ORIGINAL ARTICLE

PREVALENCE OF REACTIVE HYPERPLASTIC ORAL LESIONS

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ABSTRACT

The benign hyperplastic lesions of the oral cavity are tumor-like proliferations but not neoplastic in nature. These lesions are reactive over-growths that develop as a result of chronic irritation or continuous trauma to the oral mucosa. The study was conducted to determine the prevalence, distribution and relative cause of benign reactive hyperplastic lesions of the oral mucosa in the secondary care setting of Fatima Jinnah Dental College and Hospital (FJDC&H), Karachi, Pakistan. It was a retrospective, cross-sectional study which included 100 cases of reactive oral hyperplastic lesions extracted from January 2017 to May 2019 reported in the Department of Oral Pathology and Oral Medicine at Fatima Jinnah Dental College and Hospital. The research statistics were calculated by SPSS version 20. Chi-square was applied to find an association between two variables. The p-value <0.05 was significant. Out of100 cases, the fibrous lesions were the most common (40%), followed by pyogenic granuloma (23%) and frictional keratosis (15%). The lesions were most commonly found in females than males; the ratio of 2:1. Gingiva (60%) and buccal mucosa (21%) reported to be the predominant site of occurrence. These lesions develop due to poor oral hygiene (60%) and persistent chronic trauma (33%) to the oral mucosa. It is essential to confer an oral hygiene awareness session to the patients who are reporting to the hospital for dental care and general population who have no reach to good dental care about the significance of maintaining adequate oral hygiene and high-quality aesthetics for the healthy life.

Keywords: *Fibrous tissue hyperplasia, oral mucosa, hyperplasia, granuloma*

This article may be cited as: Ayaz M, Afzal S, Mehdi H, Kaukab H. Prevalence of reactive hyperplastic oral lesions. Pak Oral Dent J 2020; 40(3):162-66.

INTRODUCTION

Benign reactive hyperplastic lesions of the oral mucosa frequently come across in the routine dental practice and hospital settings in Pakistan as well as worldwide. [1-2] These lesions can be symptomatic or encounter incidentally when patient comes to dental OPD for usual dental treatment. The clinical presentation of these lesions depends on various factors like age, degree of irritation or trauma, gender disposition, distribution and nature of the lesion. [3] The commonest predisposing factors reported are persistent low-grade chronic inflammation and recurrent chronic irritation due to heavy plaque and calculus deposits, cheek-biting, hormonal disturbances, iatrogenic injury from sharp edges of the broken tooth, overhanging dental fillings and ill-fitting dentures. [4-5]

The benign reactive hyperplastic oral lesions are primarily reactive and inflammatory in origin instead of neoplastic. Among all the reactive hyperplastic lesions of the oral cavity, the fibrous lesion (fibrous epulis or fibroma) is reported to be the prevailing lesion with the high occurrence rate. [5-6] Mandeep Kaur et al have found the high prevalence of traumatic fibroma up to 33% in the population of Jammu and Kashmir State and the incidence of inflammatory papillary hyperplasia and pyogenic granuloma of the oral mucosa were 27% and 25% respectively. [7] In accordance with the results of above studies, Maturana-Ramirez et al also stated highest cases of focal fibrous lesion (71.1%) trail by pyogenic granuloma (21.1%) in the population of Chile.[8]

These reactive hyperplastic oral lesions are predominantly found in the females as compared to males, ratio of 2.5:1 reported by Kamile Leonardi Dutra et al. [9] According to them; the commonest sites for these lesions are gingival tissue and alveolar ridge. They have stated in the study that the lesions presented in a wide age group between10 to 70 years, with high incidence in 5th, 6th and 7th decades of life. Similarly, Soyele O

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Received for Publication: May 17, 2019
First Revision: Oct 9, 2019
Second Revision: Dec 26, 2019
Approved: Jan 5, 2020

et al have also affirmed the high incidence of reactive hyperplastic lesions in the females (66.7%) between 9 to 29 years and the most frequently affected intraoral site is gingiva (84.6%). [10]

In the clinical setting, most of the reactive hyperplastic oral lesions respond best by eradication of the causative agents. Only the lesions with sinister clinical appearance or those which didn't regress after the treatment were biopsied and sent for histopathological analysis to ratify the diagnosis, in order to exclude the possibilities of malignancy. [4, 11] The histological evaluation of these lesions revealed variable features like presence of chronic inflammatory cells, granulation tissue, bundles of collagen fibers, multinucleated giant cells and sometimes mineralization. [12]

Several studies had been conducted to collect the epidemiological data about malignant lesions of the oral cavity in Pakistan and globally. But little focus has been paid to gather statistics about the benign hyperplastic lesions of the oral mucosa, which might cause problems such as esthetic dissatisfaction or impede masticatory functions in routine. [3] This study is conducted to elucidate the prevalence, distribution and cause of oral benign reactive hyperplastic lesions in the secondary care setting at Fatima Jinnah Dental College Hospital, Karachi, Pakistan.

METHODOLOGY

In this retrospective, cross-sectional study, patients' record was collected from the Oral Pathology and Oral Medicine departments at Fatima Jinnah Dental College and Hospitals (FJDC&H). Information regarding reactive hyperplastic oral lesions was extracted from the record files, total 100 cases were obtained from January 2017 to May 2019. These lesions were classified into the following groups: focal fibrous lesions (Traumatic fibroma/fibrous epulis), vascular reactive lesions (pyogenic granuloma/pregnancy epulis), peripheral giant cell granuloma, denture induced stomatitis and peripheral ossifying fibroma.

The exclusion criterion was merely incompletely recorded cases. Clinical data regarding age, gender, appearance and the anatomical location of the lesions was collected for each case. The statistical analysis of data was calculated by Statistical Package for Social Sciences (SPSS version 20). For qualitative and quantitative data percentage, frequencies and means were calculated. Chi-square test was applied to found the association between hyperplastic lesions, etiology and location of the lesions. The p-value ≤ 0.05 was statistically significant at 95% confidence interval. The ethical approval was taken from the Fatima Jinnah Dental College and Hospital ethical committee (FEB-2019-OPT01).

RESULTS

Table 1 represents the gender, age and year distribution of the total 100 reported cases of reactive hyperplastic lesions of the oral mucosa in frequency and percentage. According to the statistics, the maximum ratio of cases was reported in the females (68%) and common age group was 21 to 30 years (28%). Table 2 shows an association between the type of lesion and etiological factor by pearson chi-square analysis. The result is highly significant represented by the p-value of < 0.00001. The data in table 3 indicates a strong association between the nature of lesion and site of occurrence on cross tabulation with p-value < 0.00001. The most predominant intraoral site appeared to be gingiva (60%) and buccal mucosa (21%). The bar graph represents the frequency of reactive hyperplastic oral mucosal lesions, among which fibrous Epulis and pyogenic granuloma were prevalent.

DISCUSSION

The oral benign hyperplastic lesions are primarily representing as tumor-like proliferations however they do not possess any neoplastic attributes on the histology.[13] These lesions are small reactive growths which could develop as a consequence of constant irritation or trauma to the oral soft tissue.[14] The most common source of persistent irritation to the oral mucosa is poor oral hygiene (deposition of heavy plaque and calculus) and local traumatic injuries (cheek biting and foreign objects), which is also seem to be consistent with our study results 60% and 33% cases respectively. The association between lesion and etiological factor was proved statistically significant p-value < .00001. The surface of the lesions usually appeared smooth and glossy on examination; sometime it gets ulcerated due to a localized injury. Most of the oral hyperplastic

TABLE 1: DEMOGRAPHIC DATA

Gender	
Female	68 (68%)
Males	32 (32%)
Age	
10-20	21 (21%)
21-30	28 (28%)
31-40	12 (12%)
41-50	15 (15%)
>50	24 (24%)
Year	
2019	36 cases
2018	34 cases
2017	30 cases

TABLE 2: CROSS TABULATION BETWEEN TYPES OF LESION AND CAUSES

Lesions	Etiology			Total	p-value
	Poor Oral Hygiene	Cheek Biting/ Trauma	Ill-Fitting Denture		
Fibrous Epulis	36	8	0	44	<.00001
Fibroepithelial Polyp	1	8	0	9	
Pyogenic Granuloma	22	1	0	23	
Denture Induced Hyperplasia	0	0	7	7	
Frictional Keratosis	0	15	0	15	
Peripheral Giant Cell Granuloma	0	1	0	1	
Periferal Ossifying Fibroma	1	0	0	1	
Total	60	33	7	100	

TABLE 3: CROSS TABULATION BETWEEN TYPES OF LESION AND INTRAORAL SITES

Lesions	Intraoral Site						Total	p-value
	Gingiva	Buccal Mucosa	Labial Mucosa	Tongue	Palate	Alveolar Mucosa		
Fibrous Epulis	39	1	2	0	0	2	44	.00001
Fibroepithelial Polyp	0	7	2	0	0	0	9	
Pyogenic Granuloma	22	0	1	0	0	0	23	
Denture-Induced Hyperplasia	1	0	0	0	1	5	7	
Frictional Keratosis	0	13	0	2	0	0	15	
Peripheral Giant Cell Granuloma	1	0	0	0	0	0	1	
Periferal Ossifying Fibroma	1	0	0	0	0	0	1	
Total	64	21	5	2	1	7	100	

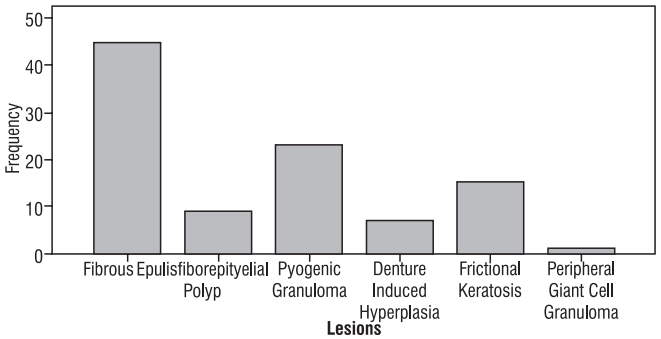

Fig 1: Frequency of reactive hyperplastic oral mucosal lesions

Fig 2: Shows localized hyperplastic lesion of the gingiva between mandibular left canine and lateral incisor.

Fig 3: Represents the localized gingival hyperplastic lesion in the mandibular anterior region

Fig 4: Illustrates localized fibrous growth in the right mandibular anterior region.

lesions appear sessile, very few lesions attached to stalk giving a pedunculated appearance.[15] The hue of the lesions varied from pink to reddish with bleeding on a slightest touch.[16]

The most of the oral reactive hyperplastic lesions have reported in the female population than males, ratio of 2:1. In a study carried out by da Saliva et al and Soyele et al, oral reactive hyperplastic lesions were also predominant in females as compared to males, a ratio of 1.8:1 and 1.4: 1respectively. [10, 17] In the present study, fibrous hyperplasia was seemed to be the most prevalent oral benign hyperplastic lesion constituted 40% of the total cases, as presented in the bar graph. Pyogenic granuloma and friction keratosis due to unceasing cheek biting accounts for about 23% and 15% respectively. Reddy et al have also reported the higher incidence of fibrous hyperplastic lesion up to 57.4% in the oral cavity, trailed by pyogenic granuloma 18.7% and peripheral ossifying fibroma 17.7%.[12] However, Ammar Ahmed et al stated 15% occurrence of pyogenic granuloma out of 56 reactive hyperplastic lesions of the oral soft tissue, which is the highest among all the lesions, followed by fibrous epulis 10% and giant cell granuloma 4% in the Karachi population.[2]

In the present study, there was a high incidence of oral reactive hyperplastic lesions in the 2nd, 3rd and 5th decades of life. This age distribution is in accordance with age group reported in earlier studies by Kadeh et al, Hallikeri et al and Awange et al, the second to fourth decade with a mean age of 30 years.[18-20]These studies also affirmed that gingiva and alveolar mucosa appeared to be the most common sites for oral reactive hyperplastic lesions, especially in the lower jaw. The correlation between age and oral reactive lesions was statistically significant (P=0.01) in their study.[18] In accordance with previous studies, most of the lesions were developed from gingival tissue 60% and buccal mucosa 21%,[19] which is statistically significant (p <.00001). The lesions were usually present in the mandibular arch (80%) in comparison to maxillary. This is also in accordance with the research conducted by Santosh Hunasgi et al and Binita Gandhi et al; they reported that oral reactive hyperplastic lesions are commonly presented in the mandible particularly in the posterior region.[21-23]

CONCLUSION

By viewing the increase incidence of oral reactive hyperplastic lesions among the general population in Pakistan and worldwide, now it becomes necessary to take a firm step in reducing its incident and progression. It could merely be possible by conferring a proper oral hygiene awareness session to the patients, who is reporting to the dental hospital for any sort of dental treatment or routine checkups. The general populations who have no reach to good dental care about the significance of maintaining good oral hygiene and high-quality aesthetics to lead a better and healthier life.

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