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Original Research Article

Clinicopathological Correlation in Diagnosis of Oral Lichen Planus with Emphasis on Importance of Communication between Clinician and Pathologist for Correct Diagnosis: An Original Research

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ABSTRACT

Aims: Evaluation of clinical and histopathological correlation between oral lichen planus using Discrepancy Index with emphasis on importance of communication between clinician and pathologist for proper diagnosis of oral lichen planus.
Methods and Material: 60 patients diagnosed as cases of oral lichen Planus using Modified WHO diagnostic criteria were selected from the department of oral Medicine and Radiology and were divided in two groups of 30 patients each. Incisional biopsy was done in all cases and specimen was sent for HPE. In group A provisional diagnosis and clinical findings were mentioned on specimen form where as in group B no such information was provided.
Results: In Group A out of 30 clinically diagnosed cases of OLP using Modified WHO diagnostic criteria 28 cases (93.33%) were Histopathologically consistent with OLP with a discrepancy index of 6.66% . In Group B out of 30 clinically diagnosed cases of OLP using Modified WHO diagnosed criteria only 18 cases (60%) were histopathologically consistent with OLP and discrepancy index was 40%.
Conclusions: The findings of the present study suggest that not only clinical and pathologic findings are important for formulation diagnosis of Oral Lichen Planus but also clarity in clinician-pathologist communication is equally important in order to reach the correct diagnosis

Keywords: Lichen planus, incisional biopsy, Histopathological examination, clinico-pathologist communication, Discrepancy index.

Key Messages: Diagnosis of OLP cannot be made merely clinically or histopathologically but correlation of both is very important for proper diagnosis. Moreover there should be clarity of communication between clinician and pathologist for correct diagnosis.

INTRODUCTION

Lichen planus is a chronic autoimmune, mucocutaneous disease which can affect the oral mucosa, skin, genital mucosa, scalp and nails. The disease has most often been reported in middle-aged patients more commonly in females than males. [1] Oral lichen planus is also seen in children although rare. [2,3]

Clinically, it can present as white striations (Wickham's striae), white papules, white plaque, erythema, erosion or blisters. The buccal mucosa, dorsum of tongue and gingiva are commonly affected. OLP usually presents as a symmetrical and bilateral lesion or multiple lesions. It can occur in six types of clinical variants namely reticular,

papular, plaque like, erosive, atrophic and bullous [4,5] and some variants can co-exist in the same patient. Burning sensation and sometimes pain usually accompany the erosive, atrophic or bullous type lesion.

There are various lesions that resemble lichen planus both clinically and histopathologically. Usually, these lesions are referred to as "lichenoid" lesions. Oral lichenoid lesions encompass several clinical settings: [6]

(1) Oral lichenoid contact lesions (OLCL) as a result of allergic contact stomatitis (delayed immune mediated hypersensitivity). They are seen in direct topographic relationship to dental restorative materials, most commonly amalgam, or other contacted agents, e.g., cinnamon.(2) Oral lichenoid drug reactions (OLDR), wherein oral and/or cutaneous lesions arise in temporal association with the taking of certain medications, e.g., oral hypoglycemic agents, angiotensin-converting enzyme inhibitors, and nonsteroidal anti-inflammatory agents; previously, such lesions were seen in conjunction with the widespread use of gold salts and penicillamine for the management of rheumatoid arthritis. (3) Oral lichenoid lesions of graft-versus-host disease (OLL-GVHD) in patients with acute, or more commonly, chronic graftversus- host disease (cGVHD). The lack of the universal diagnostic criteria for the diagnosis of oral lichen planus (OLP) can be made accountable for the current scepticism and controversies for diagnosis of olp. Van der Meij *et al.* have stressed for the need of diagnostic criteria to be universally adopted for its firm diagnosis. [7,8] A clinical and a histopathological definition of OLP was formulated by the WHO in 1978. [9] Later, in 2003, van der Meij and van der Waal, [10] proposed a modification in the WHO criteria, stating OLP diagnosis should be clinico-pathological. Results of Rad *et al.*' s [11] study in 2009 showed higher clinicopathologic correlation in the diagnosis of OLP based on the modified criteria of OLP (van der Meij 2003) compared with the 1978 criteria .

Oral Lichen Planus is therefore a syndrome diagnosis that is based on the presence of several clinical and histopathological criteria. Thus, the diagnostic approach is best described as a method of pattern recognition both clinically and histopathologically. [7] This indicates that diagnosis cannot be achieved solely based on the clinical or histopathological diagnosis. Confirmation of the diagnosis of OLP therefore has to be made after the correlation of the clinical and histopathological diagnoses. However, few data exist on the correlation between clinical and histopathological diagnoses of OLP.

The aim of the present study was therefore to establish a clinical and histopathological correlation in the diagnosis of OLP with emphasis on increased clarity in communication between clinician and pathologist for correct diagnosis of oral lichen planus.

MATERIALS AND METHODS

The study sample comprises of 60 patients who visited the Department of Oral Medicine and Radiology in which after complete clinical examination, diagnosis of OLP was made based on Modified WHO diagnostic Criteria as described in Table 1. After the patients had provided their consent form a detailed history was taken from each patient, and the exact location of all lesions were noted down in a case report form. A checklist consisting of demographic data, present illness history, previous medical history, drug history, dental restorations and clinical characteristics of the lesion were noted down.

All the 60 patients of OLP were divided into two groups Group A and Group B consisting of 30 patients each. All the procedures of biopsy were explained to the patient and a written consent was obtained from the patient. After performing all the baseline

investigations and under all aseptic precautions L A was administered, reticular areas of the lesion were selected as the most appropriate site of biopsy. The biopsy of erosive form of OLP was challenging. A biopsy specimen of predominantly erosive lesions was taken few millimeters away from the lesion so that the specimen's epithelium and connective tissue remains intact. A 3mm incisional biopsy was obtained [Figure 1].

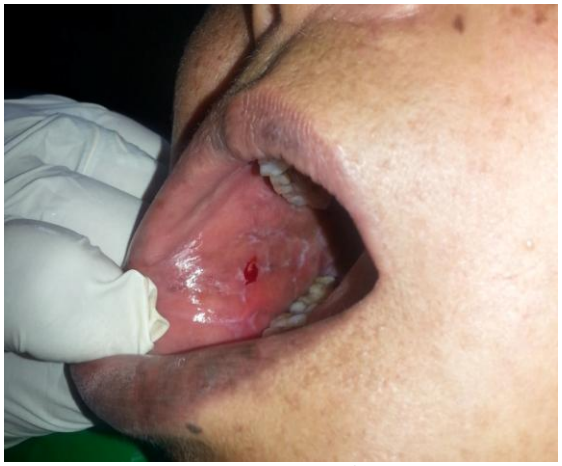


Figure 1 showing site of biopsy

Biopsy specimens were preserved in 10% buffered formalin solution. Hemostasis was achieved by placing sutures [Figure 2] and the specimen was sent for HPE on the same day.

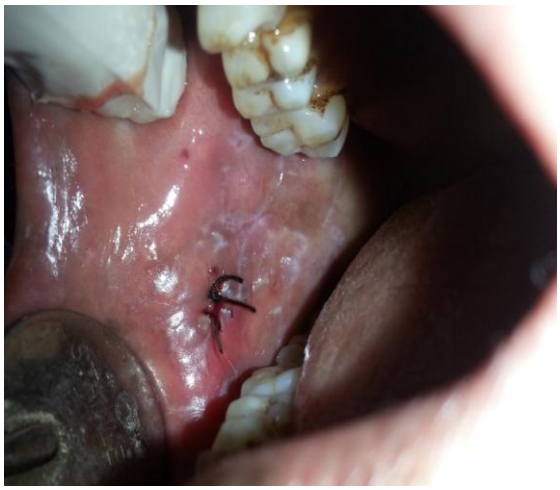


Figure 2: Biopsy site sutured for achieving heamostasis.

In Group A patients provisional diagnosis along with all the clinical findings were written on the HPE form which was sent along with the specimen to the pathology department which is under an experienced pathologist. where as in group B no such information was provided to the Pathologist i.e the pathologist was completely blinded about the patient. At the end histopathological reports were analyzed [Figure 3] and results were formulated.

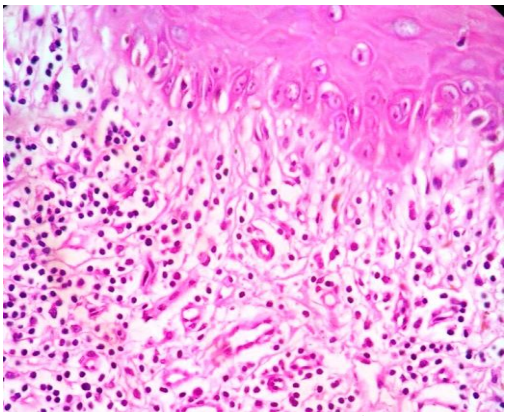


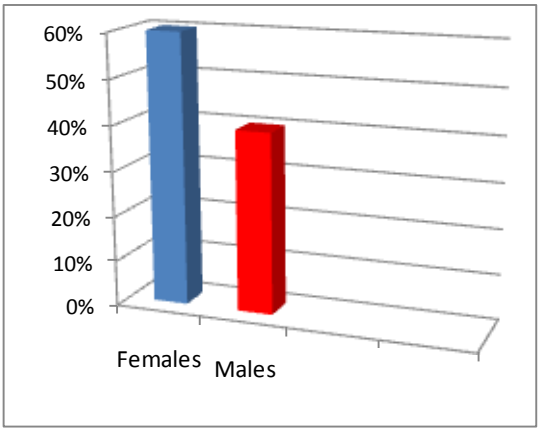
Figure 3: Histopathalogical picture of same patient

RESULTS

Statistical software SPSS [Version 20.0] and Microsoft Excel were used to carry out the statistical analysis of data. Data was analyzed by means of descriptive statistics viz, percentages and means. Graphically the data was presented by bar and chart diagrams. Discrepancy index was employed for comparison of findings in both groups.

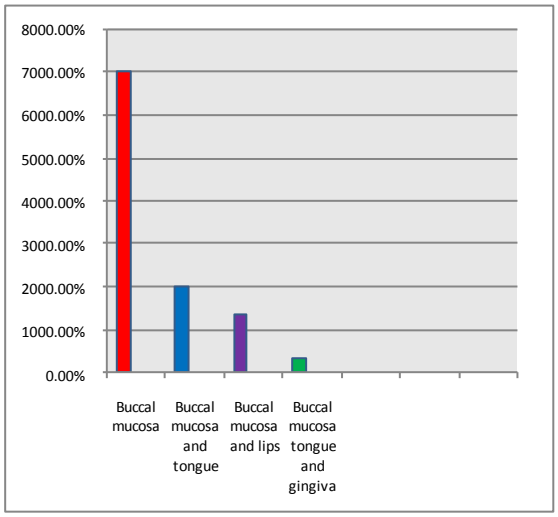
Discrepancy index [DI]: (the number of incompatible diagnosis/the number of total sample) x100

In our study Out of total 60 patients 36 were females and 24 were males [Graph1].



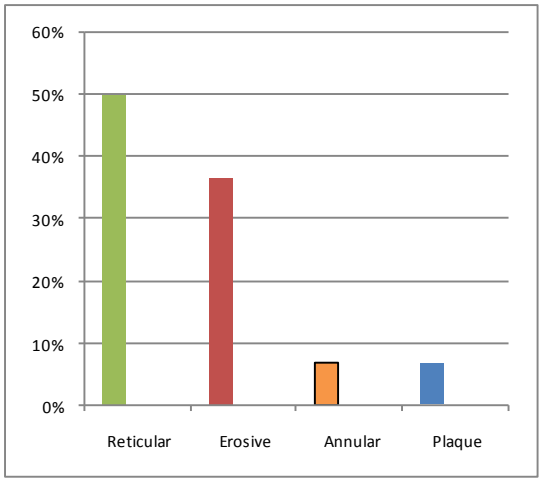
Graph 1: Gender distribution in patients of study sample

Buccal mucosa was affected most commonly in 70% of cases followed by buccal mucosa and Tongue in 20 % of cases. Buccal mucosa and lips were affected in 13.33 % of cases where as buccal mucosa, Tongue and Gingiva was affected in 3.33% of cases [Graph 2]



Graph 2: Sites of distribution in patients of study sample

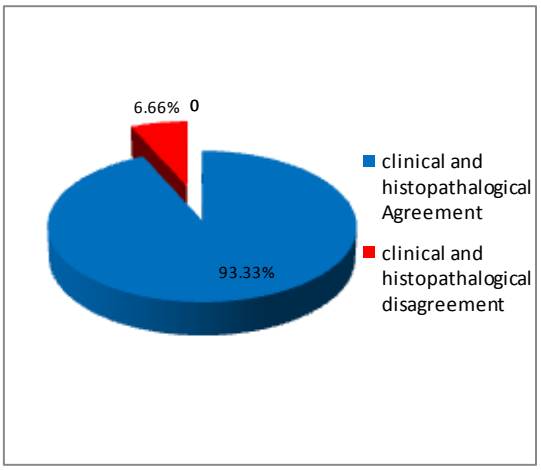
50% of cases were affected by Reticular Oral lichen Planus followed by erosive OLP in 36.66% of cases. Annular and plaque type was seen in 6.66% of case



Graph 3: Clinical Types of oral Lichen Planus in study sample

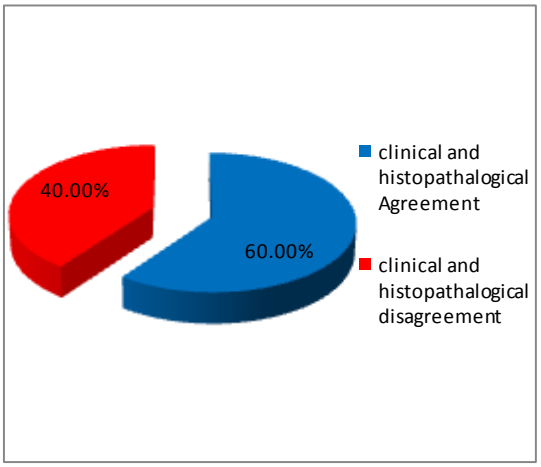
In Group A out of 30 clinically diagnosed cases of OLP using Modified WHO diagnostic criteria 28 cases [93.33%] were histopathologically consistent with OLP and Discrepancy index was 6.66%.

Discrepancy index [DI]: (the number of incompatible diagnosis/the number of total sample) x100



Graph 4: Discrepancy Index in Group A

In Group B out of 30 clinically diagnosed cases of OLP using Modified WHO diagnostic criteria only 18 cases (60%) were histopathologically consistent with OLP and Discrepancy Index was 40% [Graph 5].



Graph 5: Discrepancy Index in Group B

DISCUSSION

To establish and confirm OLP and OLL diagnosis by using methods such as clinical examination and histopathological analysis, which are available in everyday clinical practice and among wider population of patients, sometimes represents a diagnostic challenge. Earlier reports have shown that while clinical diagnosis depends on a clinician interpretation, [12,13] histopathological

diagnosis is strictly dependent on a pathologist interpretation as well, [14,15] but also the choice of biopsy area, [16] clinical severity of the disease, activity or remission of the disease, and the clinical type of OLP (reticular lesions are considered easier for histopathological confirmation). [17,18] Pathologists' lack of information on clinical features and distribution of lesions could also influence their judgment. [12,15,19] Having in mind these parameters, which could affect the final histopathologic interpretation, the results of our study could partially be explained by possible interobserver bias as histopathological diagnosis was done by different pathologists. This should be taken into account in the future prospective studies. Therefore, due to many variables affecting diagnosis, histopathological finding is insufficiently reproducible. [14,15]

In our study Modified WHO criteria of 2003 was used for clinical diagnosis of OLP.

Table I. Modified World Health Organization diagnostic criteria of OLP and OLL [10]

Clinical Criteria

Presence of bilateral, more or less symmetrical lesions

Presence of a lacelike network of slightly raised gray-white lines (reticular pattern)

Erosive, atrophic, bullous and plaque-type lesions are accepted only as a subtype in the presence of reticular lesions elsewhere in the oral mucosa

In all other lesions that resemble OLP but do not complete the aforementioned criteria, the term "clinically compatible with" should be used

Histopathologic Criteria

Presence of a well-defined bandlike zone of cellular infiltration that is confined to the superficial part of the connective tissue, consisting mainly of lymphocytes

Signs of liquefaction degeneration in the basal cell layer

Absence of epithelial dysplasia

When the histopathologic features are less obvious, the term "histopathologically compatible with" should be used

Final diagnosis OLP or OLL

To achieve a final diagnosis, clinical as well as histopathologic criteria should be included

OLP; A diagnosis of OLP requires fulfillment of both clinical and histopathologic criteria

OLL; The term OLL will be used under the following

Conditions:

1. Clinically typical of OLP but histopathologically only compatible with OLP
2. Histopathologically typical of OLP but clinically only compatible with OLP
3. Clinically compatible with OLP and histopathologically compatible with OLP

Results of Rad *et al.*'s [11] study in 2009 showed higher clinicopathologic correlation in the diagnosis of OLP based on the modified criteria of OLP so in our study we used Modified WHO diagnostic clinical criteria for clinical diagnoses of OLP and we found that In Group A out of 30 clinically diagnosed cases of OLP using Modified WHO criteria 28 cases 93.33% were Histopathologically consistent with OLP and Discrepancy index was 6.66% [Graph 4]. In Group B out of 30 clinically diagnosed cases of OLP using Modified WHO criteria only 18 cases (60%) were Histopathologically consistent with OLP and Discrepancy Index was 40% (graph 5).

The appropriate selection of the biopsy site has a vital role in the accurate diagnosis of OLP. Previous studies have reported that reticular lesions were histopathologically diagnosed as OLP much more consistently than erythematous and erosive lesions. [20,21] so in our study we have taken biopsy from reticular portion of the lesion and in cases of erosive OLP sample was taken few millimeters away from an erosion so that

the specimen's epithelium and connective tissue remains intact.

In a few instances the histopathological features may not be diagnostic as OLP evolves through a cycle of exacerbation and quiescence. Biopsy in any condition helps to differentiate whether the lesion is of inflammatory origin or consists of underlying atypical features in the epithelium. It is always possible that more than one disease process can coexist together. Hence it is prudent to take multiple biopsies. [22] To confirm the clinical diagnosis of OLP, histopathological assessment has to be performed and the final diagnosis has to be achieved only after the correlation of clinical and histopathological diagnosis. Instead of so many precautions, comparison of the results of clinical and histological assessment of OLP in GROUP B shows lack of correlation and a very high Discrepancy Index. These findings are compatible with a similar study [22] although the clinicopathologic correlation in our investigation is apparently stronger than the aforementioned study. Factors that may have contributed to the lack of correlation include pathologist's unawareness of clinical information, lack of clinician-pathologist communication and failure to biopsy properly.

In the final stage of the present study in group A when clinical characteristics and provisional diagnosis were known to pathologist a substantial increase in clinicopathologic correlation was observed.

CONCLUSION

It seems that in order to achieve higher clinicopathologic correlation in the diagnosis of OLP, besides using modified WHO definition of OLP and OLL, it is not only important to include clinical and histopathologic findings together with other relevant factors such as history of systemic diseases, history of drug use, cutaneous lesions, and dental health but communication between clinician and pathologist is equally important. In conclusion, the findings of the present study emphasize the importance of considering both clinical and pathologic findings in the formulation of a final diagnosis. It also insists on the need for increased clarity in clinician-pathologist communication in order to reach the correct diagnosis.

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