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The Clinicopathological Analysis of Oral Lichen Planus

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Abstract

This observational study was carried out in the Department of Oral and Maxillofacial Surgery, Military Dental Centre Dhaka, Dhaka Cantonment to establish the nature of oral lichen planus, its clinical characteristics, distribution, and associated findings. Study subject were selected purposively irrespective of age and sex with considering some inclusion and exclusion criteria. Data sheet included all of the variables regarding to the study. Data were stored and analyzed using the Statistical Package for Social Scientist (SPSS, version 22, Chicago Inc.) and descriptive statistics to be presented with standard statistical tests (chi-square tests for parametric variables and unpaired Student's t-test). P (probability) and Z values were calculated. The results showed that the mean age was to be found 38.18. Female predominance was reported with male to female ratio of 1:1.5. Most common clinical presentation was reticular type (78%) followed by erosive (14%) and atrophic (8%). Buccal mucosa was the most commonly affected site (22%). Majority of the patients (48%) have noticed burning sensation always. In conclusion, it is difficult to attain any definite conclusion with the results obtained from the study because of this small sample size, short period of study and absence of review but the results can be taken as reference study for further prospective studies since recall systems of all patients with oral lichen planus have been recommended.

Keywords: Oral lichen planus, Erosive, Atrophic

1. Introduction

The stratified squamous epithelial tissues are affected by the chronic inflammatory illness known as oral lichen planus (OLP). In addition to the esophagus mucosa, larynx, and conjunctiva, lichen planus (LP) can also affect the skin, nails, scalp, and oral and genital mucous membranes [1]. Wilson was the first to describe it [2]. Among patients referred to oral medicine and oral pathology clinics, it is the most prevalent non-infectious oral mucosal illness [3]. Oral lichen planus is known to be a cell-mediated immune response, with both CD4 and CD8 lymphocytes making up the infiltrating cell population [4].

Commonly found on the extremities, lichen planus lesions manifest as polygonal, flat-topped, violaceous papules and plaque with white reticular scales and itchy sores on top. LP can impact several types of mucosa. The oral and vaginal mucosa are the most frequently affected, although other mucosal locations, including the conjunctiva, nasal mucosa, larynx, esophagus, urethra, scalp, nails, and anal mucosa, may also be impacted [3]. The disease has a sex bias that is roughly 2:1 in females to males and can last for many years [5]. While only 25% of individuals with oral lesions have skin involvement, 560 percent of patients with cutaneous lesions have mouth signs [6].

Although the exact origin of OLP is unknown, it is thought to be an aberrant T-cell-mediated immune response in which basal epithelial cells are perceived as alien due to modifications in their cell surface antigenicity [7]. However, it is currently unknown which particular antigens trigger T-cell activation.[8]Possible causes of OLP include dental amalgam and other metals, certain systemic drugs, HLA-Bw35 & HLA-B8, and infectious causes include hepatitis C, HSV, HIV, syphilis, amoebiasis, betel-quid, areca nut, stress & trauma, etc [9, 10, 11].

The buccal mucosa, tongue, and gingiva are the main areas affected by oral lichen planus, which manifests as white striations, white papules, white plaques, erythema, erosions, or blisters [12]. It typically manifests as a bilateral, symmetrical lesion or many lesions.Oral lichen planus (OLP) has been characterized in six distinct clinical forms: reticular, papular, plaque-like, erosive (ulcerated), atrophic (erythematous), and bullous13. However, there are two main types of cases that can be treated: the white forms, which include reticular, papular, and plaque-like, and the red forms, which include erosive (ulcerated), atrophic (erythematous), and bullous [13, 14].

Therefore, this study was designed to estimate the prevalence of oral lichen planus, its clinical characteristics, distribution, and associated findings among the armed forces personnel and their families in Military Dental Centre (MDC), Dhaka.

2. Materials and methods

Fifty consecutive patients who were diagnosed with oral lichen planus both clinically and histopathologically visited the Military Center Dhaka's oral and maxillofacial surgery department both indoors and out. Every patient underwent a comprehensive clinical examination and a complete history. The study respondents' name, age, gender, psychological state, pharmacological and systemic disease histories, and habitual history, including tobacco and betelnut chewing habits, were all gathered using a standardized structured data collection instrument. Clinical presentation and mucosal biopsy histological investigation were used to diagnose lichen planus. For every patient, the distribution of the oral lesions was noted. Details on the oral lesion's start and related skin lesions were gathered. The data collection sheet contained all of the information gathered from the history, clinical examination, and histopathology findings for further analysis. Purposively, study participants were chosen based on a set of inclusion and exclusion criteria, regardless of their age or sex. Every variable related to the investigation was included in the data sheet. The Statistical Package for Social Scientist (SPSS, version 22, Chicago Inc.) was used to store and analyze the data, and descriptive statistics were used to display the results along with standard statistical tests (chi-square tests for parametric variables and unpaired student's t-test).

3. Results

The mean age of the patients of the patients was 38.18 with SD of $\pm$ of 5.56 years ranging from 25 to 50 years. It shows that the percentage of the study patients by age found majority of the patients 16 (32.0%) were 36-40 years age group and followed by 12 (24.0%) were 31-35 years, 11 (22.0%) were 41-45 years, 06 (12.0%) were 46-50 years and 05 (10.0%) were 25-30 years age group. Fig 1 shows that out of 30 patients 60% were female and 40% were male and male female ratio was 1: 1.5.

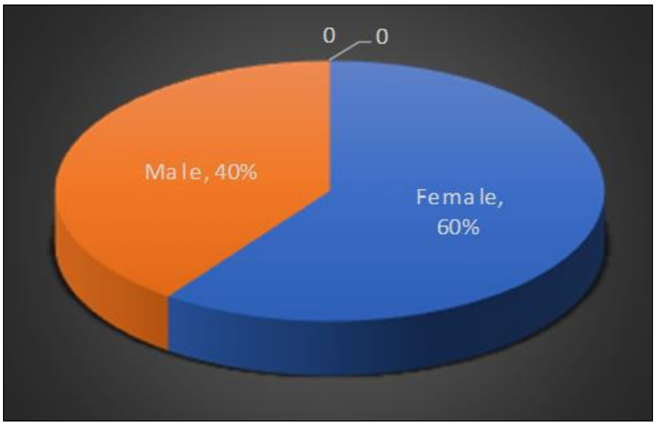

Fig 1: Distribution of patients by sex (n=50)

The result shows that the highest percentage of the lesion found in buccal mucosa and buccal mucosa & retromolar area were 11 (22%) respectively followed by buccal mucosa & floor of the mouth 06 (12%), buccal mucosa & tongue 05(10%), Floor of the mouth 04 (08%), gingiva 04 (08%), tongue & gingiva 03 (06%) and lip 03 (06%). It also shows the personal habit of the patients. Betel nut chewing was 11 (22%), smoking was 09 (18%), tobacco was 03 (06%), areca nut was 05 (10%), betel nut & areca nut were 07 (14%), betel nut & smoking were 05 (10%), tobacco & areca nut 04 (8%), smoking & areca nut 04 (8%). Fig 2 shows that bilateral white striae were 66% and unilateral were 34%.

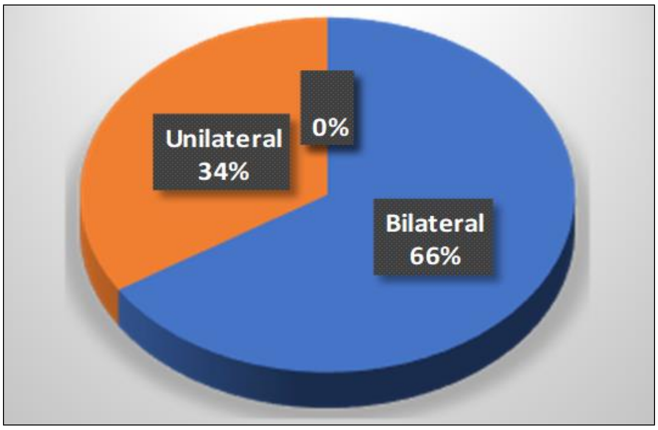

Fig 2: White striae of the patients (n=50)

The study shows that 28% patients had good oral hygiene, 52% patients had average oral hygiene & 20% patients had bad oral hygiene. Fig 3 shows the distribution of presenting complaints of the patients with most of the patients with burning sensation 24 (48%) followed by pain 17 (34%) and asymptomatic.

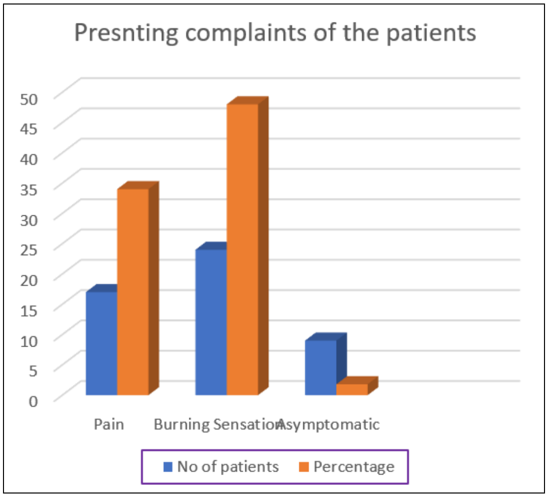

Fig 3: Distribution of patients according to presenting complaints (n=50)

Fig 4 shows the type of OLP with predominant reticular type 39 (78%) followed by erosive 14 (14%) and Atrophic 04 (08%).

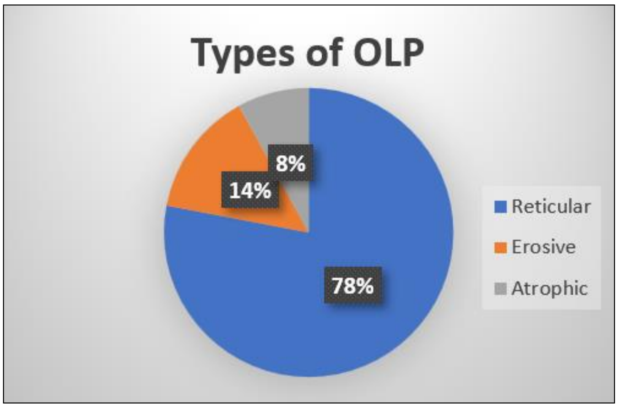

Fig 4: Distribution of patients according to the type of oral lichen planus (n=50)

4. Discussion

With a standard deviation of 5.56, the study's mean age was 38.18. The male to female ratio was 1:1.5, indicating a clear female predominance. This study's female predominance is consistent with several other publications [3, 15, 16]. Despite the rarity of pediatric OLP, early detection is crucial for optimal therapy and symptom relief in young children. The most common site of involvement—11 patients (22%), followed by the floor of the mouth, tongue, labial mucosa, gingiva, palate, and commissure retromolar area—was the buccal mucosa. This study's findings about the increased involvement of buccal mucosa in oral lichen planus are consistent with those of other investigations [3, 17, 18]. The buccal mucosa was the most frequent location in Eisen and othersfollowed by tongue, gingiva and lower lip [19]. Racial and geographic disparities as well as the study's small sample size could be the cause of the disparity. Involvement of several oral locations was also typical. The most prevalent numerous oral locations were gingivae and buccal mucosa. Rarely were isolated lesions found on the gingiva, palate, or mouth floor; instead, these areas typically had several oral sites damaged, such as the tongue or buccal mucosa. Usually, white striae are bilateral and symmetrical. It is comparable to this study as well [19]. The disparity might result from regional and racial disparities as well as the study's small sample size. It was also typical for several oral locations to be involved. The most prevalent multiple oral locations were buccal mucosa and gingivae. Rarely did isolated lesions occur on the gingiva, palate, or mouth floor; instead, these locations typically affected the tongue or buccal mucosa simultaneously in numerous oral sites. White striae are usually bilateral and symmetrical. This study is comparable to it as well [19].

Oral hygiene maintenance was found to be insufficient; only 28% of patients practiced good oral hygiene, and only 52% of patients maintained an average level of oral hygiene. During an epidemiologic investigation of oral cancer and precancerous lesions in Indian Kerala, India, Daftary discovered that Indian betel tobacco chewers had lesions that resembled oral lichen planus [20]. Among the survey participants' personal habits, it was found that 11 (22%), 09 (18%), 03 (06%), and 05 (10%) chewed betel nuts, smoked, and smoked tobacco. There were seven (14%) betel nut and areca nut, five (10%) betel nut and smoking, four (08%) tobacco and areca nut, and four (0.8%) smoking and areca nut. Other investigations confirmed these conclusions [8, 12, 18]. However, burning symptoms accounted for 48% of the patients, followed by pain (34%), and asymptomatic individuals (18%). OLP is characterized by pain or a burning feeling when eating, especially hot, spicy, and acidic meals. Reticular lesions accounted for 78% of the total lesions in this investigation. Retinal lesions were present in symptomatic patients. Of patients experiencing significant pain, 14% had erosive lesions. The least common kind was atrophic (08%). According to reports, the various circumstances made the patients' conditions worse. These include bad dental hygiene and personal habits. Patients in the study group had a history of eating betel and areca nuts and smoking tobacco, which exacerbates the illness as people age.

5. Conclusion

In conclusion, the current study clarified the clinical and epidemiological traits of OLP patients in a hospital population at the Military Dental Centre in Dhaka Cantonment. A small number of the features do not align with earlier research, but the majority do. Because of the small sample size, short study period, and lack of review, it is challenging to draw firm conclusions from the study's findings. However, since recall systems for all patients with oral lichen planus have been recommended, the results can be used as a reference for future prospective research.

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