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ORIGINAL STUDY

Cross Sectional Study of Clinical Findings in Patients With Oral Lichen Planus

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Abstract

Background: Oral lichen planus (OLP) is a chronic inflammatory condition affecting the oral mucosal surfaces of the mouth. It affects between 1% and 2% of the general population. It is a potentially malignant disease, according to the World Health Organization (WHO), with a worsening transformation prevalence of 0–1%. OLP's pathophysiology is believed to be strongly associated to microbial infection, mental problems, allergic responses, and immunodeficiency, despite the fact that its source is unknown.

The aim of study: To identify and explain the clinical manifestations, signs and symptoms of patients with oral lichen planus disease (OLP).

Materials and methods: The study included 50 OLP patients who were selected through clinical examination in this clinical investigation. Any individuals who were on medication, undergoing surgical procedures, pregnant, or suffering from autoimmune disorders like Rheumatoid arthritis (Ra) or Systemic lupus erythematosus (SLE) were excluded from this study. Standardized case sheets were used to record the demographics, medical, social, and pharmaceutical details of each patient. Before treatment, the site, size, and type of each patient's oral lichen planus lesions were evaluated.

Results: The participants in this study were divided into two groups: group 1 (25) patients with oral lichen planus OLP (17 females and 8 males) with a mean SD (47 ± 18.35) and group 2 (25) patients with OLP associated with skin lesions (14 females and 11 males) with a mean SD (45 ± 16.23) and an age range of (30–70) years old. Females accounted for (73.4%) of OLP patients and (54.2%) of OLP with skin lesions patients, whereas males accounted for 26.6 percent of OLP patients and 45.8% of OLP with skin lesions patients. The reticular form (73.4%) of OLP and (84.6%) of OLP with skin lesions patients was the most common clinical form of oral lichen planus, followed by the erosive form (26.6%) of OLP and (15.4%) of OLP with skin lesions patients. According to the clinical appearance of the lesions, the most usually afflicted region was the buccal mucosa (82% in OLP and 86% in patients with OLP and skin lesions), followed by the tongue (7%,12%) and gingiva (11%,2%) respectively.

Conclusion: In every group of the current study, the vast majority of patients with oral lichen planus pathology were females, and the reticular kind of oral lichen planus was the most prevalent clinical manifestation, preceded by the erosive kind. The buccal mucosa was the most usually affected area in OLP, followed by the gingiva and then the tongue, based on the clinical characteristics of the lesions]. Patients with the erosive form of lesion had severe discomfort, but others with the reticular type had mild to moderate symptoms. Each lesion resulted in complaints.

Keywords: Oral pathology, Clinical manifestations, OLP

1. Introduction

The mouth region is frequently affected by the common cutaneous condition lichen planus. Studies suggest that between 1% and 2% of the general population are affected by the chronic inflammatory mucocutaneous diseases, suggesting an

unusually high incidence. In most cases, women between the ages of 30–60 are affected by oral lichen planus (OLP) [1,2].

Since patients with OLP had lower levels of salivary antioxidants, it is possible that free radicals and the oxidative damage they cause contributed to the development of OLP lesions [3].

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Genetics, mental health, and infectious substances are all potential causes and/or triggers [4]. According to studies, all potential causes of OLP lesions have the possibility of influencing the amount of oxidative stress [5], which is supported by the fact that people with OLP have decreased salivary antioxidant activity [6].

The immune system is important in the development of OLP despite the fact its exact cause is still unclear. This may be explained by the involvement of auto-cytotoxic lymphocytes (T lymphocytes), which result in the death of epithelial cells and ultimately bring about chronic inflammation [7]. Those with oral lichen planus patients had reduced levels of salivary melatonin [8]. There has also been discussion regarding the potential significance of salivary matrix metalloproteinase (MMP1) levels in relation to oral lichen planus [9]. In cases with oral lichen planus, Epstein–Barr viruses have also been found to be significantly common [10].

Clinically, oral lichen planus (OLP) mostly affects people over the age of 40, while it can affect anyone, even young children. The majority of lesions have bilateral characteristics and frequently show a range of clinical symptoms. Against a background of redness, patterns of white or grey streaks may appear reticular or linear [11,12].

Among other manifestations, the lesions may take the shape of reticular, atrophic, erosive, or plaque-like lesions. These manifestations, which may occur separately or together, can cause a wide variety of clinical symptoms [13,14].

Alternately, a ring-like zone of redness (erythema) could be present over the surface of the injury (erosion), surrounded by a pale yellow surface (fibrinous exudate). The labial mucosa, gingiva, lips, buccal mucosa, tongue, soft palate, and other anatomy-related components of the oral cavity are frequently affected by oral lesions [15,16].

Oral lichen planus (OLP) is a condition marked by a variety of symptoms that can both improve and deteriorate with time. The reticular form of this illness might feel rough and uncomfortable, especially after eating hot or spicy food. However, the atrophic and erosive forms can result in burning that ranges in intensity from mild to severe [17].

However, a biopsy is required to confirm the diagnosis and rule out the occurrence of dysplasia and cancer. When the clinical symptoms show a high degree of distinctiveness, particularly when discrete skin lesions are visible, the diagnosis of OLP can be confirmed [18,19].

The incidence of raised p53 gene expression increased from lichen planus to dysplasia [20]. A dysplastic mucosal lesion eliminated with laser

surgery had no recurrence in a significant percentage of those with potentially malignant condition (PMD), which represented 62% of cases. In addition, the risk of a malignant transformation in PMD patients remained particularly low, with assessments measuring between 2% and 5% [21].

2. Materials and methods

Patients with OLP who provided informed consent participated in this clinical investigation after receiving an ethical approval. 25 OLP patients, aged 30 to 70, were divided into the two study groups.

Group 1 consisted of a total of (25) individuals diagnosed with oral lichen planus, comprising (17 females and 8 males). On the other hand, group 2 comprised (25) patients diagnosed with oral lichen planus accompanied by skin lesions, consisting of (14 females and 11 males). The study was conducted between January and September 2022 at the University of Baghdad, specifically at the college of Dentistry, Department of oral diagnosis.

Additionally, data was collected from al-Sader Medical city, department of dermatology in the al-Najaf al ashraf government. Prior to performing a clinical examination on a patient, a comprehensive case sheet was completed], encompassing pertinent details such as the patient's name, age, gender, occupation, medical history, current medications, family medical history, social history, and specific information regarding any oral lichen planus (OLP) lesions present, including their location, size, type, and associated signs and symptoms.

The structures within the oral cavity that are relevant to this discussion include the dorsal and ventral surfaces of the tongue, as well as its edges. Additionally, the hard and soft palate, gingiva, and alveolar ridges are of importance.

Beginning with the upper and lower labial mucosa and vestibule, we can also consider the labial commissures and buccal mucosa. The confirmation of the diagnosis was obtained through the utilisation of a biopsy procedure followed by a histopathological examination.

The researcher (dentists) recorded the age and gender of the patients, as well as the clinical manifestations of the oral lichen planus (OLP) lesion, specifically whether it presented as reticular or erosive. The condition known as oral lichen planus (OLP) can be categorised into two distinct types based on their clinical presentation.

The first type, referred to as reticular OLP, is characterised by the presence of a lace-like keratotic mucosal structure. The second type, known as erosive OLP, is characterised by the presence of a

pseudomembrane-covered ulceration accompanied by keratosis and erythema. The categorization of symptom severity was determined by evaluating the clinical presentation, classifying it as either mild, moderate, or severe. At the time of diagnosis, clinical observations were conducted to describe the site of involvement and the symptoms associated with it.

2.1. Ethical approval

The research was conducted in accordance with the ethical principles outlined in the Declaration of Helsinki. The study protocol, subject information, and permission form were reviewed and approved by a local ethics committee in accordance with document number 437, which also specified the date as December 27, 2021.

2.2. Statistical analysis

The statistical analysis was conducted using SPSS-26, which is the abbreviation for Statistical Packages for Social Sciences-version 26. The metrics employed in this study encompassed frequency, percentage, mean, standard deviation, and range. Statistical significance was considered when the P value was below 0.05.

3. Results

3.1. Demography

This study uses The fifty patients who took part in the study were split into two groups: group 1 had 25 patients with oral lichen planus (OLP) (17 females and 8 males), mean SD (47 ± 18.35), and group 2 had 25 patients with OLP along with skin lesions (14 females and 11 males), mean SD (45 ± 16.23), and ages ranging from 30 to 70 (Table 1).

According to gender, Of the 25 OLP patients seventeen (73.4%) were females and eight (26.6%) were males, Of the 25 OLP + Skin group patients fourteen (54.2%) were females and eleven (45.8%) were males (Table 2).

According to how the lesions presented clinically, patients with oral lichen planus were split into two

Table 1. Distribution of patients of OLP study groups according to the age.

Age of OLP (Years)	OLP group No. = 25	OLP + Skin group No. = 25	P-value
30–39	2	6	*P =
40–49	7	5	0.8322
50–59	10	8	No significant
60–69	6	6	
mean \pm SD	47 ± 18.35	45 ± 16.23	

Table 2. Distribution of the OLP study groups according to gender.

Study groups	Gender	N	percent	P-value
OLP NO. = 25	male	8	26.6%	0.0352 significant
	female	17	73.4%	
OLP + Skin NO. = 25	male	11	45.8%	0.0356 significant
	female	14	54.2%	

subgroups. Patients (17, 21) had the reticular form of OLP, while (8, 4) had the erosive form (Table 3).

It additionally revealed that there had been no significant relationship between patients with OLP and their age group. The study did not reveal statistically significant differences in the distribution of various types of oral lichen planus (OLP) between the genders, despite the fact that both males and females showed a greater incidence of the reticular type (73.4%, 84.6%) compared with the other forms.

The erosive form exhibited the second highest prevalence among females, accounting for 26.6% and 15.4% of cases. Among patients diagnosed with oral lichen planus (OLP), a significant proportion (68.3%) exhibited involvement at a single site. The tongue was the second most commonly affected location, accounting for 11% of cases, while the gingiva and buccal mucosa were observed in 7% and 82% of cases, respectively, across all clinical types.

The reticular form of oral lichen planus (OLP) was observed as the predominant clinical presentation in nearly all of the affected sites. In 94% of patients, the oral lesions exhibited a distribution that was nearly bilaterally symmetrical. The buccal mucosa and tongue, particularly the ventral side of the tongue, exhibited the highest frequency of damage when multiple sites were involved.

4. Discussion

The clinical manifestations of OLP have been described in various ways in the literature [22]. The diagnosis of oral lichen planus (OLP) cannot solely rely on clinical findings due to the potential resemblance of its clinical appearance to other disorders such as leukoplakia, lupus erythematosus, and squamous cell carcinoma. Hence, it is imperative to utilise histological diagnostics.

Table 3. Frequency distribution of patients groups according to the types of OLP.

Types of OLP	OLP group No. = 25	OLP + Skin group No. = 25	P-value
Reticular form	17 (73.4%)	21 (84.6%)	0.0374 significant
Erosive form	8 (26.6%)	4 (15.4%)	0.163
Total %	25(100%)	25(100%)	No significant

The profiles of our patients with OLP exhibited a high degree of consistency with those observed in previous studies [23,24].

According to prior examinations [25], which are consistent with the results of this study, the incidence of OLP has been seen to be higher among women. In accordance with earlier studies, it has been noted that this reticular clinical variant of oral lichen planus (OLP) is the kind that occurs the most frequently and typically displays more defined margins in comparison to other varieties [26], which is consistent with the outcomes of the current study.

This phenomenon can be attributed to the observation that individuals are less inclined to actively pursue therapeutic interventions as a result of the reticence associated with the a fore mentioned condition. The primary site of involvement in all types of oral lichen planus (OLP) was found to be the buccal mucosa, followed by the tongue. This observation has been consistent across various studies with substantial numbers of patients [27].

The oral involvement at several places was seen in a number of individuals, as had been previously reported in investigations [28]. Include Pemphigus Vulgaris (PV) on the list of uncomfortable oral diseases, and make a determined attempt to improve dental healthcare professionals' comprehension of the disorder throughout continuing education courses [29].

During the procedure of this examination, it was discovered that the locations most frequently impacted were the buccal mucosa and the tongue. Although the fact that discomfort in the oral cavity was frequent throughout our patients, it was found that those suffering from non-erosive or non-ulcerative oral lichen planus (OLP) frequently stated feeling uncomfortable in their mouths, which was in line with the results of earlier research [30].

The primary characteristic of OLP that was readily observable was its erosive quality. While alcohol, smoke, and hot, spicy food have been identified as potential co-factors in the exacerbation of symptoms in individuals with pre-existing oral lichen planus (OLP), it is worth noting that the reticular variant of OLP tends to exhibit the least symptomatic presentation. The results obtained from this study were in alignment with the findings reported by previous researchers [31].

5. Conclusion

In both study groups, the incidence of oral lichen planus disease was higher in females than in males. The most common clinical manifestation of oral lichen planus was reticular, followed by erosive.

Each clinical type's most common location was the buccal mucosa. The reticular type was more common in people aged 40 to 59, whereas the erosive form was more common in people aged 50 and beyond.

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