Original Research Article

A clinico-histopathological study of lichen planus

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Received: 14-10-2020 / Revised: 12-11-2020 / Accepted: 16-12-2020

Abstract

Introduction: Lichen planus (LP) is a common papulosquamous inflammatory condition that affects the skin, hair, nails, and mucous membranes and is associated with a course of relapsing and remitting.**Aims:** To study the clinical profile and histopathological association of lichen planus.**Materials and methods:** The cross-sectional study consisted of 54 patients who visited outpatient clinic at our Katakam Skin Clinic, Kothawada, Warangal, Telangana. A brief history and comprehensive clinical review were conducted on the patients, which was documented. Both male and female patients aged between18-65 years clinically diagnosed of Lichen Planus are included in study. In all cases, skin biopsies from representative areas were taken and subjected to a thorough histopathological examination. **Results:**33 of the total 54 cases were males and 21 were females, respectively. Males with a male: female ratio of 3:2 are more popular. Most of the individuals in the sample was 35-44 years old with 16 cases 30% followed by 25-34 years with 11 cases 20%. Of the 54 cases, 38 (70.4%) were classical lichen planus cases, 11 (20.3%) were Lichen planus hypertrophicus cases, 3 (5.5%) were Lichen planus actinicus cases, 1 (1.8%) each was Lichen planopilaris and Oral lichen planus cases. Hyperkeratosis (100 percent), focal hypergranulosis (80 percent), and acanthosis (95 percent) with toothing of rete ridges (80 percent) and basal cell liquefaction were characterised by epidermal changes (100 percent). In all cases, pigment incontinence was seen in the superficial dermis in the form of melanophages (100 percent). Just 37 percent of cases had Civatte bodies seen. They have been seen in the lower epidermis and papillary dermis as round, eosinophilic bodies.**Conclusion:**. Early diagnosis and treatment are key to prevent wide spread involvement and differentiate from other skin lesions. Treatment options depend on disease severity interms of symptoms and extent of involvement.

Keywords: Lichen planus, Hyperkeratosis, Focal hypergranulosis.

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Introduction

A common dermatosis that impacts the skin, mucosae, and nails is lichen planus (LP). "The typical LP rash is well characterised by the "5 Ps": well-defined pruritic, planar, purple, polygonal papules. LP's microscopic appearance is pathognomic and shows hyperparakeratosis with granular cell layer thickening, basal cell layer degeneration, and band-like lympho-cytic inflammation with Civatte body (CBs) formation in the sub-epidermal layer[1,2].

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Lichen planus causes intolerable scratching that can interfere with itching in sleep. The cosmetically unacceptable hyperpigmentation and the hypertrophic lesions produced during the illness make it a disease as troubled one. Normal course of the disease without treatment is prolonged. Some morphological forms are related to its chronicity.Spontaneous resolution is not invariable and damage is often caused through is irreversible. A cell-mediated reaction to some unknown antigen is considered, and different treatment modalities are available .In Indian patients, the clinical types and characteristics of lichen pla-nus are well defined, but the histopathological characteristics that are diagnostic have not been examined in depth[3,4]. This study was therefore conducted to study the

clinical profile and histopathological association of lichen planus.

Materials and methods

The cross-sectional study consisted of 54 patients who visited outpatient clinic Katakam Skin Clinic Kothawada Warangal Telangana. A brief history and comprehensive clinical review were conducted on the patients, which was documented.

Study period 2018-2020.

Inclusion criteria

Both male and female patients aged between18-65 years clinically diagnosed of Lichen Planus.

Exclusion criteria

- Patients who are showing clinical features similar to Lichen Planus but not proven histologically.
- Patients giving history of skin eruptions that occur after ingestion,contactor inhalation ofcertain chemicals like gold salts, beta blockers, antimalarials, thiazide diuretics,furosemide,spironolactone and penicillamine.
- Pregnant women.

All haematological studies have been conducted, including haemoglobin, total leukocyte count, differential cell count and sedimentation rate of erythrocytes. Ova and cysts were tested for stool. In all patients, liver function tests were performed.In all cases, skin biopsies from representative areas were taken and subjected to a thorough histo-pathological examination. These biopsies were taken in patients to confirm the diagnosis where clinical presentation was not characteristic of LP. The clinical data were collected from the files of the department of dermatology. The biopsies for histological examination were fixed in 10% buffered formalin and routinely processed for hematoxylin and eosin stain (H and E).

The statistical data were studied using the percentage (%) and proportion. Association of the histo-pathological patterns across the LP and sex was compared using Chi square test.

Results

Total numbers of biopsy inclusive of LP were 54.

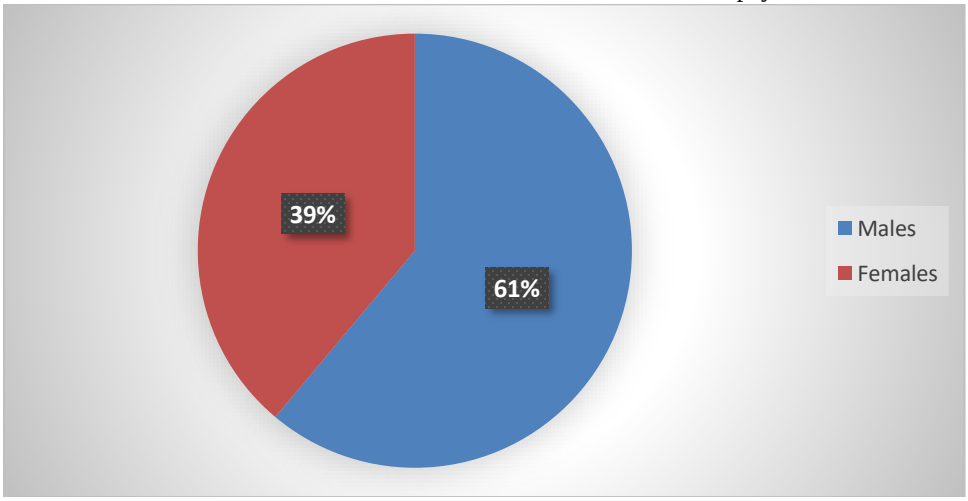

Fig 1: Gender distribution in study

Of the total cases, 33 were males and 21 were females. More common are males with a male : female ratio of 3:2

Table 1: Age distribution of lichen planus in our study

Age intervals	Number of cases	Percentages
18-24	3	5.5
25-34	11	20.3
35-44	16	30
45-54	9	16.6
55-64	7	13
65-74	6	11.1
>75	2	3.7

Mean age ranged from 41 ± 11 years. Most of the people in study come into 35-44 years with 16 cases 30% followed by 25-34 years with 11 cases 20%.

Table 2: Distribution of lichen planus lesions in our study

Lesions	Number of cases	Percentages
Classical lichen planus	38	70.4
Lichen planus hypertrophicus	11	20.3
Lichen planus actinicus	3	5.5
Lichen planopilaris	1	1.8
Oral lichen planus	1	1.8

Out of the 54 cases, 38 (70.4%) cases were of classical lichen planus, 11(20.3%) cases were of Lichen planus hypertrophicus, 3(5.5%) cases were of Lichen planus actinicus, 1 (1.8%) each of Lichen planopilaris and Oral lichen planus.Most of the patients presented within 1-2 months of onset of symptoms. Majority of the patients presented with moderate to severe degree of itching (73%). 70% had papular lesions only, while 12% had both papules and plaques. All hematological and biochemical investigations were within normal limits. Epidermal changes were characterized by hyperkeratosis (100%), focal hypergranulosis (80%), and acanthosis (95%) with toothing of rete ridges (80%) and basal cell liquefaction (100%). In all cases of lichen planus actinicus, epidermal thinning has been observed. LPH had more pronounced hyperkeratosis and acanthosis and LPP had more marked keratotic plugging than traditional LP Dermal changes were characterised in all cases by a band-like inflammatory infiltrate predominantly of lymphocytes with a few macrophages that hug the dermo-epidermal junction (100 percent). In all cases other than LPP, in which perifollicular contact was more normal, the inflammatory infiltrate was primarily perivascular. The inflammatory infiltrate was mainly composed of macrophages in LPH. Pigment incontinence in the form of melanophages was seen in the superficial dermis in all cases (100%). Civatte bodies were seen in only 37% of cases. They were seen as round, eosinophilic bodies in the lower epidermis and papillary dermis.

Discussion

In our study of the total cases, 33 were males and 21 were females. Male: female ratio of 3:2 ie male predominance. Lichen planus affects both sexes, but a few studies have suggested a male predominance. O.P Singh et al[5] analytical study of 441 patients with lichen planus occurrence was 76% of conditions in their institution with sex ratio was 3:2 which very much coincides with our study.In a similar study done by Kachhawa et al[6] also found 58.7% cases of male in a total of 375 patients of lichen planus in 1995. However, in a study by Bhattacharya M et al[7] in 2000, both sexes were equally affected Mean age ranged from 41 ± 11 years. Most of the people in study come into 35-44 years with 16 cases 30% followed by 25-34 years with 11 cases 20%. The commonest affected age group in our study was 25-44 years, in agreement with other studies from India.O.P singh et al[5] showed 3rd decade as most common age group followed by study of Kachhawa et al[6] found maximum number of cases in 20 -39 years age group. Anita D. Munde et al[8] showed that lichen planus is more prevalent in 3rd decade of life in our study (mean age 36.9 years), which is lower than the mean age reported in central China (50.4 years), UK (52.0 years), Spain (56.4 years), and Italy (56.7 years)[9-11].This was probably due to the ethnic population and geographic difference in our cohorts compared to previous reports.In our study 38 (70.4%) cases were of classical lichen planus, 11(20.3%) cases were of Lichen planus hypertrophicus, 3(5.5%) cases were of Lichen planus actinicus, 1 (1.8%) each of Lichen planopilaris and Oral lichen planus. Which is similar with study of Jayamaisnam et al[12] with maximum number of cases 37 (61.6%) were those of classical lichen planus followed by hypertrophic lichen planus, 8 cases (13.3%). The other variants found are lichen planus pigmentosus, 5 cases (8.3%), Actinic lichenplanus, 4 cases (6.6%), eruptive lichen planus, 3 cases (5%). One cases each of atrophic, buccal, and annular lichenplanus.This is in concordance with other studies[13]. LPA is a distinct variant of LP also called subtropical LP and melano dermatite lichenoide. It occurs mainly in the Middle-East and predominantly on sun exposed areas of the skin. Its reported incidence in India is between .4 to 19.2%.[6].In our study, LPA comprised 4% of all cases.The majority of patients had moderate to severe levels of itching. Similar views were also found by Bhattacharya M et al[7] in which 79.3 percent had predominant itching symptoms compared to 73% percent in the present study. None of the patients reported any family history of similar lesions in the current study. An eruption of lichen

planus may decrease fully within a few months or may progress to chronic lichen planus partially and at sporadic intervals over months to years. The development of mucous membrane lesions tends to be associated with the persistence of the disease. Those patients with cutaneous involvement only become clearer more quickly. In 8 families in western Rajasthan, Kachhawa et al[6] registered familial LP. None of the patients in the current sample, however, gave a history of some precipitating cause of the disease comparable to other research performed by other staff . The role of psychological factors in the production of lichen planus is controversial. In certain patients, psychogenic factors seem to be significant and psychological stress has been linked to the onset of the disorder, the precipitation of subsequent attacks and resolution after the stressful factors have been eliminated. Lichen planus is imperative that the lesion is identified precisely and proper treatment be administered at the earliest. A proper understanding of the pathogenesis, clinical presentation, diagnosis of the disease becomes important for providing the right treatment.

Conclusion

LP is a disorder more common in males usually manifesting in the 3rd to 4th decade of life, with the classical type of cutaneous LP being most commonly encountered. Early diagnosis and treatment are key to prevent wide spread involvement and differentiatefrom other skin lesions. Treatment options depend on disease severity interms of symptoms and extent of involvement. Topical, intralesional and systemic therapies singlyorin combination may be necessary. Although there are new definitive curative modalities, new discoveries and conceptual advances continue to broaden our treatment options of this rather complex conditions.

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Conflict of Interest: Nil
Source of support:Nil