

Clinicopathological Study on Lichen Planus in Rajshahi Medical College Hospital

*Samia Naz,¹ Md. Fazlur Rahman,² SM Badruddoza,³ Afsar Siddique⁴

ARTICLE INFO

Article history:

Received: 26 October 2016

Accepted: 12 January 2017

Online:

www.nbmc.ac.bd

Keywords:

Lichen planus, Lichenoid skin lesion, Papulosquamous, Oral lichen planus, Dermatoses.

ABSTRACT

Introduction: This study was carried out to confirm the clinically diagnosed cases of lichen planus in patients presented with lichenoid skin lesions by histopathology. **Methods:** Total of 94 skin biopsies were taken from the site of lichenoid skin lesions and histopathological study was done. **Results:** Among 94 cases of lichenoid skin lesion, 39 (41.48%) were histopathologically diagnosed as lichen planus, of them 22 (56.41%) were male and 17 (43.59%) were female. Males were predominant. **Conclusion:** In most cases, clinical study alone is not sufficient for the diagnosis. So, both clinical examination and histopathological study are needed for appropriate diagnosis and management of lichen planus patients.

¹. Assistant Professor, Department of Pathology, Rajshahi Medical College, Rajshahi

². Professor, Department of Pathology, Anwer Khan Modern Medical College, Dhaka

³. Professor, Department of Pathology, Rajshahi Medical College, Rajshahi

⁴. Assistant Professor, Department of Dermatology and Venereal Diseases, Rajshahi Medical College, Rajshahi

*Corresponding author: ✉ samia11naz@gmail.com

INTRODUCTION

Lichen planus (LP) is a common subacute or chronic inflammatory papulosquamous disorder of unknown aetiology. It affects skin, mucous membrane, nails and hair follicles. It is characterized by erythematous to violaceous, flat-topped, polygonal papules. Both genetic and environmental components such as drugs or infections may interact to elicit this disease. Cell-mediated immunity plays the major role in triggering the clinical expression of the disease.^{1,8,9} Recent studies provide evidence that auto reactive cytotoxic T lymphocytes are the effector cells which cause degeneration and destruction of keratinocytes.^{9,12,14} LP are of several varieties such as

classic, atrophic, hypertrophic, linear, annular, bullous, ulcerative, oral, actinic etc.¹ It is a chronic, usually self-limited benign dermatosis. Malignant transformation is extremely rare. The severe and prolonged chronic inflammation due to persistence of hypertrophic LP leads to development of squamous cell carcinoma.^{2,8} The papulosquamous disorders are complex to diagnose, as they may resemble a similar disorder of the group. Histomorphological diagnosis is important for separation of these disorders because the treatment and prognosis for each tends to be disease specific.¹³ Hence, the study was done to correlate the clinical diagnosis of LP with histopathological findings.

METHODS

This cross-sectional descriptive type of study was carried out in the Department of Pathology, and Dermatology and Venereal Diseases of Rajshahi Medical College, Rajshahi, during the period of July 2005 to June 2007. A total of 94 patients of both sexes aged between 5-75 years were included in this study. Biopsies of skin and mucous membrane were taken from those patients with lichenoid skin lesions. A full thickness of elliptical incisional biopsy was taken from the lesions with proper aseptic precaution under local anaesthesia (2% lignocaine) after taking a valid consent. Then the sites of incision were closed by sutures. The biopsy materials were preserved in 10% formalin. Then paraffin block was prepared for histological section and Haematoxyline and Eosin staining was done. During

histopathological examination following features were carefully noted such as hyperkeratosis, focal hypergranulosis, acanthosis with saw-toothing rete ridges, band-like inflammatory infiltrate at dermo-epidermal junction and civette bodies. All the histopathological features were correlated with the clinical findings.

RESULTS

Lichenoid skin lesions were diagnosed as lichen planus (LP) by histopathological study. Out of 94 lichenoid skin lesion cases, 39 (41.48%) were histopathologically diagnosed as LP. Among them 22 (56.41%) were male and 17 (43.59%) were female respectively. Male and female ratio was 1.3 : 1. The age was from 5 years to 75 years with a mean age of 30.6 years. Maximum number of patients (11, 28.21%) was in age group 21- 30 years (Table I).

Table I: Age and sex distribution of lichen planus cases

Age groups (years)	Male % (n-22)	Female % (n-17)	Total % (n- 39)
0-10	01(33.33)	02(66.67)	03(7.69)
11-20	06(85.71)	01(14.29)	07(17.95)
21-30	04(36.36)	07(63.64)	11(28.21)
31-40	03 (60.00)	02 (40.00)	05(12.82)
41-50	07 (70.00)	03 (30.00)	10(25.64)
51-60	01 (50.00)	01 (50.00)	02(5.13)
>61	--	01 (100)	01(2.56)
Total	22 (56.41)	17 (43.59)	39 (100)

Number of lichen planus cases and duration of lesions are shown in Figure- 1.

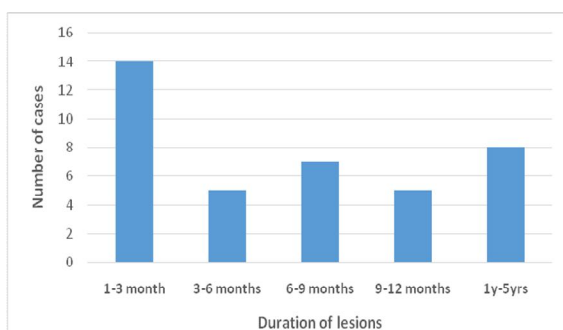


Figure 1: Duration of skin lesions of lichen planus

Papules and plaques with scales were mainly confined to the extremities and trunk. They were distributed as follows: 20 (51.28%) in limbs and trunk, 7 (17.95%) in both upper and lower limbs. But 1 (2.56%) in oral mucosa, 1 (2.56%) in lower limbs, 2 (5.13%) in upper limbs and 7 (17.95%) were generalised (Table II).

Table II: Distribution of skin lesion in different parts of the body

Site of lesion	Number (n- 39)	(%)
Limbs & trunk	20	51.28
Both upper & lower limbs	07	17.95
Oral mucosa	01	2.56
Lower limb	01	2.56
Upper limb	02	5.13
Generalised	07	17.95
Total	39	100

Different varieties of lichenoid dermatoses categorized by histopathological examination, among 94 cases of lichenoid skin lesions were are shown in Table III.

Table III: Histopathological diagnosis of 94 cases of lichenoid skin lesion

Serial No.	Histopathological diagnosis	Number of patients	(%)
1.	Lichen planus	39	41.49
2.	Chronic non-specific dermatitis	35	37.23
3.	Lichen simplex chronicus	07	7.45
4.	Benign lichenoid keratosis	05	5.32
5.	Prurigonodularis	01	1.06
6.	Prurigo simplex	01	1.06
7.	Inflammatory linear verrucous epidermal nevus	01	1.06
8.	Pityriasis lichenoides et varioliformis acuta	01	1.06
9.	Psoriasis vulgaris	01	1.06
10.	Lupus vulgaris	01	1.06
11.	Lepromatous leprosy	01	1.06
12.	Squamous cell carcinoma with features of lichenoid reaction	01	1.06
Total		94	100

Among the several variants of lichen planus (LP) shown in Table III. Almost all of cases (36, cases (n-39), classical, oral, hypertrophic and 92.32%) were classical variant of LP. atrophic type were observed in this study are

Table III: Distribution of several variants of lichen planus cases

Variants of lichen planus	Number of cases (n- 39)	(%)
Classical	36	92.32
Oral	01	2.56
Hypertrophic	01	2.56
Atrophic	01	2.56
Total	39	100

Histologically, mild degree of hyperkeratosis was observed in 4 (10.26%), moderate degree in 34(87.18%) and marked degree in1 (2.56%) cases. Similarly, mild degree of hypergranulosis was observed in 2 (5.13%) and marked degree in 37 (97.87%) cases. Acanthosis of the epidermis in mild degree was observed in 1 (2.56%), moderate degree in 37 (97.87%) and marked degree in 1 (2.56%). Focal degeneration of basal layer was observed in 16 (41.03%)

cases and diffuses infiltration in 23 (58.97%) cases. Band-like infiltration of chronic inflammatory cells along the dermo-epidermal junction was observed in 26 (66.67%) cases and civette bodies in 17 (3.59%) cases. One case was clinically diagnosed as ulcerated oral lichen planus but histopathologically it was diagnosed as squamous cell carcinoma with lichenoid reaction within the adjacent mucosa (Table IV).

Table IV : Important histological features of lichen planus

Histological features	Mild	Moderate	Marked	Total
Hyperkeratosis	4 (10.26%)	34 (87.18%)	1 (2.56%)	39 (100%)
Hypergranulosis	2 (5.13%)	–	37 (97.87%)	39 (100%)
Acanthosis	1 (2.56%)	37 (97.87%)	1 (2.56%)	39 (100%)
Focal degeneration of basal layer	16 (41.03%)	–	23 (58.97%)	39 (100%)
Band-like infiltrate along dermoepidermal junction	–	3 (7.69%)	26 (66.67%)	39 (100%)

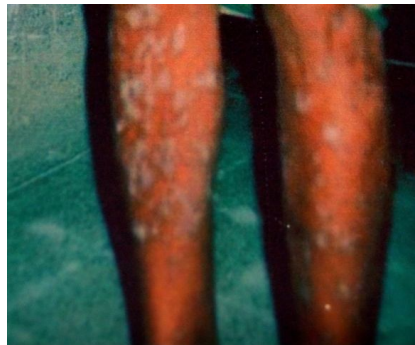


Figure 2: Photograph of lichenoid skin lesion in lower extremities

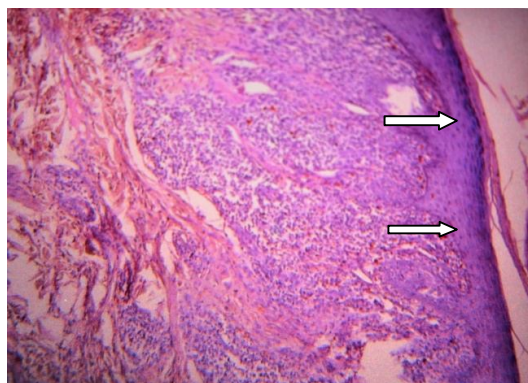


Figure 3 : Photomicrograph of lichen planus showing band-like infiltrate of lymphocytes along the dermoepi-dermal junction (H & E stain, 10X)

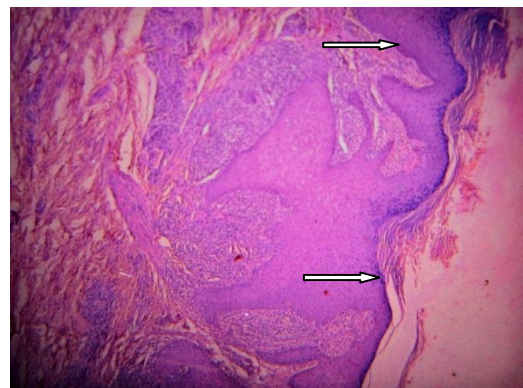


Figure 4 : Photomicrograph of Hypertr-opic lichen planus showing hyper-keratosis (H & E stain, 10X)

The clinical diagnosis showed concordance with histopathological diagnosis in 39 (41.49%) cases of lichen planus.

DISCUSSION

In the present study, Lichen Planus (LP) is common among patients clinically presented with lichenoid skin lesions. There were no significant sex difference and most of the patients were within 21–30 yrs. The skin lesions were violaceous papules and plaques with scales involving preferentially the flexural surfaces of the limbs and trunks. In few cases, it was also found in oral mucosa. Pruritus were moderate to severe. Our study is similar with Boyed and Neldner where they found the skin involvement tends to occur at a younger age, most of the patients were in third decade.¹ The cutaneous lesions tend to involve the flexor surface of arm and wrist is the classic characteristic site. The arms and legs were the most common sites, although, the thigh, lower back, trunk and neck were also involved.^{9,10}

The papules were faintly erythematous to violaceous, flat-topped and occasionally polygonal form. LP tends to be intensely pruritic.⁹ The age group, sites of involvement and types of lesion correlates well with the present study.

An Egyptian scientist stated in a clinical and epidemiological study of LP, the age range of patients were 10-65 years, and male to female ratio were 1.3:1.⁷ The majority of the patients in the present study fall in 21-30 years of age. Presentations include classic, hypertrophic, oral and atrophic. Pruritus was the chief complaints and limbs were the initial site of onset. The histologic picture of LP showed hyperkeratosis, hypergranulosis, irregular acanthosis, focal degeneration of basal layer and band-like infiltrates of lymphocytes along the dermo-epidermal junction. Civette bodies were also seen in few cases which is similar with the study of Ellis.³ The present study is also showed similar histological findings with Bhuiyan.^{11,13}

Among the morphologic variants of LP, classic type, hypertrophic LP, Oral LP (OLP) and

atrophic LP were found in this study. Patients develop hypertrophic lesion if persists for longer time period. The absence of hyperkeratosis was seen in atrophic LP.^{11,13}

One case diagnosed as squamous cell carcinoma (SCC) with lichenoid reaction was presented with plaque-like lesions in buccal mucosa with ulcerated growth and erythematous areas. Particularly the erosive and plaque-like forms of OLP had the possibility of transformation to carcinoma.⁴ A feared complication of OLP was the development of oral SCC.⁵ The frequency of malignant transformation ranges from 0.4% to more than 5% with the highest rate noted in erosive lesions. Chronic irritation by sharp teeth, dentures or tobacco were suggested as the precipitating factor for malignant transformation of OLP.² In the present study, one of the patients was female of 55 years who had lesion for 18 months and had history of chewing betel nut. So, there may be association of OLP with chronic irritation for the development of SCC as stated in the above studies.

The present study showed 42.55% concordance and 57.45% discordance between the clinical and histopathological diagnosis among the 94 cases of lichenoid skin lesions. So, clinical evaluation alone is not sufficient for the diagnosis of lichenoid skin lesions, rather a subsequent histopathological examination would enable us to reach a correct diagnosis and proper management of the patients.^{10,12}

CONCLUSION

It may be concluded from the present study that all clinically diagnosed lichenoid skin lesions were not lichen planus, a few of them were different types of chronic dermatitis. Clinical evaluation alone is not sufficient for the diagnosis. So, all lichenoid skin lesions require biopsy and histopathological examination for proper diagnosis and management of patients.

Conflicts of Interest There is no conflict of interest.

REFERENCES

1. Boyed AS, Neldner KH. Lichen planus. *J Am Acad Dermatol.* 1991; 25: 593-619.
2. Kronenberg K, Fretzin D, Potter B. Malignant degeneration of Lichen planus. *Arch Dermatol.* 1971; 104: 304-307.
3. Ellis FA. Histopathology of lichen planus based on analysis of one hundred biopsy specimens. *Journal of Investigative Dermatology.* 1967; 48(2): 143-148.
4. Lodi G, Scully C, Carrozzo M, Griffith M, Sugerman PB, Thongprason K. Current controversies in oral Lichen planus: Report of an international consensus meeting. Part 2. Clinical management and malignant transformation. *Oral Surg Oral Med Oral Path Oral Radiol Endod.* 2005; 100: 164-178.
5. Eisen D. The clinical features, malignant potential and systemic association of oral lichen planus: A study of 723 patients. *J Am Acad Dermatol.* 2002; 46: 207-214.
6. Tilly JJ, Drolet BA, Easterly NB. Lichenoid eruptions in children. *J Am Acad Dermatol.* 2004; 151 (4): 606-624.
7. Anber T, Barakat M, Ghannam SF. A clinical and epidemiological study of lichen planus among Egyptians of Al- Minya Province. *Dermatology online Journal.* 2003; 11(2): 1-11.
8. Lakshmipriya G, Uma S. Clinicopathological study of Lichen planus in a tertiary care center. *Int J Sc study.* 2016; 4(1): 244-247.
9. Parihar A, Sharma S, Bhattacharya SN, Singh UR. A clinicopathological study of cutaneous lichen planus. *Journal of Dermatology & Dermatologic Surgery.* 2015; 19: 21-26.
10. Karumbaiah KP, ArshiyAnjum, Mallika-rjun M. A histopathologic study of papulosquamous lesions of skin. *Indian Journal of Pathology: Research and Practice.* 2017; 6(2): 404-409.
11. Gargi R, Maheshwari, Hita H. Mehta, Vivek Nikam. Clinicopathological correlation for diagnosis of lichenoid interface dermatoses. *Journal of Dermatology & Dermatologic Surgery.* 2016; 20: 115-124.
12. Richard D, Southeimer. Lichenoid tissue reaction/Interface dermatitis: Clinical and Histologic perspectives. *J Invest Dermatol.* 2009; 129: 1088-1099.
13. Chavan SD, Mahajan SV, Vankundre AJ. A descriptive study on papulosquamous lesions at Tertiary care Institute. *MPV Journal of Medical Sciences.* 2014; 1(1): 30-35.