Original Article

ORAL LICHEN PLANUS AMONG DENTAL PATIENTS IN SANDEMAN PROVINCIAL HOSPITAL QUETTA

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ABSTRACT

Objective: *The aim of this cross sectional clinical study was to investigate the Oral lichen planus among Dental Patients in Dental Section, Sandeman Provincial Hospital Quetta.*

Material and Methods: *This cross sectional clinical study was conducted in the Department of Oral Medicine and Periodontalogy Dental Section Bolan Medical College Sandeman Provincial Hospital Quetta from July 2011 to September 2013. Total of 14950 patients came in this duration for their routine dental check-up, scaling and diagnosis for different lesions were recruited for this study.*

Results: *Thirty two (0.21%) patients out of 14950 patients diagnosed as Oral lichen planus. Among 32 Oral lichen planus patients 19 (59.4%) were male and 13 (40.6%) were female with mean age ofs 47 years. Majority of patients were non smokers 23 (71.8%) while 9 (28.2%) patients were smokers and 3 (9.4%) patients were betel quid users. Buccal mucosa was the most common site 46.8% followed by tongue 21.8.*

Conclusions: *Our data shows a low prevalence of Oral lichen planus among Dental patients in Quetta. There's no confident way to prevent Oral lichen planus, Getting underlying medical state under control may help Oral lichen planus from aggravating and abstaining from alcohol and tobacco can help to reduce the possibility of Oral cancer, which has been associated to Oral lichen planus.*

Key words: *Prevalence, Oral lichen planus, Oral mucosa*

INTRODUCTION

Oral lichen planus (OLP) is a chronic inflammatory autoimmune T-cell mediated condition that typically effects the Oral mucosa, skin, nails and some time genitals[1]. Typically OLP appears as a white, lace-like pattern usually on the inner surface of cheeks, tongue, gingiva and vermillion of lips. An important complication of OLP is the development of Oral squamous cell carcinoma. The treatment goals focus on helping severe lesions heal and reducing pain or other discomfort but a wide variety of treatment options are available, from topical corticosteroids to laser ablation of the lesions[1].

Lichen planus (LP) is a persistent inflammatory T-cell mediated disease that involves oral, nails, skin, genital mucous membranes and scalp. It was first described on the skin by Erasmus Wilson in 1869 who also noted oral lesions in several patients. It is one of the most prevalen oral diseases that manifest itself in the oral cavity[1,2].

Oral Lichen Planus (OLP) typically show as white striations, papules, plaques, erythema, erosions or blisters affecting mostly the buccal mucosa, tongue and gingivae, even other sites are sometimes involved like nails, scalp and genital areas. OLP are common in adults over 40 years, however younger adults and children may be affected by this lesion. OLP lesions are bilaterally involved with white striations and often appear as a mixture of clinical subtypes. White or grey streaks may form a linear or reticular pattern on an erythematous background. Alternatively, there may be a central area of shallow ulceration (erosion) with a yellowish surface (fibrinous exudate) surrounded by an area of erythema[2].

OLP lesion noted from 0.1% to 4% of individuals, but it depends on the population and is usually

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noted in middle-aged and old-aged people. It's more common in women as compared to men and 2:1 has been notyfied[3]. The cause and pathogenesis of lichen planus are unknown, although evidence suggests that it is an immunologic disorder, possibly an autoimmune disease, in which T lymphocytes destroy the basal cell layer of the affected epithelium[4]. OLP is mostly self-limiting lesion and heals after a variable period ranging from few months to years leaving behind hyperpigmentation and scarring due to the chronic inflammatory nature of the lesion. LP is uncommon in children and early aged group people reported less than 2-3% of all adult cases[5]. Acording to the reported data it affected people between 30-60 years age, nevertheless OLP can be found at any age[6].

Typically mucosal lesions are found on the tongue and the buccal mucosa bilaterally by specific white or gray streaks also called a (Wickham's striae) forming a linear or reticular pattern on a violaceous background. Many different types of OLP have been noted such as reticular, plaque, atrophics, papular, erosive and bullous types (Fig 1). Ulcerated oral lesions may have a higher chance of malignant transformation in men, but its higher in those people who frequently smoke and chew tobacco[7,8].

The typical skin lesions of lichen planus can be described as the "5 P's": well-defined pruritic, polygonal, planar, pruritic papules and plaques. These skin lesions ordinarily involve the flexor surfaces of the legs and arms especially the wrists. The nail beds may also be affected with resultant ridging, thinning and subungual hyperkeratosis. Other less affected areas like scalp may be affected, if untreated can cause to scarring and permanent hair loss. Majority of oral OLP noted with skin LP about 30% to 50% of patients oral lesions also have cutaneous lesions acording to the published work, the presence of these specefic characteristic of LP, cutaneous lesions can aid in the diagnosis of OLP[9]. It is very important for proper diagnosis of OLP to take a complete history and physical examination by a multidisciplinary group of health care providers may be required to investigate oral, skin, nail, scalp, genital, oesophageal, laryngeal and conjunctival involvement[10]. The history, typical oral lesions and skin or nail involvement are usually enough to make a clinical diagnosis of OLP. However, biopsy is required to differentiate between OLP and malignancy, to validate the clinical diagnosis and exclude the other chronic white, red or ulcerative oral lesions including reactive keratoses, chronic hyperplastic candidosis, epithelial dysplasia, discoid lupus erythematosus, gastro-intestinal disease (including oral Crohn's disease) or anemic states. Direct immunofluorescence (DIF) can help to differentiate erosive, ulcerative and very rear bullous form of OLP from vesicobullous lesions like pemphigus vulgaris, benign mucous membrane pemphigoid, dermatitis herpetiformis and linear IgA bullous dermatosis[11]. DIF finding of OLP shows globular deposits of immunoglobulin M (IgM) and complement mixed with apoptotic keratinocytes.

The histopathologic features diffrentiate LP based on the presence of irregular acanthosis and colloid bodies and lymphocytic band infiltration in the epidermis with destruction of the basal layer which is the charateristic of LP. The upper dermis has a bandlike infiltrate of lymphocytic (primarily helper T) and histiocytic cells with many Langerhans cells. The infiltrate is very close to the epidermis and often disrupts the dermal-epidermal junction[11].

As for treatment concern for OLP many group of drugs are available in the markets to reduce the worsening and desconfort of the lesions like topical steroids, oral retinoids, immunosuppressant medications, tacrolimus, hydroxychloroquine, dapsone, UVB narrow Band Phototherapy and Aloe Vera[12].

The objective of this communication is to investigate the prevalence of OLP among dental patients in Dental Section Sandemon Provincial Hospital Quetta.

METHODS AND MATERIALS

This cross sectional clinical research was conducted in the Department of Oral Medicine and Periodontalogy Dental Section Bolan Medical College Sandeman Provincial Hospital Quetta from July 2011 to September 2013. Total of 14950 patients came during this period in Oral Medicine and Periodontalogy Department for their routine dental check-up, scaling and diagnosis for different lesions. 32 patients out of 14950 were diagnosed after clinical examination and biopsy reports for OLP were included for this study and remaining 14918 were treated and excluded from this study. The study protocol was approved and permission was granted by the Head of the Dental section, Sandeman Provincial Hospital Quetta. All details about the volunteers and their identities were

anonymous. Each subject was given both oral and written information about the nature of the study and a written informed consent was received. Inclusion criteria those had no serious systemic diseases, such as leukemia, hemophilia, and uncontrolled diabetes mellitus. Non cooperative patients or who refused to give consequent or did not have interest to participate in the study were considered to be in exclusion criteria.

All patients were between 11 to 80 years of age, male and female came through outdoor patient department (OPD), were evaluated and enrolled in the study. The referred suspicious patients of lichen planus from different departments were also included in our study. Sociodemograpic history were recorded, detail history and complete clinical examination were performed. Random and suspected cases of OLP biopsy were done to validate the clinical diagnosis and exclusion of other lesions. The data was collected, saved and analyzed in SPSS version 17.

RESULTS

The sociodemographic characteristics of the patients were noted. Out of total 14950 patients. 32 (0.21%) patients were diagnosed for Oral Lichen Planus (OLP), where 19 (59.4%) were male and 13 (40.6%) were female. Majority of patients were non smokers 23 (71.8%) while 9 (28.2%) patients were smokers and 3 (9.4%) patients were betel quid users.

In this study majority of patients were aged between 51 to 60 years. While 9 (28.1%) of patients aged between 41 to 50 years. The mean age of the patients between age 11-20 year in this study was 47.1428, and none of patients were reported with OLP. Detail is given in Table-1.

Multiple areas of oral mucosa were affected by OLP in this study. Buccal mucosa was the most common area 15 (46.8%). Tongue founed by 7 (21.8). Lesions on the skin, lip, palate, and in the floor of the oral cavity were uncommon. Detail is given in Table-2.

Table-1: Age Distribution of patients with OLP

Age	n	%	Mean age
11-20	0	0	47.1428
21-30	1	3.1	
31-40	4	12.5	
41-50	9	28.1	
51-60	13	40.7	
61-70	4	12.5	
71-80	1	3.1	

Tabe-2: Distribution of OLP in Oral Mucosa

Oral Mucosa	n	%
Buccal Mucosa	15	46.8
Tongue	7	21.8
Gingiva	5	15.6
Floor of mouth	2	9.3
Palate	1	3.1
Skin	1	3.1
Lips	1	3.1
Total	**32**	**100**

Table-3: Distribution of OLP according to the types

OLP type	n	%
Reticular	21	65.6
Erosive	2	6.2
Atrophic	3	9.3
Popular	4	12.5
Plaque	2	6.2
bolus	0	0

Reticular type of OLP was the most common form and was present in 21 (65.6%) patients followed by erosive form observed in 2 (6.2%) patients. Detail is given in Table-4.

DISCUSSION

Lichen planus derives its name "lichen" as it looked like lichens growing on the rock and planus is for flat. LP may involve various mucosal surfaces either independently or concurrently (oral, skin, and oral and skin lesions). Oral form may precede or accompany the skin lesions or it may be the only manifestation of the disease.

This cross sectional clinical study attempts to elucidate the epidemiological and clinical characteristics of OLP patients in Dental Section Sandemon Provincial Hospital Quetta. Prevalence of OLP in this study was 0.21% that is slightly lower than prevalence described in rest of world like Germany 1.6%, Spain 1.1%, and china 4.1%. Prevalence of OLP is reported all over the world that varies from 0.1% to 2.2 %, however, prevalence varies according to geographic location. It affects 0.1% to 4% of individuals, depending on the population studied and geograpic locations

and is usually noted in the middle-aged people and advanced in year[13,14]. In this study the majority of patients were male 19 (59.3%) as compared to female 13 (40.7%) but in most of the studies done in different parts of the world female predominance has been reported. OLP was more prevalent in 5th decade of life in this study, mean age was 47 years, which is in agreement with various other reports like in central China (50.4 years), UK (52.0 years), Spain (56.4 years), and Italy (56.7 years), however OLP can occur at any age from 30 to 60 years[15,16,17,18]. OLP in young children was not observed in this study this is the agreement of previous studies. OLP is less common in young

Cutaneous lichen planus on the flexor surface of the wrist. The condition presents as purple, polygonal, plaque-like lesions.

Plaque-type variant of reticular oral lichen planus with erosive areas involving the dorsum of the tongue.

Reticular pattern of fine white keratotic striae typical of oral lichen planus (OLP) on the posterior buccal mucosa. This baseline presentation is found in almost all OLP patients somewhere on the oral or gingival mucosae.

Gingival OLP may present with the typical fine reticular Striae as in this case, with generalized erythema an d fragility. This pattern is frequently and incorrectly referred to as desquamative gingivitis and may be misdiagnosed as mucous membrane pemphigoid.

Erosive oral lichen planus involving the buccal mucosa. The condition is characterized by erythematous areas And Interspersed pseudomembranous areas.

Atropic type of OLP involving the buccle muccosa

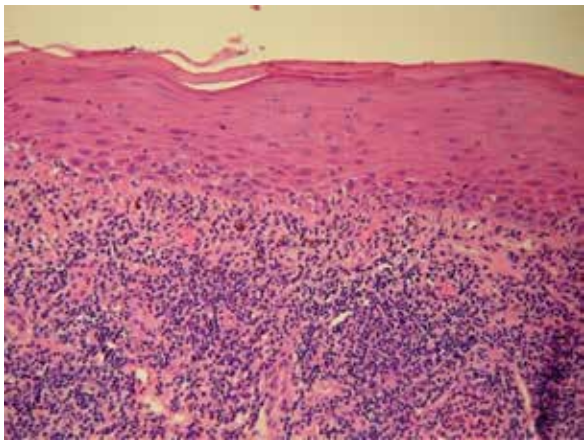

Fig 2: Histopathological features of Oral Lichen Planus (OLP) including dense band like infiltration of lymphocytes between the epithelium and connective tissue.

children as compared to adult. Although childhood OLP is very rare, early recognition is very important to make appropriate treatment and relieve symptoms of children[19,20].

OLP in this study was more common on buccal mucosa 15 (46.8%), followed by tongue 7 (21.8%), gingiva the 5 (15.6%) and floor of mouth 2 (9.3%), palate, skin and lips affected only 1 (3.1%) in this study. According to previously reported articles that, OLP were typically located bilaterally in buccal mucosa followed by the gingiva and the tongue. Multiple oral sites involvement was also common. Isolated lesions located on gingiva, palate, and mouth floor were rare. In present study only 1 (3.1%) patient had a skin combination of oral lesion. Thus we, as Oral Medicine experts should cautiously examine the skin of hands, feet and legs of patients with OLP, enquire regarding signs, symptoms of genital lesions and when relevant, referral to an appropriate specialist for further management[20]. Reticular form of OLP was the most common form noted in 21 (65.6%) patients in this study as compared to other types. Erosive form was observed in 2 (6.2%), atrophic form 3 (9.3%), Papular form 4 (12.5%) and Plaque like form 2 (6.2%). These findings are consistent with many previous studies that reticular form of OLP is most common prevalent type of OLP. One interesting patient reported in this study that she came for the diagnosis of submucous-fibrosis had a history of betel-quid user but after biopsy the findings were confirmed for OLP with combination of sub-mucous fibrosis. It is very important that careful examination is necessary for such patients for proper diagnosis of multiple lesions in the oral cavity.

In this study diagnostic procedure for OLP was done clinically but those patients had a multiple lesions biopsy was done for proper diagnosis and to validate the clinical diagnosis and exclude the other lesions and dysplasia. Clinical diagnosis for OLP is enough according to the reported works. The diagnosis of OLP reticular type can be made on the clinical findings alone because due to the presence of typical white striations on the sourounding of lesions. Reticular form of OLP mostly common form noted in this study as compare to other form, and can easily be diagnosed due to presence of typical interlacing white striae appearing bilaterally on the posterior buccal mucosa. Diagnosis of this common reticular form is very easy and clinical but difficulties come when there is superimposed candidal infection which masquerades the classic reticular pattern and in eliciting the erosive and erythematous forms of OLP. During the clinical diagnosis of OLP are made there are so many other red and white lesions come in mind to rule-out the other lesions in the oral cavity for provisional diagnosis like cheek chewing, licheniod contact lesions or drug reactions, leukoplakia, lupus erythematious, candidal infections, chronic ulcerative stomatitis etc. Using different groups of drugs for such diseases can cause a lichenoid drug reaction in oral cavity but this lichenoid drug reactions are usually unilateral in distribution, accompanied by a history of new drug intake[21].

As for treatment concerned for OLP pharmacological and non-pharmacological modalities are available. Pharmacological uses like Corticosteroids either topical or systemic have been the central components of management of OLP. But other modalities like Calcineurin inhibitors, Hydroxychloroquine, Retinoids, Dapsone, Mycophenolate Mofetil and Enoxaparin have contributed significantly toward treatment of the disease[22].

Non-pharmacological approaches like photochemotherapy with 8-Methoxypsoralen and long wave ultraviolet light (PUVA). Methoxypsoralen is given orally, followed by administration of 2 hours of UV radiation intra orally in the affected sites. It has been successfully used in the treatment of severe cases of OLP. Photodynamic therapy (PDT) is a technique that uses a photosensitizing compound like Methylene blue, activated at a specific wavelength of laser light, to destroy the targeted cell via strong oxidizers, which cause cellular damage, membrane lysis, and protein inactivation to treat the OLP. Nowadays LASER therapy

is being used for the treatment of OLP. In patients who are suffering from painful erosive OLP and are unresponsive to even topical super potent corticosteroids, surgical management using cryosurgery and different types of laser have also been tried[23].

In conclusion, the OLP is a very common Oral dermatosis and one of the most common mucosal lesions encountered by dental practitioners. It is very importent that the early proper diagnosis of the lesion and proper treatment be administered at the earliest. A proper understanding of the pathogenesis of the disease becomes important for providing the right treatment.

CONCLUSIONS

OLP is a persistent inflammatory immune-mediated disease affecting oral, skin, nails, scalp and genitals. Our data showed a low prevalence of OLP among this group of people in Quetta, Pakistan. Long-term follow-up is essential to monitor for symptomatic flare-ups and possible malignant transformation. Although the precancerous nature of OLP is still not clear, yet patients with this condition must carefully be evaluated and observed especially those patients with OLP who use tobacco and betel quid's which is known as causative factor for oral precancerous lesions like Leukoplakia, Erythroplakia, Sub-mucous fibrosis and Oral cancer. It's very important to highlight the needs and to educate all patients with this condition to discontinue their tobacco, alcohol and betel quid use.

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