

Prevalence of Focal Fibrous Hyperplasia in Bareilly Region: A 10-year Institutional Retrospective Study

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ABSTRACT

Background: Focal fibrous hyperplasia (FFH) is one of the most common benign soft tissue growths in the oral cavity. Chronic irritation or trauma is frequently identified as the causative factor. It has a predilection for females, older than 30 years, few centimeters in diameter, pedunculated or sessile and occurs frequently on the gingiva or buccal mucosa. Treatment involves surgical excision, and recurrences are very infrequent.

Aim: To evaluate the prevalence of FFH in any institutional setup for a period of 10 years.

Materials and methods: All the histologically diagnosed cases during the period of 10 years (2008–2017) were retrieved from the archives of Department of Oral and Maxillofacial Pathology and evaluated for the prevalence of FFH. The details like age, sex, site, and anatomical side were recorded.

Results: Out of the total 2,988 cases, 277 (9.27%) were found to be FFH of which 132 (48%) were male and 145 (52%) were female. Age ranged between 10 years and 80 years and incidence was highest in 21–40 (46%) and 41–60 (21%) age groups. The most common site was left alveolar mucosa (35.1%) followed by buccal mucosa (32.2%). The most commonly affected side was right side 188 (67.9%) and the least common was midline 28 (10.1%).

Conclusion: This study indicates several differences in age and gender distribution as well as in site among the different lesions. The results of this study vary from other studies and the data accessible here can be used as a guide for further multicenter studies.

Keywords: Focal fibrous hyperplasia, Low-grade irritation, Oral mucosa, Traumatic fibroma, Tumor' reactive lesions.

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INTRODUCTION

Oral mucosa is constantly in the influence of different external and internal influences. It exhibit an array of developmental malformations, inflammation, reactive, and neoplastic environment.¹ Reactive lesions are tumor-like hyperplasia which show response to low-grade irritation or injury,² entrapped food, calculus, fractured teeth, and iatrogenic factor together with overextended denture flanges and dental restorations with overhanging margins.³ The most common localized reactive lesions of oral cavity are focal fibrous hyperplasia (FFH), peripheral ossifying fibroma (POF), pyogenic granuloma (PG), peripheral giant cell granuloma (PGCG), and giant cell fibroma.⁴

These proliferations are painless with pedunculated or sessile base that differ from pink to red in color. The surface manifestation is variable. It may be ulcerated or nonulcerated. Size of lesion varies from few millimeters to several centimeters. Reactive proliferations are fibrous tissues with a different histological component such as calcifications, giant cells, or vessel hyperplasias.^{2,3} They typically have a quick onset and may enlarge/diminish in size and eventually regress. Reactive enlargements are often but not always painful and may have brisk growth rate than tumor.⁵

The idiom "FFH" entail a reactive tissue response and is consequently preferable to the idiom "fibroma", which imply incorrectly, a benign neoplastic production of fibrous stroma.^{6,7} The lesion appears usually the same color as the surrounding mucosa. The common site of occurrence is in the buccal mucosa along the occlusal plane or on the interdental papilla of the anterior teeth with a slight female predilection. Histologically, a nonulcerated lesion is often enclosed by a layer of keratinized stratified squamous epithelium. The tissue mass consists of

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bundles of collagen fibers arranged in radiating, circular, or haphazard fashion. The vast majority of fibrous stroma is remarkably dense with reduced vascularity and a small number of chronic inflammatory cells.⁸

The clinical appearance of reactive lesions is very similar to that of neoplastic proliferations. This similarity is a challenging matter for differential diagnosis.^{2,9} However, they are clinically similar but possess different histopathological features. Hence, histopathological evaluations of all the reactive overgrowths in the form of excisional biopsy are mandatory to assess its clinical behavior, recurrence pattern, and to predict its prognosis. Thus, the present study intends to evaluate and inter-compare the relative frequency of FFH with its clinical characteristics in an institutional setup.

Table 1: Master chart showing the prevalence rate of focal fibrous hyperplasia of oral mucosa since 2008 till 2017 in Bareilly region

Years of study	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	Total
Total no. of cases	201	213	153	228	135	256	409	454	303	336	2988 (100%)
Focal fibrous hyperplasia	28	33	16	13	15	25	59	46	6	36	277 (9.27%)

Table 2: Age-wise distribution of focal fibrous hyperplasia of oral mucosa

Age groups (in years)				
0–20 (%)	21–40 (%)	41–60 (%)	61–80 (%)	p value
55 (20)	127 (46)	59 (21)	36 (13)	<0.001 (sig.)

Table 3: Side-wise distribution of focal fibrous hyperplasia of oral mucosa

Side				
Left (%)	Right (%)	Midline (%)	Total (%)	p value
61 (22.0)	188 (67.9)	28 (10.1)	277 (100)	<0.001 (sig.)

MATERIALS AND METHODS

A retrospective cross-sectional study was conducted on the formalin fixed paraffin embedded tissue specimens of focal reactive overgrowth from the archives of the Department of Oral and Maxillofacial Pathology, Institute of Dental Sciences, Bareilly, available from 2008 to 2017. Information relating to the type of reactive lesion, age, gender, site, and side with histopathologically confirmed cases of focal reactive overgrowths of oral mucosa were extracted and recorded on customized data forms and cases with incomplete data were excluded.

STATISTICAL ANALYSIS

Data were entered in MS excel sheet and were analyzed using SPSS statistical software (V.18) using the Chi-square and Fisher's exact test was performed.

RESULTS

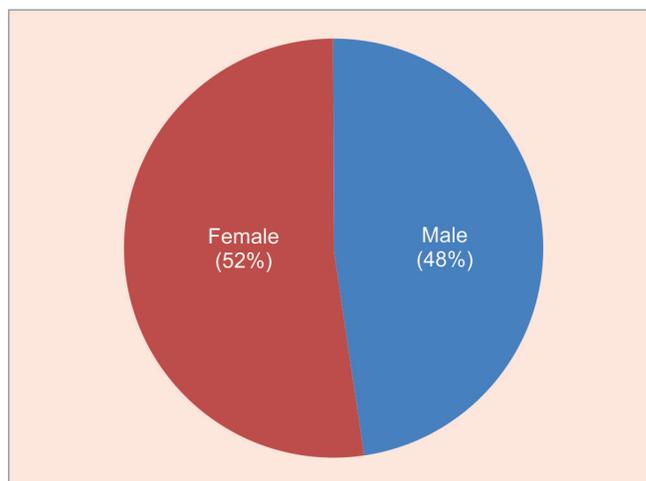
A total of 2,988 (100%) cases during the period of 10 years were evaluated of which FFH was identified in 277 (9.27%) cases (Table 1).

The distribution of FFH among 21–40 years of age range showed 127 (46%) cases, 41–60 years showed 59 (21%) cases, 0–20 years showed 55 (20%) cases and 61–80 years of age showed 36 (13%) cases respectively (Table 2).

Upon statistical analysis, gender distribution among the groups does not show a statistically significant difference. FFH showed 145 (52%) cases in females followed by 132 (48%) cases in males (Fig. 1).

Side distribution among the reactive overgrowths showed most commonly affected side was right with 188 (67.9%) cases, followed by left 61 (22.0%) and the least common was midline with 28 (10.1%) cases (Table 3).

Site distribution among the reactive overgrowths showed alveolar mucosa 97 (35.1%) was the most common followed by buccal mucosa 89 (32.2%), gingiva 64 (23.1%), lip 16 (5.7%), hard

**Fig. 1:** Gender-wise distribution of focal fibrous hyperplasia of oral mucosa**Table 4:** Site-wise distribution of focal fibrous hyperplasia of oral mucosa

Intraoral site	No. of cases	Relative frequency (%)
Alveolar mucosa	97	35.1
Buccal mucosa	89	32.2
Gingiva	64	23.1
Lip	16	5.7
Hard palate	07	2.5
Retromolar region	04	1.4
Total	277	100

palate 07 (2.5%), and the least common was retromolar region with 4 (1.4%) cases (Table 4).

DISCUSSION

Fibrous hyperplasia comprises a cluster of fibrous connective tissue lesions that usually arise in the oral mucosa as an effect of injury or chronic irritation. Chronic trauma can provoke inflammation, which produces granulation tissue with endothelial cells, chronic inflammatory cells, later on, fibroblasts proliferate and apparent as an overgrowth called fibrous hyperplasia. These tumor-like lesions are not neoplastic but specify a chronic process in which an exaggerated repair occurs (granulation tissue and formation of scar).¹⁰ In present study, the prevalence of FFH was 9.27%, consistent with study done by Kadeh et al.¹ However, study and reports by Effiom et al.,¹¹ Reddy et al.,¹² and Buchner et al.,⁹ showed that reactive lesions accounted for 6%, 13%, and 7%, respectively. This variation in prevalence of FFH

in could be due to different classifications and terminologies of reactive overgrowths. In adding up, geographical differences, lifestyle, and racial factors might have affected the results. In the present study, FFH was the most frequent reactive lesion arising in the oral cavity, and in parallel study done by Buchner et al.,⁹ also showed a similar finding. Contrastingly, a study done by Naderi et al.² assumed that FFH was the least common (288).

Histologically, FFH is considered by an unencapsulated, solid, nodular mass of dense, and occasionally hyalinized fibrous connective tissue. The surface epithelium is generally atrophic but may illustrate signs of constant trauma, such as excess keratin, intracellular edema of the superficial layers, or traumatic ulceration. About 1% of the FFH present stellate and giant cells.¹³

In the present study, FFH showed a female predominance similar to the study of Reddy et al.¹² who also showed a M:F ratio of 1:1.5.

In the present study, FFH typically occurs in third and fourth decade of life, similar study done by Naderi et al.,² Gandhi et al.,³ Kfir et al.,⁶ and Ramu et al.,⁴ also concluded that it was predominantly noted in second to fourth decade of life.

In the present study it was seen that most cases of FFH occurred on alveolar mucosa followed by buccal mucosa and the least common was on retromolar region (04). Parallel study done by Gandhi et al.,³ Kadeh et al.,¹ and Buchner et al.,⁹ also encountered the similar results.

CONCLUSION

This study indicates some differences in age and gender distribution as well as in location between the different lesions. Since, this study is a single-centered study, similar studies have to be instituted in other centers of India to draw an inference regarding the epidemiology of gingival lesions. The data presented in this study can be used as a guide for additional multicenter studies.

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