Association of oral and dermal lesions of lichen planus in patients referring to dermatology clinic of Razi Hospital, 2001

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\textbf{ABSTRACT}

\textit{Purpose:} Lichen planus (LP) is a common chronic immunologic inflammatory epidermal and mucocutaneous disorder involving skin, oral mucosa and both sometimes, the main cause of which is still unknown. Due to the importance and its prevalence, this study was carried out in order to assess the association of oral and dermal lesions in patients referring to Dermatology Clinic of Tehran Razi Hospital during summer of 2001.

\textit{Materials & Methods:} In this descriptive study, a total of 101 patients with individual involvement of LP in skin or mucosa were selected among 6510 patients referred to Tehran Razi Hospital-Dermatology Clinic. The selected cases were subjected to further and exact clinical examination along with interview, while in suspected lesions, the conducted histopathologic tests obtained by biopsy were used for the evaluation. A questionnaire was completed for each patient after taking history and physical examination, including history of systemic diseases, interacting medication, smoking habits, presence of oral and dermal lesions, the onset of mucosal and skin lesions and the treatment period, oral lesion’s signs and the patients complaint, involvement location, form, manner of distribution, oral lesion history as well as existence of amalgam restorations along side the lesion chi-square used to assess differences for variables.

\textit{Results:} The study revealed 34 percent association of oral and dermal lesions in the study population, while individual dermal lesion were observed in 61.1 percent of patients and individual oral lesions in 4.9 percent. The incidence of oral LP lesions was slightly higher in females in comparison to males (40.4 percent in females and 37.3 percent in males). About 20 percent of patients who gave history of oral LP, reported smoking cigarettes, while there was no case of pipe smoking or different smoking habits. Patients with dermal lichen planus reported a time between 1-6 months passing from their appearance, while the cases with oral lichen planus were unaware of the beginning time of lesions. The most reported symptom of oral lichen planus in the study population was the burning sensation, while the buccal mucosa was the most common site of involvement and reticular form was the high prevalent.

\textit{Conclusion:} High incidence of dermal and oral lichen planus association revealed throughout the study calls the attention for complete systemic examinations of the patients. As this study was carried out in the dermatology clinic, it seems that other studies in dental schools as well as throughout the public will be of necessity and importance to verify the results. According to this study, there was not a significant statistical relationship between LP and other variables.

\textit{Keywords:} Lichen planus, Oral lesions, Dermal lesions, Oral diseases.

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INTRODUCTION

Lichen planus (L.P) is a common inflammatory chronic mucocutaneous disease that appears in the mucosae, skin or as both of them simultaneously in the infected patients. The incidence of both dermal and oral symptoms of lichen planus is reported in 16-70 percent of infected patients in different studies. Prevalence of Lichen planus varies about 1-4 percent in different societies. The incidence in females was reported twice than in males. The primary symptoms of lichen planus appears after 40 years of age and the average of the infected patients age is about 50 years. The most prevalent symptoms of the disease are unfavorable roughness during oral mucosa palpation, pain and burning sensation especially after the use of special foods (e.g., spicy). The possibility of turning to aggressive forms of diseases in its course is about 1-3.5 percent declared in different studies.

The etiology of lichen planus is not clearly known up to now but factors like immunological disorders, emotional stress, genetic reasons, mechanical stimualtions, drug usage, hepatitis C virus infection, electrogalvanic current, hypertension and allergy are indicated to be related to the incidence of the disease. Some studies revealed the role of systemic diseases such as diabetes, chronic liver disease and alcoholic cirrhosis in relation to lichen planus.

Since, the etiology is still unknown, there is no definite treatment protocol for the purpose. The protocols used for are to control of the systemic diseases, replacement of metal fillings, stopping of interactive medication, topical steroid therapy, antimetabolite administration, antifungal-agents, retinoids, interferon use, cyclosporine, laser therapy and psoralen long wave UVA therapy (PUVA) with unavoidable side effects and problems.

In this study, association of oral and dermal lichen planus was investigated in patients with dermal lichen planus referred to the dermatology clinic of Tehran Razi hospital in 2001. Results could be useful in the examination of skin in patients with oral lichen planus as well as oral examination of patients with dermal lesions in dental and dermal clinics.

MATERIALS & METHODS

This descriptive study was conducted descriptively via observation, interview, clinical examinations and biopsy test results (histopatological diagnosis) in doubtful cases. The study samples were the referred patients with oral or dermal lichen planus according to the diagnosis made by the clinicians of the Razi hospital. They were selected by simple non-randomized method. The data were collected in a questionnaire for each case.

All patients referred to the dermatology clinic of Tehran Razi hospital who satisfied the study inclusion criteria were selected for the investigation. They were examined by professors and post-graduate students of the center to making the final diagnosis either through clinical examinations or by paraclinic tests. A questionnaire was used for each patient to record medical and dental history and clinical examination. In doubtful cases, the biopsy was used for the diagnosis.

After obtaining enough and fair number of patients, the collected data were inserted to a special statistical program (SPSS FOR WINDOWS VER. 10.0) and analyzed. The statistical analysis consisted of Pearson correlation test when comparing the variable’s relations with each other. The level of type one error ($\alpha$) used in the study was 0.05.

RESULTS

A total of 103 patients (52 females (50.5%) and 51 males (49.5%)) who fulfilled the study requirements were selected from 6510 persons referring to Dermatology clinic of Tehran-Razi Hospital in summer of 2001. The age range of the samples were between
7-82 years, while the age of males was 37.7±17.82 years and the age of females was 43.3±16.46 years. 63 patients (61.1 percent) of the patients had dermal lesions only, 5 patients (4.9 percent) had oral lichen planus only while 35 cases (34 percent) showed both dermal and oral symptoms of lichen planus. 

The study showed that 35 of 40 patients with oral lichen planus disorder had dermal symptoms simultaneously, showing the association of 88 percent among the study population. Also, 35 of 98 cases with dermal lesions had oral symptoms too which results to association estimate of 36 percent. In another word it can be stated that 88 percent of oral lichen planus patients had dermal lesions and 36 percent of dermal lichen planus cases had oral lesion at the same time, while the overall association of dermal and oral lesions of lichen planus was estimated to be 34 percent throughout the study.

**Table 1.** The frequency of lichen planus symptoms in the study population.

<table>
<thead>
<tr>
<th>Lesion type</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dermal</td>
<td>98</td>
<td>95.5%</td>
</tr>
<tr>
<td>Oral</td>
<td>40</td>
<td>38.9%</td>
</tr>
<tr>
<td>Dermal only</td>
<td>63</td>
<td>61.1%</td>
</tr>
<tr>
<td>Oral only</td>
<td>5</td>
<td>4.9%</td>
</tr>
<tr>
<td>Dermal and Oral</td>
<td>35</td>
<td>34%</td>
</tr>
</tbody>
</table>

**Table 2.** The frequency of lichen planus by age and gender.

<table>
<thead>
<tr>
<th>Age groups</th>
<th>Males</th>
<th>Females</th>
<th>Total</th>
<th>Percent age</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;10</td>
<td>2</td>
<td>2</td>
<td>4</td>
<td>.9%</td>
</tr>
<tr>
<td>10-19</td>
<td>6</td>
<td>6</td>
<td>12</td>
<td>11.7%</td>
</tr>
<tr>
<td>20-29</td>
<td>10</td>
<td>5</td>
<td>15</td>
<td>14.6%</td>
</tr>
<tr>
<td>30-39</td>
<td>11</td>
<td>7</td>
<td>18</td>
<td>17.5%</td>
</tr>
<tr>
<td>40-49</td>
<td>9</td>
<td>1</td>
<td>10</td>
<td>20.4%</td>
</tr>
<tr>
<td>50-59</td>
<td>3</td>
<td>15</td>
<td>18</td>
<td>17.5%</td>
</tr>
<tr>
<td>60-69</td>
<td>8</td>
<td>3</td>
<td>11</td>
<td>10.7%</td>
</tr>
<tr>
<td>&gt;69</td>
<td>2</td>
<td>4</td>
<td>6</td>
<td>5.8%</td>
</tr>
<tr>
<td>Total</td>
<td>51</td>
<td>52</td>
<td>103</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

10 patients(9.7 percent) indicated a positive hypertension history, of which, 9 patients were subjected to drug usage. In addition, 5 patients (12.5 percent) reported the same history from those with oral lichen planus lesions only and all of them were using drugs for the treatment. The statistical analysis revealed no significant correlation between hypertension or anti-hypertension drugs with the appearance of oral lichen planus disorder.

6 patients (5.8 percent) had diabetes were known case of diabetes melitus and 5 ones were under medication. This rate was about 5 percent in OLP patients were all used medication. No significant statistical correlation was found between positive diabetes involvement or anti-diabetic drug usage and oral lichen planus inflammation.

In this study, there was not positive history of using antifungal and anti-inflammatory drugs, hepatitis infection, connective tissue diseases as well as bone marrow transplantation.

12.6% of patients including 23.5% of males and 1.9% of females had smoking habits. 8 cases (20 percent) of OLP patients were smoking cigarettes, but no significant statistical correlation was found between smoking and oral lesions of LP. No patient stated pipe or other forms of smoking but cigarettes.

Considerable number of patients (76.9 percent) did not report a symptom as their complaint of their oral lesions. The most prevalent symptom was burning of the mouth and then the roughness feeling, stated by 17.5 percent and 7.5 percent of symptomatic patients respectively.

In order of frequency, the sites of oral mucosal involvement were as follow: cheek with 28.2 percent involvement, lip vermilion 10.7%, tongue sides 4.9%, lip intra-mucosa 2.9%, under tongue area 1.9%, mouth floor, soft tissue and gingiva with 1% involvement had the next ranks of oral lichen planus lesions. 14 patients (32.5 percent) had more than one site involvement of OLP. There was not any involvement of hard tissue or alveolar mucosae.

90% of the lesions were keratotic and the remaining 10 percent were nonkeratotic. Keratotic disorders had almost the same incidence in both sexes, while nonkeratotic lesions was 3 times more prevalent in female (75% and 25%).

Reticular lesions of keratotic kind had the
incidence of 61.1 percent, and papillary lesions with 25 percent appearance, circular and plaque-like with 5.7 percent and linear lesions had the prevalence of 2.8 percent. 75 percent of oral nonkeratotic lesions were of erosive and atrophic kind and the remaining 25 percent were of bullous kind lesions. 62 percent of the lesions were two-sided and 38 percent were one-sided.

No patient with dermal lesions reported the history of previous oral lichen planus disorder. 9 patients (22.5 percent) of oral lichen planus had amalgam filling. No significant statistical correlation was found between OLP incidence and amalgam restoration.

**DISCUSSION**

The association of dermal and oral lichen planus lesions was estimated about 34 percent in patients referred to Dermatology clinic of Tehran Razi Hospital, which is similar to the results indicated in Silverman investigation. But, this rate is different from the rates reported by Singh (1979) in his study, which is possibly due to different study samples and number of studied patients.

From 40 patients with OLP lesions, 88 percent had dermal LP lesions at the same time, while Singh reported this estimation about 80 percent and Eisen (1999) reported the association of dermal and oral lesions about 16 percent. Grosky (1996) reported the association of 20 percent in the study conducted in Israel. The difference in the results may be explained due to different study population, because the samples of our study were patients referring to dermatology clinic while their samples were those who referred to dental clinic, and it is clear that number of patients referring to dermatology clinic is less than dental clinics which plays a great role in the results obtained.

The most prevalent age group of the present study was 40-49 years old samples while this group in the study of Singh (1976) was 20-29 years showing 2 decades younger than the age group of our study. Also, this can be due to different society characteristics and the number of study samples. The most prevalent age group of OLP was 40-49 year old cases, which is different from the study of Khatefi (1996) indicating a decade younger group of 30-39 years old patients, because of different samples and number of patients.

The number of infected males and females was equal in the present study, as stated by Regezi. 2.5 percent of OLP patients reported the lesion in their first-degree relatives, which showed no statistical relationship between this history and the present OLP as reported by Silverman (1991). 12.5 percent of OLP patients had hypertension involvement at the same time, which showed no significant correlation between hypertension and OLP infection, as revealed by Grosky (1996), Silverman (1991) and Khatefi (1996) in their studies. 5 percent of the OLP patients had the history of diabetes, which showed no statistical correlation between two variables. Grosky (1996), Silverman (1991) and Khatefi (1996) reported the same result. No significant correlation was revealed between anti-hypertension, anti-diabetic drug usage as well as antibiotics and antifungal-agents use and also arthritis drug therapy and OLP infection in accordance with Silverman (1991) and Khatefi (1996). According to 20 percent OLP with smoking habit, the correlation between two variables was not significant such as the results stated in the studies of Grosky (1996) and Silverman (1991) and also Aghajani (1998). In spite of debates about the role of amalgam restorations in the etiology of OLP, the correlation was not significant (22.5 of patients had amalgam fillings near the site of lesions).

**CONCLUSIONS**

The range of the association of dermal and oral lichen planus revealed in the study was in the range of other conducted studies. OLP involvement had occurred during the first three decades of life considerably in our study, which show its incidence during younger ages in our society. The under 10
107 years aged group with 1.9 percent incidence and 40-49 age group with 20.4 percent incidence had the least and the most prevalence respectively. This suggests that OLP increases with age until 40-49 years of age and then decreases.

The prevalence of the disease was slightly higher in females rather than in males. It was shown that the number of males referred for diagnosis was higher than females while the females followed the treatment seriously. The role of amalgam restoration and smoking as risk factors of LP were not supported by the study.

REFERENCES


