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A Clinical Study and Histopathological Assessment of Lichen Planus Cases

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ABSTRACT
There are numerous variations of oral lichen planus, including bullous, papular, reticular, erosive, atrophic and plaque-like forms. This study was design to investigate the clinical and histopathological outcome of Lichen Planus Cases. A complete physical examination, a detailed history and pertinent investigations were completed. The study design used was a cross-sectional study and was carried out at our Institute's Department of Pathology. We examined all of the lichen planus cases that our department had been receiving over the previous two years in retrospect. For the purpose of researching the clinicopathological features of lichen planus, a total of 70 histologically identified lichen planus samples were included. In our study hyperkeratosis(87%), hypergranulosis(87%), acanthosis(79%), saw toothing of rete ridges(60%) and liquefaction degeneration of basal cells(74%) were consistent features, civatte bodies were seen in 11% of cases, band like infiltrate (90%) and melanin incontinence(78.3%) were seen in dermis. Histopathological analysis is highly helpful in diagnosis and variant differentiation. While varieties of LP show some of the typical findings and a few prominent changes diagnostic of a specific type, papular LP exhibits all of the typical histological hallmarks of LP documented in the literature.

INTRODUCTION

Although the precise cause of Lichen Planus is unknown, a number of potential processes, including autoimmune, genetic, psychomotor, viral and allergy[1], have been suggested. It has been suggested that the pathogenic mechanism is initiated or stimulated by the cutaneous T-lymphocytes[2]. Although the "five Ps" of a classic cutaneous lesion are often purple, planar, polygonal, pruritic and papular, Lichen Planus can present with a variety of morphological patterns, as (Table 1) illustrates. Mucous membranes in the mouth, vagina and esophagus are also impacted by lichen planus. There are numerous variations of oral lichen planus, including bullous, papular, reticular, erosive, atrophic and plaque-like forms[3,4]. Pterygium is the defining finding in 10-15% of instances where there is nail involvement. Alopecia scarring or not, lichen planus can also cause keratotic follicular papules, which are lesions that harm the hair[5,6]. In 0.3-3% of cases, malignant transmission can happen[3].

The histological features of a classical Lichen planus papule include compact orthokeratosis, irregular acanthosis, wedge-shaped hypergranulosis, basal layer vascular change, a band-like cutaneous lymphocytic infiltration and pigmentary incontinence. Six civatte bodies are visible in the lower skin layer. Lichen planus varieties differ in these aspects. Management of Lichen planus is challenging, it is essentially benign and usually self-limited, although recurrences and exacerbations do occur for many years[2]. Topical, systemic and intra lesional steroids are useful in inducing remission[2,7,8]. Course and prognosis is unpredictable, typically persists for 1-2 years, generalized eruptions heal faster than limited disease, whereas hypertrophic Lichen planus follows a protracted, unremitting course[5,6,2]. Usually, the lesions become more noticeable in the spring and summer and go away in the winter. Rarely, though, parts of the body that aren't typically exposed to sunlight, such the feet, legs, genitalia and trunk, may also be affected. In contrast to the traditional LP, the actinic form typically begins at a younger age, lasts longer and has a higher propensity to include women who have darker skin.
Usually starting in the third or fourth decades of life, pigmentosus LP (LPP), more widespread in India and the Middle East, is slightly more common in women. Usually, the face, neck and less frequently, flexor regions including the axilla, groin and infra-mammary folds are affected by lesions. Like LPA, this kind of LP is more prevalent in sun-exposed locations[9-10]. Both LPP and LPA lesions frequently appear in the third to fifth decades of life and are seen in sun-exposed locations including the face and neck[9-12]. As a result, these lesions may lead patients to feel uneasy and anxious, which may have a negative impact on their interactions with family, friends and coworkers. As a result, early detection and treatment of the illness can enhance patients' quality of life. No extensive study has been conducted in India to investigate the clinical features of these two types of diseases and to search for their indigenous differences compared to other countries.

MATERIALS AND METHODS

A complete physical examination, a detailed history, and pertinent investigations were completed. The study design used was a cross-sectional study and the sample size calculation yielded 36 with $\alpha = 5\%$ and an absolute error of 3% for incidence of 0.8%. The study was carried out at our Institute's Department of Pathology. We examined all of the lichen planus cases that our department had been receiving over the previous two years in retrospect. For the purpose of researching the clinicopathological features of lichen planus, a total of 70 histologically identified lichen planus samples were included. Clinical details from the pathology archives, such as location, sex, type of lichen planus and age, were noted in the case record form. Slides and blocks stained with hematoxylin and eosin (H and E) were taken from each case's documentation. Hand-stained sections were utilized to examine the histological characteristics of lichen planus. Upon reexamining the samples with lichen planus for the study, the diagnoses were validated by histopathological analysis. Every physical characteristic was also recorded for comparison with the clinical subtype.

Statistical Analysis: Fisher's Exact test was used to assess associations between various variables. All analyses were performed using SPSS software. A p-value of less than 0.05 was considered statistically significant.

RESULTS AND DISCUSSIONS

Out of all Dermatology out patients LP constituted 0.59%. Majority (53.2%) 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, 91% of patients had pruritus. Papular LP was the commonest type, only skin was involved in 81%, skin and mucous membrane was involved in 19%. The commonest site involved was extremities in 73% followed by trunk in 38%. Reticular type was the commonest among oral lesions. Koebner phenomenon observed in 65% and nail involvement was seen in 21% of patients. In our study hyperkeratosis(87%), hypergranulosis(87%), acanthosis(79%), saw toothing of rete ridges(60%) and liquefaction degeneration of basal cells(74%) were consistent features, civatte bodies were seen in 11% of cases, band like infiltrate (90%) and melanin incontinence(78.3%) were seen in dermis. Consistent with previous research, the age group most commonly impacted in our study was 21-30 years old[13]. Our

Table 1: Showing Age distribution

Age in years	No. of Patients	Percentage
Below 10	02	2.8
11-20	10	14.2
21-30	19	27.1
31-40	15	21.4
41-50	12	17.1
Above 50	12	17.1
Total	70	100

Table 2: Showing sex distribution

Sex	No. of patients	Percentage
Male	40	57.1
Female	30	42.8
Total	70	100

Table 3: Showing various clinical types

Clinical types of LP	No. of patients	Percentage
Papular	23	32.8
Guttate	03	4.2
Hypertrophic	13	18.5
Linear	05	7.1
Actinic	05	7.1
Annular	04	5.7
Follicular	05	7.1
Pigmented	04	5.7
Zosteriform	02	2.8
Oral	02	2.8
Palms	04	5.7
Bullous	03	4.2
Total	70	100

investigation revealed a male predominance that is consistent with previous research[10,12]. Several studies have also shown a preponderance of women.2 According to findings from earlier studies, hypertrophic type LP was the most common, followed by classical (papular) LP[13,14]. In line with prior studies, we observed linear LP in 8% of the patients[15]. Nevertheless, a study revealed a very low rate of linear LP[16]. In line with previous research, 8% of participants in our study had agonistic LP. Actinic LP can occur 7.48-14.1% of the time; the incidence varies according on profession and climate[13,17]. In comparison to previous research, we have found a greater incidence of follicular LP (8%) in our data. Thirteen In line with past studies, our investigation revealed that in 80% of cases, only the skin was affected and in 18% of cases, both the skin and mucous membrane were impacted. Comparing this study to others, the mucous membrane participation is the only one that is low. Thirteen Other studies found that among oral LP, the reticulum type was the most prevalent.

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.

Head and neck was the most common site of involvement in lichen planus pigmentosus and lichen planopilaris. A statistically significant association was also seen between female gender and upper limb involvement. No such associations have been described in the literature till date to the best of our knowledge. Lichen planopilaris is an uncommon inflammatory hair loss disease. The majority of the patients in our study were in the age group of 20-40 years, an older age is reported in the western literature (Chieregato *et al*. Tan *et al*.). Though female predominance has been reported in lichen planopilaris, the majority of our patients were males. The most common site involved was scalp, seen in 82% patients. Pruritus was associated in 17.5% of our cases, this is quite low compared to the reported figures of 70%. Equal number of cases [(7/17) 41%] of violaceus and pigmented lesions were seen in this study. Atrophic lesions were seen in less than half of the cases. One report suggested that violaceus papules were observed in early lesions while late lesions were characterized by atrophic scarring[18]. As reported, alopecia was observed in approximately half of our pati[19].

In our study, the histopathological changes most frequently observed in lichen planopilaris were orthokeratosis, wedge shaped hypergranulosis, perifollicular infiltrate and basal layer vacuolation, observed in 100% cases. Civatte bodies were seen in approximately 60% cases. Less frequently observed findings were follicular plugging (23.5%) and perifollicular fibrosis (17.6%). Interfollicular epidermis was involved in 35% cases.

CONCLUSION

This study highlights the importance of a thorough history and clinical examination. Additionally, because LP can present with a variety of clinical morphological types, histopathological findings can be highly helpful in distinguishing between its forms. Histopathological analysis is highly helpful in diagnosis and variant differentiation. While varieties of LP show some of the typical findings and a few prominent changes diagnostic of a specific type, papular LP exhibits all of the typical histological hallmarks of LP documented in the literature.

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