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The Frequency and Clinical Long Term Behaviour of Oral Lichen Planus

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Abstract: *Oral lichen planus is a commonly occurring mucosal lesion and has multiple varied manifestations. While most lesions heal after a long persistent course, it also has the potential to turn malignant in a few patients. The progress of this entity can vary depending on the role of deleterious habits such as alcohol and tobacco.*

Keywords*: striae, lichenoid, malignant transformation, comorbidities.*

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I. Introduction

OLP presents as white striations, white papules, white plaques, erythema, erosions or blisters affecting predominantly the buccal mucosa, tongue and gingivae. It affects 1-2 % of the general adult population and is the most common non-infectious oral mucosal disease in patients referred to oral medicine and oral pathology clinics. (1)

Oral lichenoid lesions: Oral mucosal lichenoid lesions may follow the administration of a systemic drug, with a variable lag period. These lichenoid drug reactions (LDR) may be unilateral. Drugs that have been implicated include NSAIDs, ACE inhibitors & betablockers, placement of a dental restoration or provision of a denture.

II. Aims and objectives:

1. To compute the frequency of OLP.
2. To study the behaviour of OLP reg. recurrence after healing, malignant transformation.

Inclusion criteria: Patients who had small white striae as well as those with deleterious habits such as tobacco, alcohol habits and/or co-morbidities e.g.: diabetes, hypertension, as well as possible oral lichenoid lesions were included in the group being studied.

Exclusion: Patients with other pre-existing autoimmune (AI) conditions, eg: pemphigus, SLE were not incorporated. Those with other premalignancies such as oral submucous fibrosis (OSMF) were also not included.

III. Methodology

The study was conducted in the Department of Oral Medicine and Radiology, Pariyaram Dental College, Kannur, over a period of 3 years. 110 patients with oral lichen planus were chosen and studied with their details such as history, age, sex, clinical examination to ascertain the type, distribution of lesions, deleterious habits (use of tobacco, alcohol), comorbidities (diabetes, hypertension) as well as follow-up during the entire period of the study. Their individual stress levels were computed using the Social Readjustment Rating Scale (Holmes-Rahe). Statistical analysis to analyse the various associations between the different parameters was performed using SPSS version 13.

IV. Results

The total number of patients present and studied during the entire course period was 73 as 37 dropped out at various points in the timeline. Since the total number of patients who reported to the department during the 3-year period was 39529, the proportion of patients who attended the department with lesions of lichen planus was found to be 0.28%. 26 male patients (35.61%) and 47 female patients (64.38%) participated in the study. Their mean age was 43.45 (25-55 years) with 42.9 for males (SD 6.8yrs) and 43.8 for females (SD 6.9yrs).

8 (10.9%) participants were smokers, 2 (2.7%) consumed paan and 3 (4.1%) were alcohol consumers.1 patient (1.3%) had all three habits, 3 (4.1%) smoked as well as consumed alcohol, 56 (76.7%) reported never

having smoked, used paan or consumed alcohol. 28 (38.3%) subjects had multiple oral lesions. The buccal mucosa was the most commonly affected site (n=41; 56.1%), followed by both areas (n= 28; 38.3%) and the tongue (n=4; 5.4%). There were no gingival lesions.

44 patients (60.2%) had reticular lichen planus, 25 (34.2%) had erosive lesions and 4 (5.4%) had both types. Reticular lesions were found on the tongue in 4 patients (5.4%), on the buccal mucosa in 22 patients (30.1%), and on both areas in 18 patients (24.6%). Erosive lesions were seen on the buccal mucosa in 17 patients (23.2%), and on both the buccal mucosa and tongue in 18 patients (24.6%), none were solely on the tongue. Reticular and erosive lesions were seen on the buccal mucosa in 2 patients (2.7%) and both on the tongue and buccal mucosa in another 2 (2.7%) patients.

59 (80.8%) subjects had persisting lesions throughout the study, 11 (15%) underwent healing, the lesions recurred in 2 patients (2.7%) and one patient developed malignancy (1.36%). The malignancy occurred in a patient who had lesions on both the buccal mucosa and the tongue. Incidentally this patient had an erosive type of lichen planus.

13 patients reported to be experiencing mild stress, 47 had moderate levels of stress, 13 were found to have severe stress. In patients having moderate stress, the lesions healed in 8 (17.02%), persisted in 36 (76.5%), recurred in 2 (4.25%), and turned malignant in 1 (2.12%). The lesions healed in 11 subjects with mild to moderate stress and persisted in 13 with severe stress. It recurred in 2 with moderate stress.

The lesions healed in 7 patients with lesions on the buccal mucosa, 1 on the tongue and 3 in both areas. They persisted in 34 patients with lesions on the buccal mucosa, 1 on the tongue and 24 in both.

8 patients were diabetic, 5 were hypertensive, 4 had both diabetes mellitus (DM) and hypertension while 56 patients had no comorbidities. The lesions persisted in all patients with only hypertension (n=5, 100%), in half of those with both diabetes and hypertension (n=2, 50%) as well as in 45 (82%) with none. Interestingly, 1 patient with no comorbidities developed malignancy.

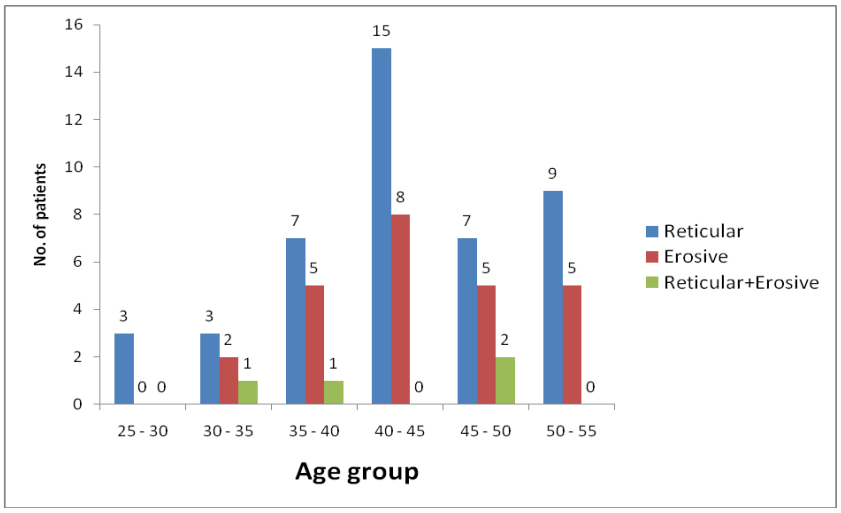

Fig.1: Age distribution.

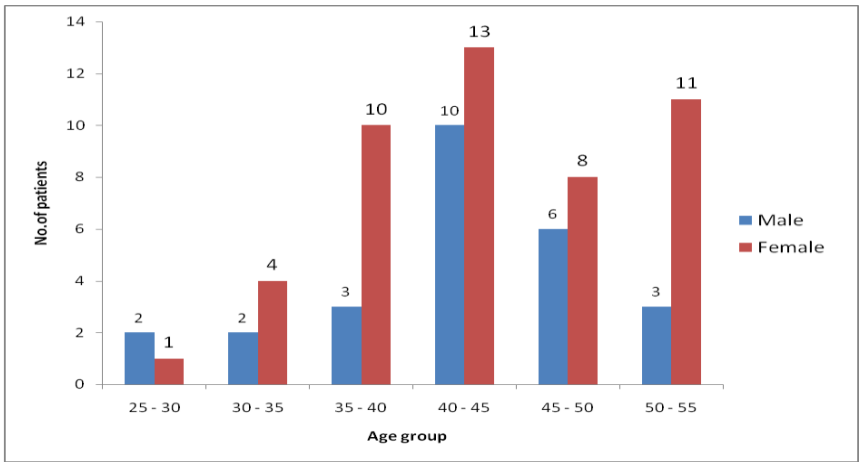

Fig.2: Age-sex distribution.

Mean age for males – 42.9 yrs (SD 6.8yrs), Mean age for females – 43.8 yrs (SD 6.9yrs)

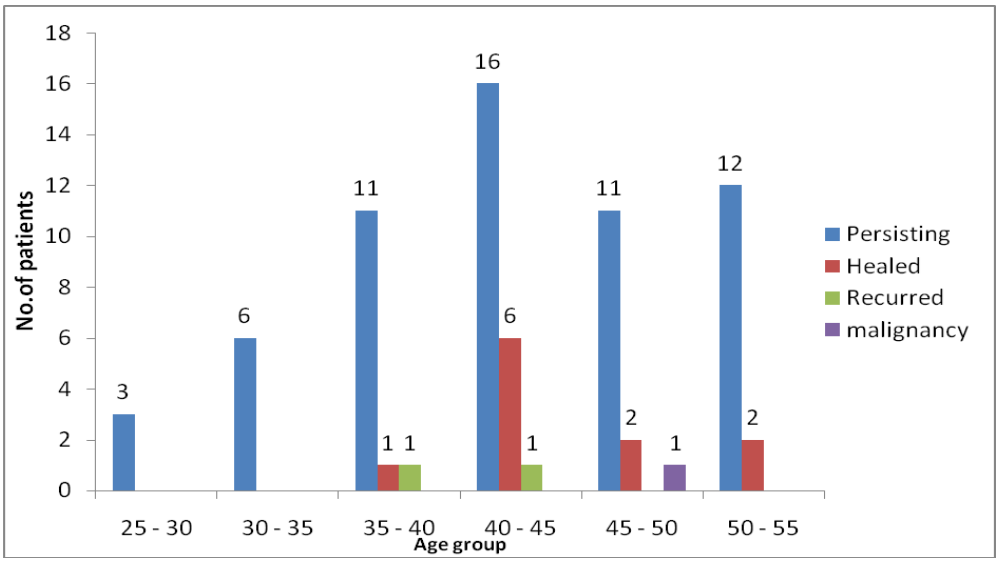

Fig.3: Age-wise distribution of course.

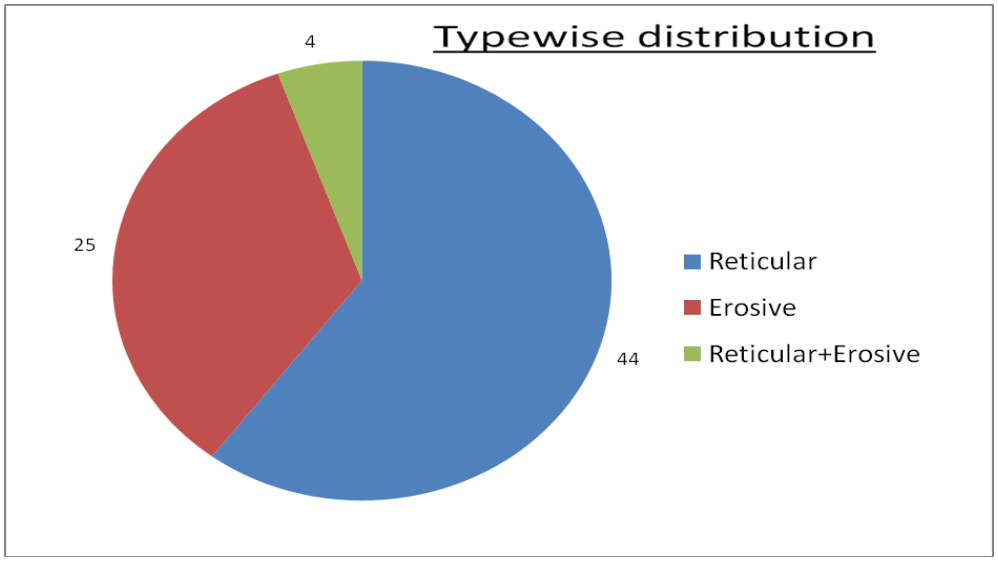

Fig.4: Type-wise distribution of lesions.

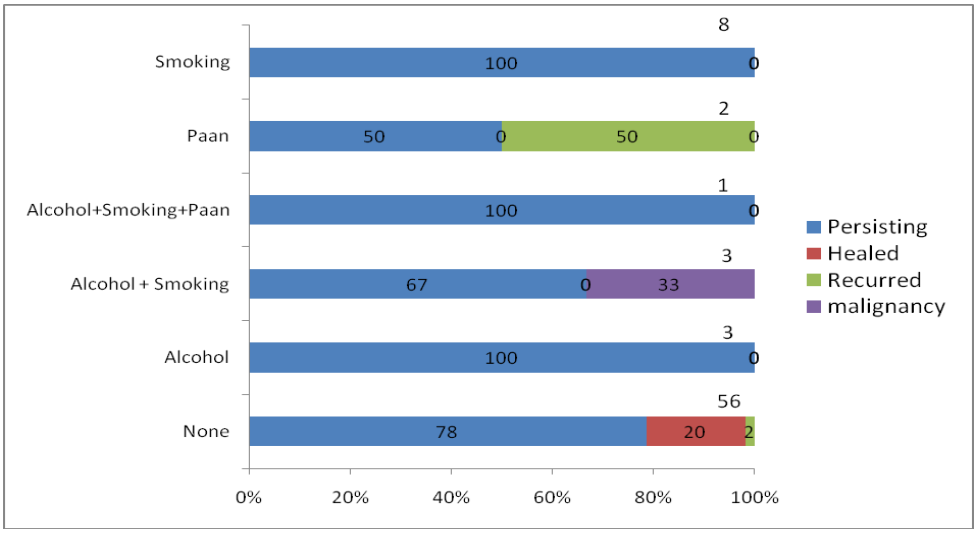

Fig.5: Habit-wise distribution of patients.

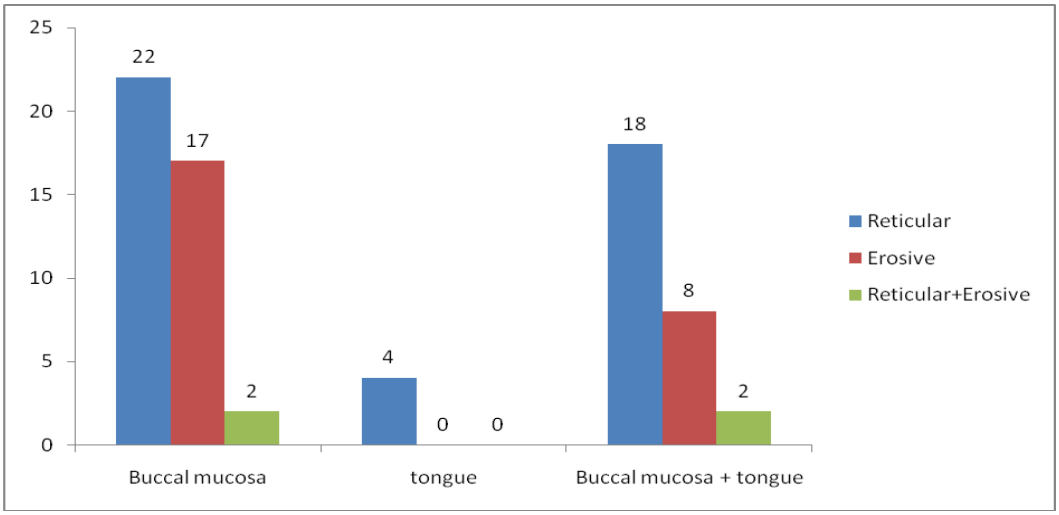

Fig.6: Site-wise distribution.

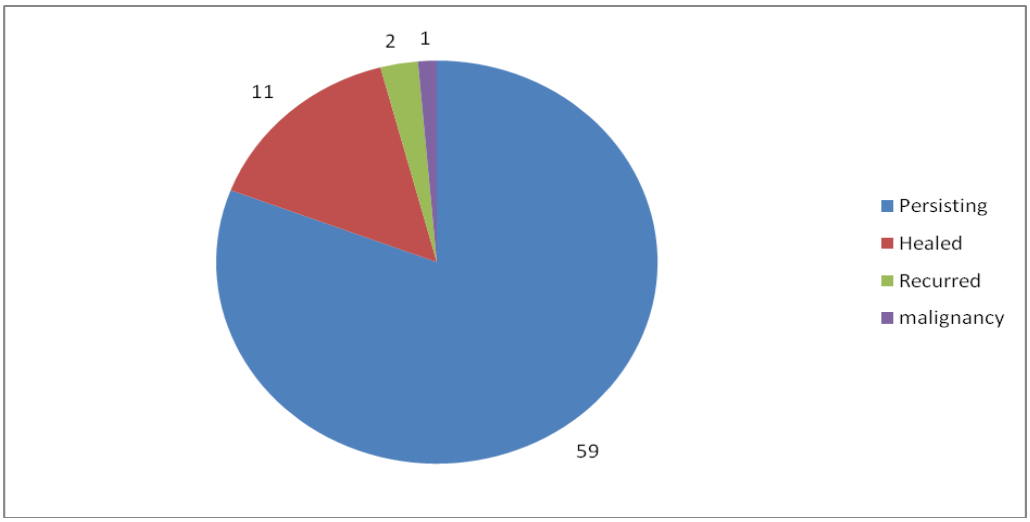

Fig.7: Course of the disease.

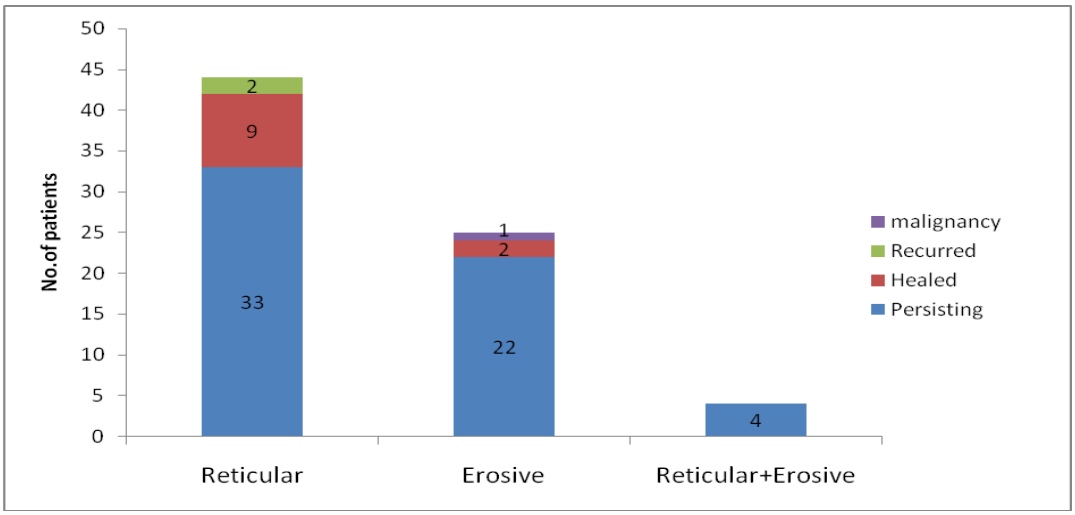

Fig.8: Course of the lesions vs. type.

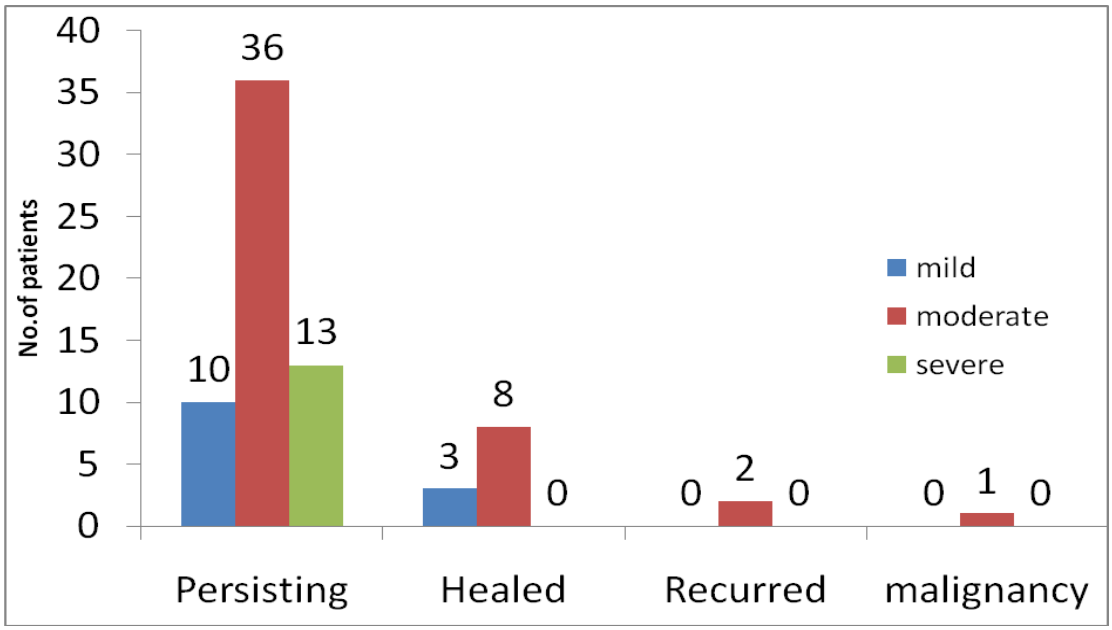

Fig.9: Effect of stress (mild, moderate or severe) on the course of the lesions.

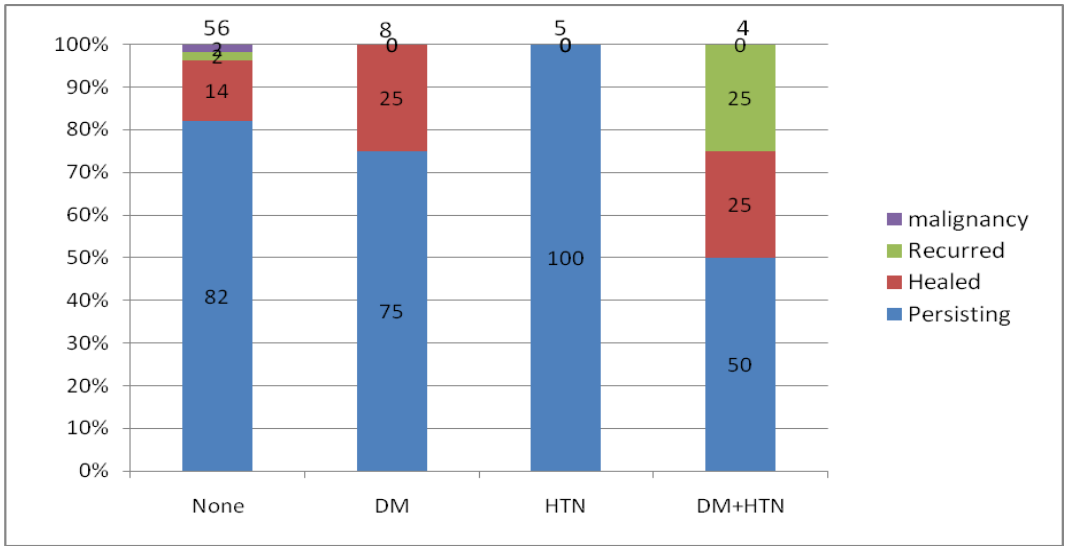

Fig.10: Course vs. comorbidities

V. Discussion

Oral lichen planus is a chronic mucocutaneous disorder of stratified squamous epithelium of uncertain aetiology that affects the oral and genital mucous membranes, skin, nails and scalp.[2] This entity is the oral mucosal counterpart of cutaneous lichen planus.[3] The terms are derived from Greek, *leichen* meaning tree moss and Latin, *planus* for flat.[4]

The exact incidence and prevalence of LP is unknown but it is particularly high in the Indian subcontinent and estimated to affect 2.6% of the population. [5]

Etiological factors for lichen planus include genetic background, drugs and dental materials, infectious agents, autoimmunity, bowel disease, food allergies, stress, trauma, diabetes, hypertension and miscellaneous associations.[2]

Many studies have conclusively proved that there is a clear link between stress and the initiation and progress of oral lichen planus. The former include depression, anxiety and traumatic events. [6] The link appears so prominently that furthermore, stress management and bereavement counselling were strongly advocated, when required.[7]

Several authors have also studied the presence of several systemic illnesses and comorbidities in patients with oral lichen planus and these need to be kept in mind during treatment. Liaising with the primary health care physicians helps to rule out these factors as well as keep them in check when present.[8]

Oral manifestations differ from cutaneous ones and is characterized by lesions consisting of white, grey, velvety, thread-like papules in linear, annular, or retiform arrangements forming classic lacy reticular patches, rings or streaks. They are asymptomatic, bilaterally symmetrical and can be found anywhere in the oral cavity but predominantly on the buccal mucosae, tongue, lips, gingivae, floor of the mouth and palate. They usually have six typical presentations: reticular, erosive, atrophic, plaque-like, papular and bullous. [2]

The differential diagnoses of oral lichen planus include cheek chewing/frictional keratosis, leukoplakia and lichenoid reactions. Lupus erythematous, pemphigus, mucus membrane pemphigoid, para neoplastic pemphigus, erythematous candidiasis, chronic ulcerative stomatitis and graft vs. host disease are also possible entities in this list.[3]

Diagnosis is by eliciting the history, typical clinical appearance in the oral lesions and when present, skin lesions as well. Biopsy is the definitive gold standard to distinguish it from other entities resembling it. Immunoglobulin and complement deposits are not routinely found in OLP. Fibrinogen and fibrin are at times found in a linear pattern in the basement membrane zone. [2]

The malignant potential of OLP continues to be a matter of debate.[9] Some reported cases initially diagnosed as OLP based on clinical and/or histological features were probably dyplastic that later progressed to frank squamous cell carcinomas.[10] The reported range of malignant transformation is 1-2%.[11] A study done in 1986 in Kerala gave a transformation rate of 0.4%.[12] The most recent study by Giuliani M. and Troiano G. showed an overall malignant transformation rate of 1.40% (1.37% for OLP and 2.43% for OLL). Further they found that factors such as female gender, red clinical forms and lesions on the tongue increased the risk slightly. Hence they proposed that oral lichen planus and oral lichenoid lesions be considered potentially malignant lesions. [13]

The principal aims of treatment of OLP are the resolution of painful symptoms and mucosal lesions as well as the reduction of the risk of oral cancer. The maintanence of oral hygiene and elimination of exacerbating factors may act as preventive measures. Treatment modalities include drug therapy (in the form of corticosteroids, immunosuppressive agents, retinoids and immunomodulators), surgery (excision, cryotherapy, CO2 laser and ND: YAG laser), psoralen with ultraviolet light A (PUVA) and laser.[2] The risk of malignant transformation warrants regular follow-up. [14]

VI. Conclusion

OLP is a very common oral mucosal lesion frequently encountered in dental clinics. It is also a potentially malignant lesion hence precise diagnosis and proper early treatment are essential for resolution of the lesions. The risk of malignant transformation in OLP is significant but not high. Erosive OLP in older patients with pain, tongue lesions and the use of tobacco and alcohol is linked with an increased likelihood of malignant transformation. Hence periodic long-term follow-up is mandatory to detect it.

Recommendations:
1. Regular follow-up, 3-6 times per year even after the lesions have healed, to detect recurrence and malignant transformation. Emphasis on habit cessation if any, at each visit.
2. Changes in appearance require more frequent follow-up and biopsy.
3. Examination of neck nodes indicated.
4. Medical consultation in case of comorbidities.
5. Support for stress.

Source of support: Nil
Conflict of interest: Nil

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