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Original Research Article

Correlation of clinical and histopathological diagnoses of oral mucosal lesions at tertiary care centre: a retrospective study

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ABSTRACT

Background: The objective of the study was to study the correlation between clinical and histopathological diagnoses of oral lesions.
Methods: Data of all patients attending the department of Dermatology KEM Hospital, Mumbai with oral mucosal lesions who underwent biopsy for histopathological examination in a duration of one year was included in this retrospective study. Their clinical and histopathological diagnoses were correlated and data was analysed.
Results: A data of total of 164 patients was included in study. Out of the clinically diagnosed, histopathological correlation was found to be 66.66% for oral leucoplakia, 81.25% for lichen planus, 72% for squamous cell carcinoma, 88% for pemphigus vulgaris and 75% for submucosal fibrosis. Overall correlation found was 75.60%.
Conclusions: Histopathological examination of oral mucosal lesion is very important to arrive at the accurate diagnosis and to plan definitive treatment. Histopathological examination of oral mucosal lesions must be done routinely because wide variety of conditions present with similar morphologic features and can be the initial signs of many skin disorders.

Keywords: Oral mucosal lesions, Clinical histopathological correlation, Dermatology

INTRODUCTION

Oral mucosal lesions (OML) are a serious global problem as these affect the quality of life of people.[1] Prevalence of OML in out-patient department in western Maharashtra was approximately 39.1%.[2] Dermatological diseases not only involve the skin and its appendages but may also involve the oral cavity. Hence examination of oral cavity is important for a dermatologist. The lesions of oral cavity in dermatological disorders may precede before skin manifestation or may be the sole manifestation of these disorders or may occur simultaneously with skin lesions.[3] OML may present with variety of symptoms like burning sensation, soreness, intolerance to spicy food, difficulty in swallowing, ulceration, decreased mouth opening which affects day to day activities.

Various groups of dermatological diseases associated with OML are pre-malignant lesions like leukoplakia, erythroplakia, oral submucosal fibrosis (SMF), actinic cheilitis; malignant oral squamous cell carcinoma (SCC); vesiculobullous disorders; lichen planus and other lichenoid disorders; infections: bacterial, viral and fungal; collagen vascular diseases; vasculitis like behcets disease; erythema multiforme; recurrent aphthous stomatitis; miscellaneous.

Diagnosing OML becomes difficult because of the wide variety of conditions that may present with similar looking lesions.

Thus, forming appropriate differentials and histopathology is necessary in order to reach the definite diagnosis.[4]

Rationale

OML may be pre-malignant. Therefore, secondary prevention in the form of early detection and timely treatment is the key. Many times, OML are the initial sign of the skin diseases. Therefore, it is necessary to diagnose at the earliest and prevent further progression of the disease. Despite all above, OML are often neglected as they go unnoticed or take time to become symptomatic.

Due to similar morphological appearance of the lesions, histopathology is the gold standard. And in this study, we will find out the correlation between clinical and histopathological diagnoses.

There is wide discrepancy on clinic-histopathological correlation of different types of OML, ranging from 17% to 50%.[5,6] Recently a study showed prevalence of 39% of OML in OPD patients in western Maharashtra, which is very high as compare to other areas.

So, a study was conducted in our tertiary center of Mumbai to study the correlation of clinical and histopathological diagnosis of different OML.

Aim

Aim of the study was to correlation between clinical and histopathological diagnoses.

METHODS

This is a retrospective study of all patients with OML who underwent biopsy over a period of 1 year from January 2018 to December 2018 in KEM hospital, Mumbai.

Inclusion criteria

All biopsied cases of OML that have presented to department of dermatology of KEM hospital, Mumbai.

Exclusion criteria

Patients with OML that did not consent for biopsy and incomplete data available at the time of analysis.

Records of biopsy conducted in the Department of Dermatology of KEM Hospital over one year were reviewed. All cases of OML with detail clinical and histopathological data were selected. Histopathology slides of all archived tissues were retrieved for review.

164 patients were included in the study.

Statistical analysis

All responses were tabulated by the investigator using Microsoft-Excel Software. Graphical representation was made wherever necessary. Concordance index and discrepancy index were calculated as follows.[7,8]

$$Concordance\ Index\ (CI)\ of\ a\ specific\ OML\ (\%) = Number\ of\ patients\ clinically\ diagnosed\ that\ corelated\ with\ HPE \times 100\ /\ Number\ of\ patients\ clinically\ diagnosed\ as\ that\ specific\ OML$$

$$Discrepancy\ Index\ (DI)\ of\ a\ specific\ OML\ (\%) = Number\ of\ patients\ clinically\ diagnosed\ that\ did\ not\ corelate\ with\ HPE \times 100\ /\ Number\ of\ patients\ clinically\ diagnosed\ as\ that\ specific\ OML$$

RESULTS

Out of the total 164 patients,104 (63.41%) were males and 60 (36.58%) were females. Maximum number of patients were in the age group of 35 to 50 years.

Table 1: Clinicohistopathological correlation of different OML.

Condition	Clinical diagnosis	Percentage	No of cases correlated with HPE diagnosis	Concordance index	No of cases not correlated with HPE	Discrepancy index
Lichen planus	64	39.02	52	81.25	12	18.75
Leucoplakia	33	20.12	22	66.66	11	33.33
Leukokeratosis	5	03.4	3	60	02	40
SMF	12	07.31	9	75	03	25
Pemphigus vulgaris	25	15.24	22	88	03	12
Mucocele	3	01.82	3	100	0	0
Warts	2	01.21	0	0	2	100
Melanocytic nevus	2	01.21	1	50	1	50
LE	2	01.21	1	50	1	50
Lichenoid reaction	5	03.04	3	60	2	40
SCC	11	06.70	8	72.72	3	27.27
Total	164	-	124	75.60	40	24.39

Table 2: Histopathological diagnosis of non-correlating cases.

Clinical diagnosis	Total non corelating cases	Leukoplakia	LP	Leukokeratosis	Lichenoid reaction	PV	SCC
Lichen planus	12	07	-	02	02	01	-
leucoplakia	11	-	06	02	-	-	03
leukokeratosis	02	02	-	-	-	-	-
SMF	03	-	-	01	-	-	02
Pemphigus vulgaris	03	-	03	-	-	-	-
Warts	02	02	-	-	-	-	-
Melanocytic nevus	01	-	-	-	01	-	-
LE	01	-	-	-	-	-	-
Lichenoid reaction	02	-	02	-	-	-	-
SCC	03	02	01	-	-	-	-
Total	40	-	-	-	-	-	-

Table 3: Sex distribution of histopathologically proven cases.

S. no.	Clinical diagnoses	HPE corelated	Male		Female	
			No. of cases	Percentage	No. of cases	Percentage
1	Lichen planus	52	20	38.4	32	61.5
2	Leucoplakia	22	12	54.5	10	45.4
3	Leukokeratosis	3	2	66.6	1	33.3
4	SMF	9	5	55.5	4	44.4
5	Pemphigus vulgaris	22	9	40.9	13	59.1
6	Mucocele	3	2	66.6	1	33.3
7	Melanocytic nevus	1	0	0	1	100
8	LE	1	0	0	1	100
9	Lichenoid reaction	3	2	66.6	1	33.3
10	SCC	8	6	75	2	25

Clinically, 64 cases (39.02%) were lichen planus, 33 cases (20.12%) were leukoplakia, 5 (3.04%) leukokeratosis, 12 cases (7.31%) were SMF, 25 cases (15.24%) were pemphigus vulgaris, 3 (1.8%) were mucocele, 2 (1.21%) cases each of mucosal warts, melanocytic nevus and lupus erythematosus, 5 (3.04%) cases of lichenoid reaction and 11 (6.7%) cases of squamous cell carcinoma.

Out of clinically diagnosed, histopathologically correlated were 52 cases (81.25%) lichen planus, 22 cases (66.66%) were leukoplakia, 3 cases (60%) leuko-keratosis, 9 cases (75%) were SMF, 22 cases (88%) were pemphigus vulgaris, 3 (100) were mucocele, 1 (50%) cases each of melanocytic nevus and lupus erythematosus, 3 (60%) cases of lichenoid reaction and 8 (72.72%) cases of squamous cell carcinoma.

The clinical and histopathological diagnoses were in correlation for 124 cases out of 162 cases. The overall percentage of correlation was 75.60%.

12 cases with clinical diagnosis of lichen planus were diagnosed as 7 cases of leukoplakia, 2 cases of leukokeratosis, 2 cases of lichenoid reaction and 1 case of pemphigus vulgaris. 11 cases with clinical diagnosis of leukoplakia were diagnosed as 6 cases of lichen planus, 2 cases of leukokeratosis, 3 cases of SCC. 2 cases with clinical diagnosis of leukokeratosis were diagnosed as leukoplakia. 3 cases with clinical diagnosis of SMF were diagnosed as 1 cases of leukokeratosis and 2 cases of SCC. 3 cases of pemphigus vulgaris were diagnosed as lichen planus. 3 cases of SCC were diagnosed as 2 cases of leukoplakia and 1 case of lichen planus.

DISCUSSION

Lichen planus was the most common condition seen in our study, which is in contrast to study done by Abidullah et al.[8] Histopathological correlation was found to be 81.25%. In this study, the commonest site of oral lichen planus was buccal mucosa.

Leukoplakia was the second common condition in our study. Majority of the patients were male. Maximum were guttkha chewers followed by smoking with buccal mucosa being most common site. There is wide discrepancy in histopathological correlation in different study.

Table 4: Comparison with similar studies with respect to lichen planus.

Lichen planus	CI (%)	Males (%)	Females (%)
Abidullah et al[8]	73	60	40
Bukhari et al[9]	43	43.3	56.6
Mravak-Stipetić et al[10]	68.47	-	-
Our Study	81.25	38.4	61.5

Table 5: Comparison with similar studies with respect to leukoplakia.

Leukoplakia	CI (%)
Mohd abidullah et al[8]	92
Bukhari et al[9]	40
Mutalik et al[11]	76.52
Bokor-Bratić et al[5]	92.3
Our study	66.66

Table 6: Comparison with similar studies with respect to pemphigus vulgaris.

Pemphigus vulgaris	CI (%)	Males (%)	Females (%)
Bukhari et al[9]	80	40	60
Shamin et al[12]	100	40	60
Our study	88	40.9	59.1

Pemphigus vulgaris was the 3rd most common entity in our study. The reason for lesser correlation could be most of the patients biopsied were without skin lesion and intact blisters are difficult to find in oral cavity.

SMF more common in males with 75% histopathological correlation. The discrepancy in the clinical and histopathological diagnosis could be attributed to other lesions presenting with same complains, that is difficulty in opening mouth.[13] most of the patient were beetle nut chewer. Squamous cell carcinoma with 72% correlation with males more commonly affected than females. Majority of them were addicted to tobacco chewing or smoking or both. To our knowledge, there are no similar studies with respect to oral SMF and oral SCC. The most common site for all the above conditions was buccal mucosa in our study.

This was retrospective study including only biopsied patient, many of them who did not consent for the biopsy or lost data were not accountable. Also, this study has no statistically significant data with respect to all other OML. Therefore, more detailed prospective randomised studies with a larger sample sizes are recommended to further establish the clinic-histopathological correlation in OML.

CONCLUSION

The overall percentage of clinical diagnoses correlating with histopathological diagnosis was 75.60% with discrepancy index of 24.39%, hence histopathology is very important to arrive at the accurate diagnosis and to plan definitive treatment. Histopathological examination of OML must be done routinely because wide variety of conditions present with similar morphologic features and can be the initial signs of many skin disorders. At times histopathological examination is nonconclusive but clinical suspicion is very strong, so repeat biopsy is advisable. Also, few of the OML can be potentially malignant in nature, in such cases multiple site biopsy is better.

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REFERENCES

1. Suliman NM, Johannessen AC, Ali RW, Salman H, Åstrøm AN. Influence of oral mucosal lesions and oral symptoms on oral health related quality of life in dermatological patients: a cross sectional study in Sudan. BMC Oral Health. 2012;12(1):19.
2. Kamble KA, Guddad SS, Nayak AG, Suragimath A, Sanade AR. Prevalence of oral mucosal lesions in Western Maharashtra: A prospective study. J Indian Acad Oral Med Radiol. 2017;29(4):282.
3. Chouhan C, Rao P, Khullar R. To Determine Clinical and Histopathological Correlation of Oral Ulcers in Common Oral Mucocutaneous Disorders. Int J Med Res Prof. 2016;2(6):260-4.
4. Gambino A, Carbone M, Broccoletti R, Carcieri P, Conrotto D, Carrozzo M, et al. A report on the clinical-pathological correlations of 788 gingival lesion. Medicina Oral Patologia Oral Y Cirugia Bucal. 2017;22(6):e686.
5. Bokor-Bratić M, Vučković N, Mirković S. Correlation between clinical and histopathologic diagnoses of potentially malignant oral lesions. Arch Oncol. 2004;12(3):145-7.
6. Patel KJ, De Silva HL, Tong DC, Love RM. Concordance between clinical and histopathologic diagnoses of oral mucosal lesions. J Oral Maxillofacial Surg. 2011;69(1):125-33.
7. Seifi S, Hoseini SR, Bijani A. Evaluation of clinical versus pathological difference in 232 cases with oral lesion. Caspian J Internal Med. 2010;1(1):31-5.
8. Abidullah M, Raghunath V, Karpe T, Akifuddin S, Imran S, Dhurjati VN, et al. Clinicopathologic correlation of white, non scrapable oral mucosal

surface lesions: A study of 100 cases. J Clin Diagnos Res: JCDR. 2016;10(2):ZC38.
9. Bukhari SS, Gupta V, Dogra DR, Goswami KC, Ahmed A, Rather MI. Clinicohistopathological correlation of oral lesions. Int J Contemporary Med Res. 2017;4(6):1398-401.
10. Mravak-Stipetić M, Lončar-Brzak B, Bakale-Hodak I, Sabol I, Seiwerth S, Majstorović M, et al. Clinicopathologic correlation of oral lichen planus and oral lichenoid lesions: a preliminary study. The Scientific World J. 2014;2014.
11. Mutalik S, Mutalik VS, Pai KM, Naikmasur VG, Phaik KS. Oral Leukoplakia–Is Biopsy at the Initial Appointment a Must?. J Clin Diagnos Res. 2014;8(8):ZC04.
12. Shamin T, Varghese V Ipe, Shameena PM, Sudha S. Oral pemphigus vulgaris: Clinicopathological study of 20 cases. Indian J Pathol Microbiol. 2007;50:498-501.
13. Kumar KK, Saraswathi TR, Ranganathan K, Devi MU, Elizabeth J. Oral submucous fibrosis: A clinico-histopathological study in Chennai. Indian J Dental Res. 2007;18(3):106-11.

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