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Original Research Article

Assessment of cases of lichenoid granulomatous stomatitis in respect to demographics, histological features, and subcategories in known population

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Abstract – Introduction: Lichenoid granulomatous dermatitis (LGD) is widely encountered lesions with both oral as well as dermal manifestation. Present study was done to evaluate lichenoid granulomatous stomatitis cases. **Materials and methods:** 226 biopsies were exposed to special stains such as acid-fast bacilli (AFB), immunohistochemical staining for CD 68 and Grocott methenamine-silver (GMS), and periodic acid-Schiff (PAS) stains. **Results:** Out of 226 patients, males were 84 and females were 142. Maximum cases were seen in age group 40–60 years (122) followed by >60 years (56) and 20–40 years (48). The common site was buccal mucosa seen in 128 (56.6%) cases followed by vestibule in 30 (13.2%), gingiva in 26 (11.5%), tongue in 20 (8.8%), lip in 12 (5.3%) and palate in 10 (4.4%). The common lesion was oral lichen planus seen in 142 (62.8%), carcinoma *in situ* in 12 (5.3%), squamous cell carcinoma in 8 (3.53%), pemphigus vulgaris in 10 (4.42%), leukoplakia in 24 (10.6%) and pemphigoid in 30 (13.2%) cases. Most lesions were of type I seen in 117 (51.7%) cases. **Conclusion:** Lichenoid granulomatous dermatitis poses variety of clinical as well as oral features. A long standing follows up and consideration of differential diagnosis is mandatory for better management of patients.

Introduction

Lichenoid granulomatous dermatitis (LGD) is widely encountered lesions with both oral as well as dermal manifestation. Lichenoid and granulomatous dermatitis defines a characteristic pattern of cutaneous inflammation that may be part of the morphologic spectrum of idiopathic lichenoid reactions such as lichen planus and may be seen with lichenoid drug reactions, endogenous T-cell dyscrasias [1]. Granulomatous conditions are amajor group of illnesses that share a mutual denominator, specifically histologic indication of granuloma formationLichenoid and granulomatous dermatitis (LGD) term entitles lichenoid tissue reaction admixed with a granulomatous component. LGD is a separate histopathological pattern. Lichen planus, lichen nitidus, subacute lupus, lichen striatus, mixed connective tissue disease, and lichenoid drug reactions are main clinical forms representing LGD microscopically [2].

Oral lichen planus (OLP) is chronic inflammatory immune mediated potentially malignant disorder affecting up to 5% of the people all over the world. It is considered to be multifactorial disease. It affects skin, mucous membrane, nails and hairs [3]. Clinically it appears grayish white radiating striations seen in buccal mucosa bilaterally. Different forms of lichen planus are reticular, bullous, plaque type, popular, erosive and ulcerative. Reticular lichen planus is quite frequently happening form typically seen in buccal mucosa.

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Other sites are lateral and ventral surface of tongue, labial mucosa and gingiva [4]. Clinically similar condition which mimics lichen planus is lichenoid reaction. It results from variety of drugs such as NSAIDS, ace inhibitor, Propanalol, captopril, carbamazapine, pencillamine, chloroquine, tetracycline, *etc*. Dental restorations such as metallic, nonmetallic, silver amalgam, copper, mercury and composite *etc*. are leading agents which may induce lichenoid reactions. Lichen planus is characterized histopathologically as chronic inflammatory cell infiltrate with degeneration of basal cell layer, saw tooth rete pegs, presence of colloid, hyaline or civatte bodies [5].

Lichenoid features can be non-specific and found with other conditions such as systemic diseases and as a response to pre-malignant and malignant oral conditions. Chronic granulomatous inflammation may arise in the oral cavity with numerous etiologic influences such as immunologic agents, foreign material, infective organisms, and manifests with subepithelial collections of histiocytes and giant cells organized into granulomas [6]. It is suggested that lesions not fulfilling all criteria for OLP such as systemic medication use or localized reaction to dental materials come under oral lichenoid lesion (OLL) or oral lichenoid mucositis (OLM). It is subcategorized into lichenoid granulomatous dermatitis (LGD) and lichenoid granulomatous stomatitis (LGS) [7].

The present study was conducted to assess cases of lichenoid granulomatous dermatitis in respect to demographics, histological features, and subcategories in known population.

Materials and methods

The present retrospective study was conducted in the Department of Oral medicine & Radiology, and Oral Pathology, from April 2017 to October 2019. The study comprised of 226 biopsies. The ethical approval was obtained from institutional ethics committee. Inclusion criteria were cases of lichenoid granulomatous stomatitis of oral cavity having both lichenoid pattern of inflammation and histiocytic infiltration or granulomatous reaction. The exclusion criteria were presence of foreign materials, excessively fragmented specimens and insufficient tissue for biopsy.

Data related to name, age, gender *etc*. was retrieved from departmental case history files. All biopsies were subjected to immunohistochemical staining for CD68 and special stains such as acid-fast bacilli (AFB), Grocott methenamine-silver (GMS), and periodic acid-Schiff (PAS) stains. Magro and Crowson classification was applied for categorizing the lichenoid cases [8].

Data thus obtained was interpreted using IBM SPSS Version 21. Chi-square test and Fisher's exact test was used for the study. $P < 0.05$ was judged statistically significant.

Results

Table I shows that maximum cases were seen in age group 40–60 years (122) followed by >60 years (56) and 20–40 years (48). The difference found to be significant ($P < 0.05$). Table II shows that common site was buccal mucosa seen in 128 (56.6%) cases followed by vestibule in 30 (13.2%), gingiva in 26 (11.5%), tongue in 20 (8.8%), lip in 12 (5.3%) and palate in 10 (4.4%). The difference was significant ($P < 0.05$).

Table I. Age wise distribution of cases.

Age group (Years)	Number (n = 226)	P value
20–40	48 (21.2%)	0.001
40–60	122 (53.9%)	
>60	56 (24.7%)	

Chi square test, $P < 0.05$ significant, n-number.

Table II. Distribution of lesions based on site.

Site	Number (n = 226)	Mean ± SD	P value
Buccal mucosa	128 (56.6%)	.108 ± 0.1967	0.021
Vestibule	30 (13.2%)	2.96 ± 0.0621	
Gingiva	26 (11.5%)	2.68 ± 0.0423	
Tongue	20 (8.8%)	2.34 ± 0.0314	
Lip	12 (5.3%)	1.47 ± 0.0571	
Palate	10 (4.4%)	1.32 ± 0.0224	

Chi square test, $P < 0.05$ significant, n-number, SD-slandered deviation.

Table III. Clinical presentation of cases.

Clinical lesion	Number (n = 226)	Mean ± SD	P value
Oral lichen planus	142 (62.8%)	5.458 ± 0.1325	0.001
Carcinoma *in situ*	12 (5.3%)	2.72 ± 0.0521	
Squamous cell carcinoma	8 (3.53%)	2.32 ± 0.0627	
Pemphigus vulgaris	10 (4.42%)	2.45 ± 0.0314	
Leukoplakia	24 (10.6%)	3.37 ± 0.0671	
Pemhigoid	30 (13.2%)	3.62 ± 0.0724	

Fisher's exact test, $P < 0.05$ significant, n-nubmer, SD-standard deviation.

Table III shows that common lesion was oral lichen planus of 142 (62.8%), carcinoma *in situ* in 12 (5.3%), squamous cell carcinoma in 8 (3.53%), pemphigus vulgaris in 10 (4.42%), leukoplakia in 24 (10.6%) and pemphigoid in 30 (13.2%) cases. Table IV shows that most lesions were of type I seen in 117 (51.7%) followed by type III in 76 (33.6%), type II in 28 (12.3%), type IV in 4 (1.76%) and type V in 1 (0.4%).

Discussion

Lichenoid granulomatous reactions (LGR) are present in oral mucosa as well as in skin and represent combination of granulomatous inflammation. Lichenoid granulomatous dermatitis (LGD) is also known as giant cell lichenoid dermatitis.

Table IV. Lesions based on Magro and Crowson classification.

Type	Number (n = 226)	P value
I	117 (51.7%)	
II	28 (12.3%)	
III	76 (33.6%)	0.001
IV	4 (1.76%)	
V	1 (0.4%)	

Gonzalez *et al.* [9] first reported it in year 1986 and Magro and Crowson studied it in 40 patients [8]. Magro and Crowson study helps in classifying the lichenoid granulomatous cases in clinical practice. It is an uncommon tissue reaction pattern that appears as an interface reaction with band-like lymphocytic infiltrates in close opposition to the epidermis and granulomatous inflammation in the dermis. LGD is seen with drug eruptions, hepatobiliary disorders, rheumatoid arthritis, cutaneous T-cell lymphoma (CTCL), id reactions to antecedent viral infections and active infections [10]. The present study was conducted to assess cases of lichenoid granulomatous stomatitis in respect to demographics, histological features, and subcategories in known population.

Braswell *et al.* [11] in their study evaluated 56 cases of LGD. It was fond that the most common clinical findings were drug eruption seen in 39.3% (22). Authors found that dermal eosinophils and psoriasiform epidermal changes were associated with drug.

Hakeem *et al.* [12] in their retrospective histologic study assessed 47 patients with Lichenoid reaction with granulomatous stomatitis. They found that 64% cases in females and rest 36% in males. The mean age of patients was 59 years (range 30–88 years). The most common sites in patients were gingiva followed by buccal mucosa, vestibule, tongue, lip and palate. The ordinarily observed lesions were carcinoma *in situ*, leukoplakia, dysplasia, trauma, squamous cell carcinoma, lichen planus, and vesiculobullous disease.

Fergusson *et al.* [13] reported a case of oral lichen planus and granulomatous cheilitis in a 66-year-old female patient. There was edema of the upper lip and reticulated plaques surrounded by erythema on the left lateral tongue and the lower lip. Garrido *et al.* [14] reported a patient with granulomatous mycosis fungoides MF with erythematosquamous plaques on fingers, toes, ankles, heels and abdomen. Patient was regularly followed for 13 years and on microscopic examination there was a lichenoid granulomatous reaction admixed with a neoplastic proliferation of small-sized, atypical CD4 lymphocytes.

The strong point of the study is that it covered numerous lesions such as lichen planus, carcinoma *in situ*, squamous cell carcinoma, pemphigus vulgaris, leukoplakia and pemphigoid. The shortcoming of the study is small sample size and lack of extensive study.

A thorough assessment of similar appearing lesion in oral cavity as well in skin may provide a platform for the better outcome of the treatment given to the patients. Further studies are required with larger sample to substantiate the results. The present study helps to identify and differentiate the lichenoid granulomatous stomatitis cases in the practice of primary care.

Conclusion

Authors suggested that Lichenoid granulomatous dermatitis poses variety of clinical as well as oral features. A long standing follow up and consideration of differential diagnosis is mandatory for better management of patients.

Conflicts of interests: The authors have no conflict of interests to disclose.

Ethical Approval

Ethical Approval was not required.

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