Clinicohistopathological Correlation of Oral Lesions

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ABSTRACT

Introduction: Oral health is important for the quality of life of all individuals. Aims: Our objective was to assess the correlation of oral lesions and cutaneous lesions and to reduce the chances of existing lack of clinicopathological correlation in the diagnostic assessment of oral lesions and further improve the management of oral lesions.

Material and Methods: 80 patients with persistent oral lesions alone or oral lesions along with cutaneous lesions were taken up for study. Their detailed history, examination was recorded, relevant investigations were done. Based on clinical history and examination a clinical diagnosis was made. Oral biopsies were taken and sent for histopathological examination. All the findings were recorded and analyzed.

Results: Maximum patients had oral lichen planus (37.5%) followed by leukoplakia (20%). Lupus erythematosus was present in 12.5% of patients. Pemphigus vulgaris patients formed 12.5% of patients and oral melanocytic naevi were seen in 3.75% of patients.

Conclusion: In overall published work till date on clinicohistopathologic correlation of different types of oral lesions the overall discrepancy ranges from 17% to 42%. There is a need of strict clinical and histopathological criterias for diagnosis.

Keywords: Clinicohistopathological, Oral Lesions

INTRODUCTION

Oral health is important for the quality of life of all individuals. Oral lesions can cause discomfort or pain that interferes with mastication, swallowing, speech and can produce symptoms such as halitosis, xerostomia, and oral dysaesthesia, which interfere with daily social activities.[6] Oral lesions are usually seen in local as well as generalized dermatological disorders like lichen planus, lupus erythematosus, candidiasis and various autoimmune bullous disorders and oral lesions may be the early signs of systemic diseases as well. Various oral lesions can be conveniently grouped into following categories[8]: Leukoplakic lesions, Leukoplakic and / or Erythemic lesions, Ulcerative, Vesicular and Bullous oral lesions,Pigmented lesions,Papillary and verrucous lesions.

In overall published work till date on clinicohistopathologic correlation of different types of oral lesions the overall discrepancy ranges from 17% to 42%. It should be noted that discrepancy in clinicopathologic correlation of oral lesions depends upon different factors like, selecting the most appropriate area for histopathology, total sample of patients as the percentage and type of patients vary between different studies. The discrepancy also depends upon subjective variation of the clinician and a histopathologist. There is a need of strict clinical and histopathological criterias for diagnosis. Keeping in view the above facts this study was conducted in a tertiary care hospital, to assess the correlation of oral lesions and cutaneous lesions and to reduce the chances of existing lack of clinicopathological correlation in the diagnostic assessment of oral lesions and further improve the management of oral lesions.

MATERIAL AND METHODS

This study was carried out for a period of one year in the Post Graduate Department of Dermatology in a tertiary care hospital. The study included 80 patients with persistent oral lesions alone or oral lesions along with cutaneous lesions who visited Post Graduate Department of Dermatology, Venereology and Leprology, and also patients referred from Department of Otolaryngologyof this hospital over a period of one year. A detailed history regarding the onset, duration, progression, number including cutaneous, other mucous membrane, systemic complaints, past history, personal history and drug history was recorded in the proforma.

A thorough general physical examination was done. Also local lesions, skin, other mucous membranes, nails and scalp were thoroughly examined and relevant details were recorded in the proforma.

Provisional clinical diagnosis of particular dermatosis was made after independent opinion of two senior consultants in the Post Graduate Department of Dermatology, which was based on the history and clinical examination findings.

Biopsy was taken from the representative area of the oral cavity which was sent for histopathological examination.

Hemoglobin, CT, BT, Blood sugar (Fasting) was carried out in the hospital laboratory, Other relevant investigations were done wherever required.

Provisional clinical diagnosis of various oral lesions was correlated with histopathological findings of the oral mucosal biopsies and data thus collected was analysed.

STATISTICAL ANALYSIS

Analysis was conducted using statistical software Epi-info version 6.0 and SPSS for windows. Quantitative variables were reported as mean, median and standard deviation and inferences were drawn.

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RESULTS

The majority of patients (37.5%) were diagnosed as oral lichen planus. Amongst these 43.3% were males and 56.6% were females. Leukoplakia constituted 20% of oral lesions (males:females 60%:40%). 12.5% of patients had lupus erythematosus, and majority of these were females (70%). Pemphigus vulgaris group formed 12.5% of patients (males:females 60%:40%). 3.75% of patients had oral melanocytic naevi. Amongst these, 66.6% were males and 33.3% were females. Oral squamous cell carcinoma was seen in 3.75% of patients and all of them were males. 3.75% of patients had mucous cysts (33.3% males and 66.6% females). Intra oral wart was found in 1.25% patients (Table 1 and figures1 and 2).

Maximum number of patients with oral lichen planus, lupus erythematosus and pemphigus vulgaris were in age range of 31-45 years and maximum leukoplakia patients were in age range of 46-60 years (table 2). Mean age of patients of oral lichen planus was 39.6 years (median age of 32.5 years with a standard deviation of 14.62). Oral lupus erythematosus patients had mean age of 38 years, (median age of 35.5 years and standard deviation of 13.40). Leukoplakia patients had a mean age of 53.70 years, (median age of 50 years and standard deviation of 14.26). Patients with pemphigus vulgaris had a mean age of 38 years, (median age of 36.5 years and standard deviation of 11.73).

Discussion

80 patients were enrolled in this study. Lichen planus was the most common condition seen in our study, with an incidence of 37.5%. In a study by Bouquot JE et al[5], leukoplakia was seen to be the commonest oral lesion, which is in contrast to our study. This difference can be attributed to the study design and the sample size as that was a population based study and

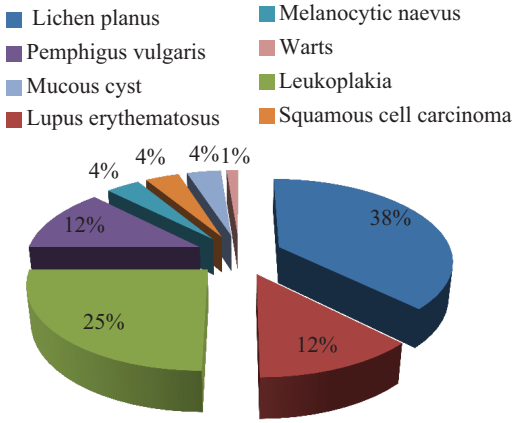

Figure-1: Percentage of patients with different type of oral lesions

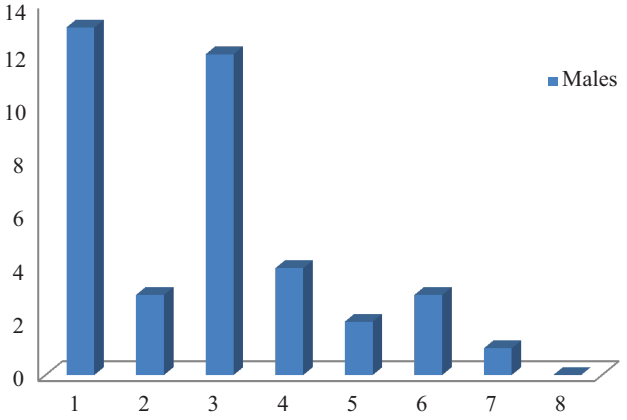

Figure-2: Sex distribution of patients with oral lesions

S. No	Oral lesion	No. of patients	%age	Sex		Percentage	
				Males	Females	Males	Females
1.	Lichen planus	30	37.5%	13	17	43.3%	56.6%
2.	Lupus erythematosus	10	12.5%	3	7	30%	70%
3.	Leukoplakia	20	25%	12	8	60%	40%
4.	Pemphigus vulgaris	10	12.5%	4	6	40%	60%
5.	Melanocytic naevus	3	3.75%	2	1	66.6%	33.3%
6.	Squamous cell carcinoma	3	3.75%	3	0	100%	0%
7.	Mucous cyst	3	3.75%	1	2	33.3%	66.6%
8.	Warts	1	1.25%	0	1	0%	100%
9.	Total	80	100%	48	32	60%	40%

Table-1: Table showing the number of patients of different types of oral lesions and their sex distribution.

S. No	Age group in years	No of patients							
		OLP	LE	LKP	PV	OMN	OSCC	Mu.C	OW
1.	15-30	10	2	1	3	0	0	2	1
2.	31-45	13	5	5	4	1	1	1	0
3.	46-60	4	2	7	3	1	2	0	0
4.	61-75	2	1	5	0	1	0	0	0
5.	76-90	1	0	2	0	0	0	0	0
6.	Mean age (years)	39.36	38.70	53.70	38.60	-	-	-	-
7.	S.D	14.62	13.40	14.26	11.73	-	-	-	-
8.	Median	32.5	35.5	50	36.5	-	-	-	-

OLP: Oral lichen planus; LE: Lupus erythematosus; LKP: Leukoplakia; PV: Pemphigus vulgaris; OMN: Oral melanocytic naevi; OSCC: Oral squamous cell carcinoma; Mu.C: Mucous cyst; OW: Oral wart

Table-2: Table showing age distribution of patients among patients with different types of oral lesions.

ours was hospital based study, and their sample size was very large compared to ours. In our study, we saw that oral lichen planus was more common in females. Gorsky et al[10] and Juan Seoane et al[12] also found a similar pattern in their studies. However the mean age of patients in our study was lower than previously reported by another study by Garg VK et al.[9]This might indicate that these diseases start early in life. All these patients were studied for morphological type of oral lichen planus. Atrophic-erosive with or without associated reticular lesions was seen to be more common (56.6%) than exclusive reticular lesions (43.3%). This was in contrast with study conducted by Juan Seoane et al[12], in which the reticular pattern was more common. The reason for this may be that erosions cause pain in the oral cavity and compel the patient to seek medical consultation. In our study the most common site of involvement in the oral cavity was buccal mucosa (seen in 70% of patients). Various other studies[2,10,17] also reported buccal mucosa as the predominant site involved in oral lichen planus. Histopathological findings observed in our study were atrophic epithelium with parakeratosis, hydropic degeneration of basal layer and band like lymphocytic infiltrate in the subepithelium. Histopathological correlation was also studied. It was found that in only 43% of oral lichen planus patients, histopathological diagnosis correlated with clinical diagnosis and in 57% patients there was no histopathological correlation. A study by Van der Meij et al[21] reported the discrepancy between clinical and histopathological diagnosis in upto 42% of patients clinically, and in 50% of patients histopathologically. As reported above there is lack of consensus over the clinical and histopathological correlation of oral lesions. So there is a need for more strict histopathological and clinical diagnostic criteria for the diagnosis of oral lesions. A higher percentage of discrepancy in our study may be due to the difference in selecting the most appropriate area for histopathology.

Oral lesions are seen with varying frequency in SLE (9% to 45%) and in localized cutaneous disease (3% to 20%) as reported in various studies.[11,14] Oral lupus erythematosus constituted 12.5% of our patients. Among them 70% were females and 30% males (female to male ratio of 2.3:1) and 60% were having localized disease and 40% were having systemic lupus erythematosus. The median age of involvement was 35.5 years. A study by Lourenco Silvia V et al[14] has also reported increased incidence of oral lupus erythematosus in adult females (female to male ratio of 2.8:1).The commonest site involved in our study was buccal mucosa and some patients had more than one site involvement which was in agreement with results of Lourenco Silvia V et al.[14] Majority of lesions in our patients were of discoid type (30%) which was in agreement with another study by Jonsson R,Heyden et al.[11] The key histopathological findings reported in one study[14] were epithelial hyperkeratosis with atrophy of rete pegs, superficial and deep mononuclear inflammatory infiltrate, edema in the lamina propria, liquefactive degeneration of basal epithelial cells and predominantly patchy PAS-positive subepithelial deposits. In our study the histopathological findings were hyperkeratosis, acanthosis, squamatisation of basal layer and vacuolar degeneration of basal layer and lymphomononuclear infiltrate in subepithelium but no atrophy of the epithelium was reported. Histopathological correlation was only found in 30% of patients.

A study[16] stated that it is very difficult to differentiate between oral lupus erythematosus, oral lichen planus and leukoplakia even when established histopathological criteria are used so this may be the cause for observed lack of clinicohistopathological correlation.

Leukoplakia constituted 20% of our patients (male: female=1.5:1). The mean age of these patients was 53. 3 years. Majority of patients (60%) were smokers. In 50% of patients, buccal mucosa was the predominant site involved. These findings were comparable with another study by Bornstein et al[4] in which there was male preponderance with peak prevalence in age group of 50-59 years. Majority of patients in that study were also smokers and buccal mucosa was the most frequent localization in the oral cavity. As smoking causes chronic irritation of the oral mucosa due to heat and possibly due to many byproducts from cigarette smoke, so there is an increased incidence of leukoplakia in smokers. The histopathological findings observed in our study were hyperkeratosis of ortho- or parakeratotic type, acanthosis of the epithelium, with varying degrees of epithelial dysplasia and chronic inflammatory infiltrate in subepithelium. A study by Rodriguez et al[18] reported parakeratosis, orthokeratosis, a chronic inflammatory infiltrate in subepithelium and epithelial dysplasia but the most characteristic alteration of epithelium seen in their study was hyperplasia. In our study, in 60% of patients the histopathological examination did not correlate with clinical diagnosis. There have been varying discrepancy rates between histopathology and clinical diagnosis in various studies.[3,15] A study by Onofre et al[15] found discrepancy between clinical and histological diagnosis in a quarter of lesions. Another studie by Bokor Bratic et al[3] also found discrepancy in 17.6% of cases of potentially malignant oral lesions. This variable discrepancy in various studies may be due to subjective variation in interpreting histopathological features.[1]

Pemphigus vulgaris patients formed 12.5% of our cases (female:male=1.5:1), with a mean age of 38.6 years. The most frequent localization of oral lesions was on buccal mucosa (80%). These findings were in coherence with a results of Shamim et al[20], who also found female preponderance, predominant localization to buccal mucosa and mean age of patients comparable to our study (42.73 years). Cutaneous involvement was seen in 70% of our patients which was similar to results by Chams Davatchi et al.[7] The main histopathological findings observed in our study included suprabasal cleft and presence of acantholytic cells. A histopathological correlation with clinical diagnosis was seen in 80% cases, which was in good agreement with results of Kabir et al.[13] Another study by Shamim et al[20] reported a positive histopathology in 100% of patients. The reason for relatively less positive results on histopathologic examinaton in pemphigus vulgaris patients in our study can be due to the reason that intact blisters are rarely found in the oral cavity in pemphigus vulgaris due to trauma of mastication and it is frequently difficult for clinicians to differentiate between an ulcer and the intact mucosa as both are often white and shaggy.

In our study there were a few cases of oral squamous cell carcinoma, oral melanocytic naevus, mucous cysts and intraoral warts. As their numbers were very less it was difficult to draw any conclusion from them.

Even though a high percentage of disparity was observed between clinical diagnosis and histopathological findings in our study it is advisable to subject patients routinely for histopathologic investigations for following reasons:

Many of the skin disorders initially present as subtle signs in oral mucosa and may be misdiagnosed as they present to other specialities for treatment.

Some of them like oral lichen planus and leukoplakia have malignant potential hence early diagnosis and remedial measures could be taken with proper histopathological examination.

Part of the disparity in correlation between clinical and histopathological examination of oral lesions can be explained on the basis of interobserver and intraobserver variability in clinical and histopathological examination.

CONCLUSION

Even though a high percentage of disparity is observed between clinical diagnosis and histopathological findings it is advisable to subject patients routinely for histopathologic investigations for following reasons.

Many of the skin disorders initially present as subtle signs in oral mucosa and may be misdiagnosed as they present to other specialities for treatment.

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