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Original Article

Reactive Hyperplastic Lesions of the Oral Cavity: A Retrospective Analysis in Jammu Region of Jammu and Kashmir State, India

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Abstract

Introduction: Oral mucosa is constantly under the influence of various stimuli, and thus exhibits a variety of inflammatory, reactive, and neoplastic lesions. Reactive lesions of the oral cavity are the common lesions faced by a dentist during routine examinations.

Aim: The aim of this study was to evaluate the prevalence of oral reactive hyperplastic lesions (RHLs) over a period of 5-year from 2010 to 2015 in Jammu province.

Materials and Methods: In this retrospective study, records were procured from the archives of the Department of Oral Pathology, Indira Gandhi Government Dental College, Jammu. Records with both clinical and histopathological diagnosis were analyzed. History of patient's age, gender, and anatomic location lesions was extracted from the records.

Results: From total 402 specimens diagnosed from 2010 to 2015, 88 cases were diagnosed as RHL (21.8%). From a total of 88, RHL diagnosed fibroma was the most common lesion (32.9%), followed by inflammatory hyperplasia (27.2%), pyogenic granuloma (25%), peripheral ossifying fibroma (10.2%), and peripheral giant cell granuloma (3.4%). Of all the lesions evaluated, age of the patient ranged from 14 to 75 years, mean age being 45 years.

Conclusion: Findings in our study were broadly similar to the results of the previous studies with few differences. Knowledge of the frequency and distribution of these is beneficial during diagnosis and treatment plan in clinical practice and thus can reduce dentoalveolar complications.

Key words: Fibroma, Inflammatory hyperplasia, Peripheral giant cell granuloma, Peripheral ossifying fibroma, Pyogenic granuloma, Reactive hyperplastic lesions

INTRODUCTION

Reactive hyperplastic lesions (RHLs) are common oral mucosal lesions caused by chronic and recurrent irritation of the mucosa and histologically represent chronic inflammation, granulation tissue, mineralized tissue, multinucleated giant cells and proliferation of endothelial cells, and fibroblast.[1] These lesions are of varying sizes and usually have no radiographic features. However, erosions and cup-shaped radiolucency can be seen. Clinically, it may be sessile or pedunculated masses with ulcerated or smooth surfaces.[2] Surgical excision is the treatment of choice and elimination of chronic irritant is mandatory. Majority of these do not recur. However, if the source of trauma persists, frequent recurrences are possible. The purpose of this retrospective study was to survey and evaluate the frequency of various types of RHLs in Jammu province of Jammu and Kashmir state and to analyze the clinical features with histopathologic diagnosis treated at Indira

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Gandhi Government Dental College, within a span of 5 years from 2010 to 2015.

MATERIALS AND METHODS

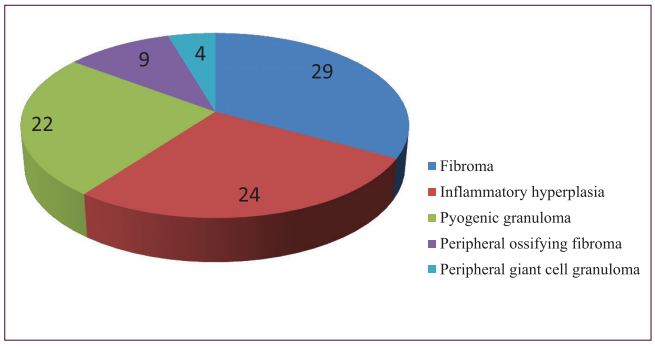
RHL was classified into five groups: Fibroma (F), pyogenic granuloma (PG), peripheral giant cell granuloma (PGCG), peripheral ossifying fibroma (POF), and inflammatory hyperplasia (IH). A retrospective archive review of different RHL between 2010 and 2015 from the records of the Department of Oral Pathology, Indira Gandhi Government Dental College, Jammu, was carried out. Classification of the lesion was followed by the academic oral maxillofacial text. Histopathological slides, which were missing or not properly stained, were not included. Records with both clinical and histopathological diagnosis were selected. History of patient's age, gender, and anatomic location lesions was extracted from the records. Clinical characteristics such as base, surface, size, and color of the lesions were also collected from the records. All the findings of our study were then compared with other studies conducted in different parts of the world.

RESULTS

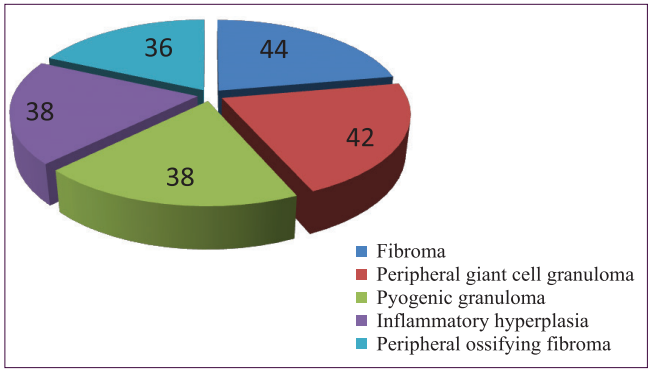
Of the total 402 specimens diagnosed from 2010 to 2015 in the registers, 88 cases were diagnosed as RHL (21.8%). From a total of 88, RHL diagnosed during the assessed period of 5 years, fibroma was the most common lesion (32.9%), followed by IH (27.2%), PG (25%), POF (10.2%), and PGCG (3.4%) (Table 1 and Graph 1). Of all the lesions evaluated, age of the patient ranged from 14 years to 75 years, mean age being 45 years. Mean age of fibroma was 44 years, PG was 38 years, PGCG was 42 years, POF was 36 years, and IH was 38 years (Table 2 and Graph 2). Of these, 58 were females (65.9%) and 30 were males (34%) (Table 3 and Graph 3). Thus, male:female ratio was 1:1.5. The most common site was gingiva (70%) followed by buccal mucosa (14.7%), palate (7.9%), lips (3.4%), and retromolar region (3.4%) (Table 4 and Graph 4). No such lesions were found in the tongue, vestibule, and alveolar mucosa. Chief complaint in the majority of lesions was a painless growth. History of burning sensation was given by few patients. The presence of local irritant was the most common cause and was seen in approximately 60-70% of cases. Others causes were overhanging restoration, abrasion, minor trauma, and hormonal imbalance. The size of the lesion varied between 6 mm and 2 cm (Table 5 and Graph 5). The duration of the lesion at the time of diagnosis ranged from 2 to 8 months approximately. Most of the lesions were firm with sessile base and smooth surface. Ulceration was seen in very few lesions. The color varied from normal to grayish to reddish brownish. All the lesions were surgically excised, and the diagnosis was confirmed by histopathological examination (Figures 1-5).

DISCUSSION

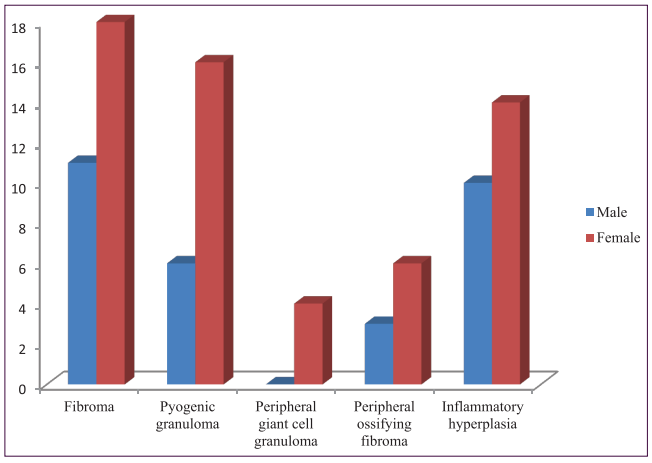
The reactive lesions are benign tumor-like proliferations in the oral cavity because oral mucosal tissues are frequently exposed to traumatic injuries. Chronic trauma can induce inflammation which produces granulation tissue with proliferation of endothelial cells and fibroblast and chronic



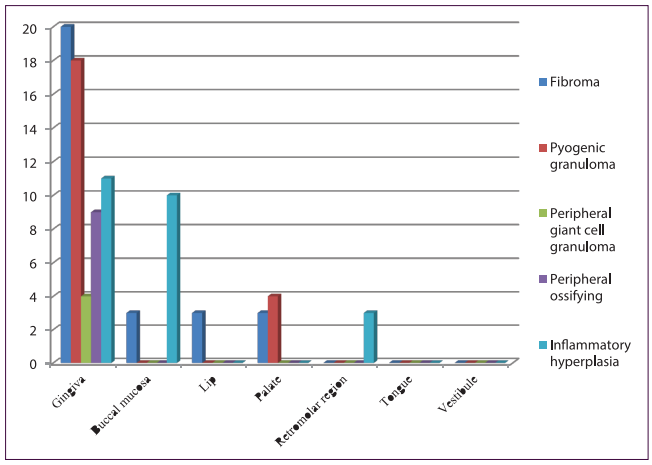
Graph:1 Distribution of patients with reactive hyperplasia according to prevalence (n-88)



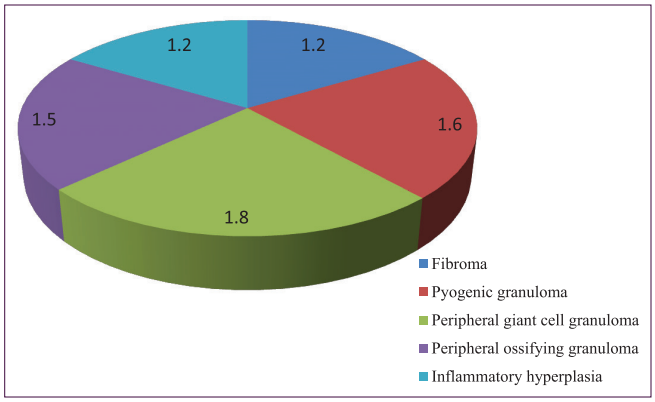
Graph 2: Distribution of patients with reactive hyperplasia according to age



Graph 3: Distribution of patients with reactive hyperplasia according to Sex



Graph 4: Distribution of patients with reactive hyperplasia according to location



Graph 5: Distribution of patients with reactive hyperplasia according to size

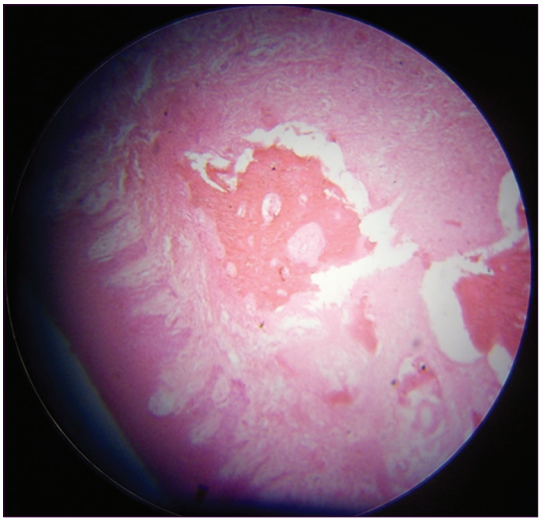


Figure 1: Peripheral ossifying fibroma 10X

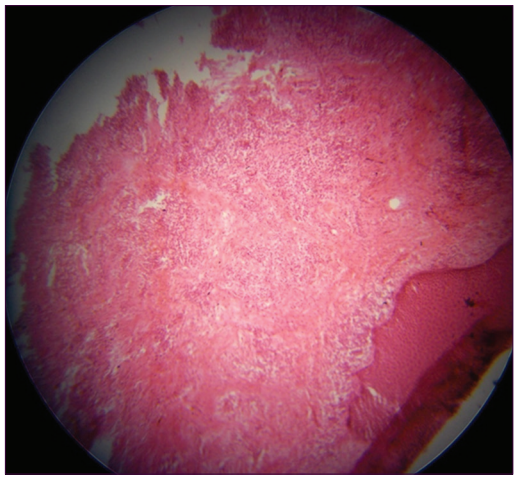


Figure 2: Inflammatory hyperplasia 10X

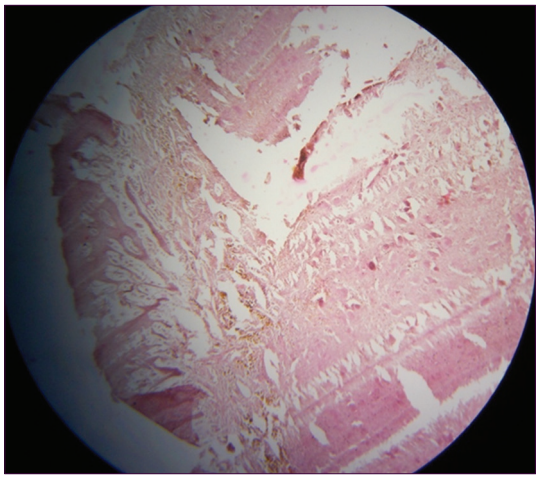


Figure 3: Peripheral giant cell granuloma 10X

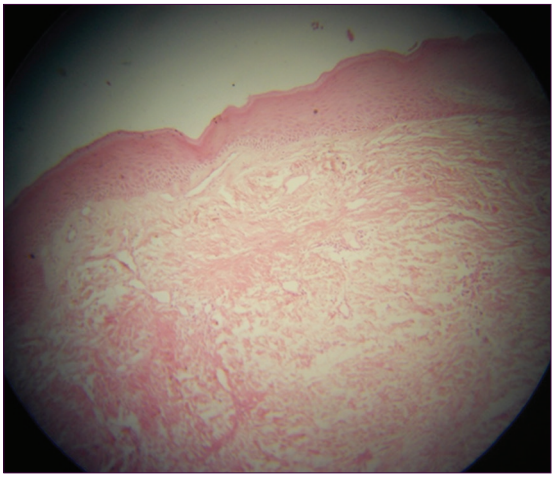


Figure 4: Fibroma 10X

inflammatory infiltrate resulting in a fibrous overgrowth called reactive hyperplasia.[3]

In our study, fibroma was the most common RHL which constituted 32.9% of the total cases with 44 years as the

mean age and 37.9% in males and 62% in females. This finding is consistent with the finding given by Kadeh *et al.*[4] Our results were also close to findings given by

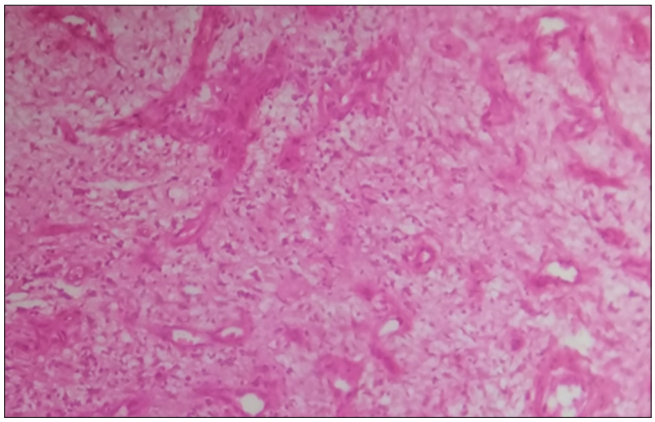


Figure 5: Pyogenic granuloma 10X

Table 1: Distribution of patients with reactive hyperplasia according to prevalence (n-88)

S.No	Lesion	No. of cases	Age %
1	Fibroma	29	32.9
2	Inflammatory hyperplasia	24	27.2
3	Pyogenic granuloma	22	25
4	Peripheral ossifying fibroma	9	10.2
5	Peripheral giant cell granuloma	4	4.5

Table 2: Distribution of patients with reactive hyperplasia according to age

S No.	Lesion	Mean age (in years)
1	Fibroma	44
2	Peripheral giant cell granuloma	42
3	Pyogenic granuloma	38
4	Inflammatory hyperplasia	38
5	Peripheral ossifying fibroma	36

Table 3: Distribution of patients with reactive hyperplasia according to Sex

S No.	Lesion	Male	Female
1	Fibroma	11	18
2	Pyogenic granuloma	6	16
3	Peripheral giant cell granuloma	-	4
4	Peripheral ossifying fibroma	3	6
5	Inflammatory hyperplasia	10	14

Daley *et al.* in Canada and Zhang *et al.* in China.[5,6] Studies reported by Ababneh *et al.*, Kashyap *et al.*, and Zarei *et al.* quoted PG to be most prevalent reactive lesion.[7-9] In series of studies reported by Naderi *et al.*, PGCG was the most prevalent lesion which was in agreement with the reports mentioned above including our study.[10] Our findings were consistent with the data given by Buchner *et al.* except that PGCG comprised only 4.5% of the cases as compared to the findings reported by Buchner *et al.*, where PGCG comprised of 18.7% of cases.[11] In our study, IH comprised 27.2% of total cases which is high as compared to the findings reported by Zain and Fei which was 15.7%.[12] Our percentage of POF was 10.2% which was higher than studies given by Maturana-Ramírez *et al.* 2.9% and Ababneh 7.2% and much lower than reported by Macleod and Soames 40%.[13] The differences may be due to different classification and terminology of lesions and number of cases.

It was interested to note that all RH lesions occurred more in females with male:female ratio as 1:1.5. PG was seen two times more common in females as compared to males probably reflecting hormonal imbalance. Studies conducted by Zarei *et al.* and Ala Aghbali *et al.* male:female ratio was 1:1.8 and 1:1.4, respectively.[1,7] Salum *et al.* and Kfir *et al.* also reported a higher RHL frequency in females except for PGCG, which was higher in males.[14,15] Maturana-Ramírez *et al.* also reported a higher frequency in males.[16] Ethic differences between studies could be the reason.

In the present study, the mean age of the patient was third and fourth decades which is comparable with the findings of other studies.[6,17] The highest RHL prevalence was found in the group of 50-59 years as reported by Maturana-Ramírez *et al.*[16] Few studies have shown.[6,14-17] In our study, only one case of PG was female who was 14 years of age. According to location, the most common site was gingiva accounting for 70% of total cases. Anterior region was more commonly involved with slightly greater prevalence in the maxilla. This is comparable to few other studies reported in the literature.[6,11,14] Buccal mucosa was the second most common site 14.7% followed by palate 7.9%, lips 3.4%, and retromolar region 3.4%. Thus, the present study supports previous assertion that traumatic fibroma and PG can involve any oral mucosal site with

Table 4: Distribution of patients with reactive hyperplasia according to location

S No.	Lesion	Gingiva	Buccal mucosa	Lip	Palate	Retromolar region	Tongue	Vestibule
1	Fibroma	20	3	3	3	-	-	-
2	Pyogenic granuloma	18	-	-	4	-	-	-
3	Peripheral giant cell granuloma	4	-	-	-	-	-	-
4	Peripheral ossifying	9	-	-	-	-	-	-
5	Inflammatory hyperplasia	11	10	-	-	3	-	-

Table 5: Distribution of patients with reactive hyperplasia according to size

S No.	Lesion	Mean size
1	Fibroma	1.2 cm
2	Pyogenic granuloma	1.6 cm
3	Peripheral giant cell granuloma	1.8 cm
4	Peripheral ossifying granuloma	1.5 cm
5	Inflammatory hyperplasia	1.2 cm

special preference to gingiva while POF and PGCG occur exclusively on the gingiva, and IH cases were equally distributed between gingiva and buccal mucosa,[18] and a few cases occurred in the retromolar region. Periodontal ligament, periosteum, and connective tissues are the origin of the reactive lesion as a result of which gingiva is the common site. Daley *et al.* suggested that vascular component of PG is gradually replaced by fibrous tissues, and hence, diagnosed as fibrous hyperplasia or fibroma.[5] Eversole and Rovin suggested that limitation of PGCG and POF to the gingiva supports possible histogenic derivations from the superficial periodontal ligament which contains cells capable of producing bone and cementum.[19] Despite the similarities, few differences have been found between the findings of this study and the previous reports. It may be due to socioeconomic and cultural variations, racial differences, different selected classification methods, available resources, type of department, where the research was conducted and histopathologic case arrangement in lesions.

CONCLUSION

Oral reactive lesions are often detected by dental professionals, surgeons, and ear, nose, and throat specialist. They are mucosal response to chronic low-grade irritation caused by plaque and calculus or any other irritant. The differences in findings of various studies may also be influenced by the intensity of irritation, duration of lesion and possibly the effect of hormones. Complete surgical excision of the lesion is the treatment of choices. Imperative in the treatment of reactive gingival lesion is the complete removal of local irritants with follow-up care as well as dental hygiene maintenance to prevent or treat recurrence. Knowledge of the frequency and presentation of common oral lesions is beneficial in developing a clinical impression of such lesions encountered in practice. In spite of some clinical differences, their features are sometimes quite similar to those of tumors and can be troublesome in the differential diagnosis. Our knowledge of the distribution of reactive lesion can be a useful tool for correct diagnosis.

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