	-
Thinning, Pitting and Longitudinal ridging	2	-
Thinning, Longitudinal ridging and Oncholysis	2	-

Table-3: Cutaneous L.P (Epidermis)

H/P findings	Cases	%
Hyperkeratosis	98	98 %
Atrophy	4	4 %
Hypergranulosis	4	4 %
Parakeraosis	86	86 %
Acanthosis	88	88 %
Hyperplasia	8	8 %
Saw toothing of rete ridges	56	56 %
Liquefaction degeneration of basal cell	68	68 %
Max Joseph scale	4	4 %
Colloid bodies	4	4 %

The epidermis showed hyperkeratosis in all the 98 cases, hypergranulosis and acanthosis were seen in 86 specimens. Liquefaction degeneration of basal cells was seen in 68 patients. In addition, exocytosis of lymphocytes was seen in 2 cases, vacuolization in 2 cases and focal spongiosis in 4 cases. Lymphocytic infiltration was seen in all the patients sharing band like distribution in 8 patients. The infiltrate also

consisted of histiocytes in 34 specimens, melanin incontinence was observed in 32 patients and perivascular lymphocytic infiltrate in 4 patients (Tables 3&4).

Table-4: Histopathology of cutaneous L.P (Dermis)

H/P findings	Cases	%
Band like infiltration	92	92 %
Lymphocytes	98	98 %
Histiocytes	34	34 %
Plasma cells	2	2 %
Melanophages	38	38 %
Polymorphs	-	-
Giant cells	-	-
Melanin incontinence	32	32 %
Perifollicular infiltrate	6	6 %
Perivascular lymphatic infiltrate	4	4 %
Dysplasia of papillary dermis	4	4 %

Discussion

Clinical Types

In this study, papular variety of Lichen Planus was the commonest type seen in 38% patients, Abdel-Hamid, Abdel-Aziz⁽⁴⁾ found papular variety in 33.33% of cases. Gautam Sharma found classical L.P. in 64.32% of cases, whereas Sehgal and Rege found this variety in 75.2% cases. Bornstein et al and Fernández-González et al⁽⁵⁾⁽⁶⁾ found that the most common clinical form is reticular/papular (78%) of cases. Asmita Parihar et al found that the most common type was the papular in 61% cases.⁽⁶⁾

Skin and Mucous Membrane

Present study, only skin was involved in 80% patients, both skin and mucus membrane (MM) in 18% and only mucous membrane in 2% of patients. Sehgal and Rege⁽⁷⁾ found involvement of only skin in 70.66%, Kachhawa et al⁽⁸⁾ found involvement of only skin in 70.66%, Shuttleworth, Graham-Brown⁽⁹⁾ found only cutaneous lesions in 72% of patients, both oral and cutaneous lesions in 22% and only oral lesions in 6% of the cases. Thus the involvement of skin and mucous membrane either individually or together is highly variable. The observations regarding the involvement of skin and mucous membrane together is very near to observations made by majority of the workers, whereas the involvement of only mucous membrane is very low in the present study. It

could be due to the lower incidence of habits among the patients studied.

Distribution of lesions

This study shows the cutaneous lesions were found over the lower limbs in 76% patients, over the upper limbs in 72% lesions, trunk in 54% patients, face and neck in 20% patients, palms and soles in 10% patients and scalp in 2% patients. 14% had generalized lesions. Boyd and Neldner⁽¹⁰⁾ opined that flexural areas are preferentially involved; wrists being the commonest site and face and scalp usually is spared. Tompkins⁽¹¹⁾ et al found involvement of the extremities in 89% of the patients.

Types of mucous membrane lesions

In this study involvement of the oral mucous membrane was seen in 40 patients. In some patients multiple sites were involved. Involvement of the lips was seen in 18 patients, buccal mucosa in 18 patients and tongue in 4 patients. Reticulate type of lesion were the commonest type of lesions seen over buccal mucosa in 12 patients, lips in 10 patients and tongue in 4 patients. Erosive lesions were seen over the lips and buccal mucosa in 4 patients each whereas papular lesions were seen in 4 patients on the lips and in 2 patients over buccal mucosa.

Sehgal and Rege⁽⁷⁾ in the study of 147 cases of LP found MM lesions in 48 patients out of which 30 (62.5%) had both skin and MM lesions and 18 had only MM lesions and 77.1% of the patients who had oral lesions had habits like eating pan, betel nut, spicy food, alcohol etc.. the location of the lesions was over the cheeks in 89.6%, lips in 12.5%, tongue in 6.2%, palate in 4.2% and genitalia in 2.1% of the patients. Greyish white dots, lines or patches were seen in 89.6% of the patients and erosions or ulcerations in 22.9%.

Nail changes

In our study nail involvement was seen in 36 patients with many patients having more than one type of changes. Longitudinal ridging was common change seen as a long change in 12 patients. Fine Arnt observed nail changes in 6-10% of the patients which included longitudinal ridging, roughening, thinning, pitting, brownish discoloration, spooning, pterygium, subungual hyperkeratosis and loss of nails as the changes occurring in the order of frequency⁽¹²⁾. Scott and Scott⁽¹³⁾ reported longitudinal ridging, grooving,

splitting, striations, anonychia, subungual hyperkeratosis and thinning. Thus in the present study the incidence of nail changes is comparatively high. This could be attributed to the fact that there were very few children in the study group and more number of patients were labourers and housewives who are prone for trauma which is one of the precipitating factor or the nail changes in some patients may be coincidental.

Histopathology of cutaneous LP

Among histopathological findings in cutaneous L.P, hyperkeratosis was seen in 98% patients and hypergranulosis in 86% and acanthosis 88% of patients. Liquefaction degeneration of basal cells seen in 68% patients and saw toothing of rete ridges were seen in 56% of Patients. Other findings in the dermis depended on type of lichen planus. In the dermis lymphocytic infiltration were seen in all patients and was band like in most of the specimens and other dermal changes depended on the clinical variety like Histiocytes in 47.36% patients, melanin incontinence in 26.31%, melanophages in 15.7%, perifollicular infiltrate in 10.5%, plasma cells, exocytosis of lymphocytes and dysplasia in 2 patient each (5.2%).. Among the histopathological specimens from MM basal cell degeneration was seen in all the patients, parakeratosis and saw tooth elongation of rete ridges in many. Supportive studies like Abdel-Hamid and Abdel-Aziz⁽⁴⁾, Boyd⁽¹⁰⁾, Toussiant and Kamino⁽¹⁴⁾, Dilaimy⁽¹⁵⁾, Friedman⁽¹⁶⁾ shows similar results.

Conclusion

Papular, guttate and hypertrophic types were the commonest types seen in many cases of actinic L.P. Lower limbs were the commonest sites of involvement. Mucous membrane involvement was seen mostly in buccal mucosa and the lips involved more often and reticulate type of lesions were the commonest type of lesions. Among histopathological findings in cutaneous L.P, hyperkeratosis was seen in all the patients and hypergranulosis and acanthosis in most of the patients. Liquefaction degeneration of basal cells and saw toothing of rete ridges were seen in considerable number of specimens.

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