Journal of Craniomaxillofacial Research

Vol. 8, No. 4 Autumn 2021

Prevalence of oral soft tissue lesions: A review

Maryam Jolehar [1], Azadeh Zeinab Titidej [2*]

1. Department of Oral & Maxillofacial Pathology, Faculty of Dentistry, Tehran University of Medical Sciences, Islamic Azad University, Tehran, Iran.

2. Department of Oral & Maxillofacial Pathology, Dental Caries Prevention Research Center, Qazvin University of Medical Sciences, Qazvin, Iran.

ARTICLE INFO

Article Type:
Review Article

Received: 8 Jun. 2021
Revised: 5 Jul. 2021
Accepted: 19 Aug. 2021

**Corresponding author:*
Azadeh Zeinab Titidej

Department of Oral & Maxillofacial Pathology, Dental Caries Prevention Research Center, Qazvin University of Medical Sciences, Bahonar Blvd., Qazvin, Iran.

Tel: +98-912-8698966
Fax: +98-28-33353066
Email: azadeh_titidezh@Yahoo.com

ABSTRACT

Statement of the Problem: Mesenchymal tissue origin is one of the most common lesion in oral cavity. Most of these lesions are exuberant response to local irritation produces a soft tissue enlargement which are similar to neoplastic pathologic processes. Due to this diagnostic challenge the present study was conducted for reviewing the prevalence of soft tissue lesions.

Search Strategy: The English articles in scientific databases including Google Scholar, Science Direct, Medline, and PubMed, published between 2007 and 2019, were searched by using relevant keywords including oral soft tissue lesion, oral mucosal lesion, neoplastic soft tissue lesion, reactive lesion, hyperplastic lesion and non-neoplastic soft tissue lesion. Finally, forty-nine articles were reviewed in this study.

Conclusion: Findings showed that the most diagnosed lesions were benign in nature, and inflammatory in origin. Among this reactive/non-neoplastic lesions, fibrotic lesions, such as irritation fibroma or fibrous hyperplasia, were the most abundant lesions reported. There is a pronounced female predilection, and reactive lesions are most common in the fourth to sixth decades of life. Regarding the location of reactive lesions, the gingival mucosa was the most common site of involvement. Tumoral lesions with the origin of vascular, fibrotic and fat were the most commonly reported tumors.

Keywords: Mesenchyme; Oral neoplasms; Reactive lesions; Mucosal lesion; Hyperplastic lesion.

Introduction

Soft tissue can be defined as non-epithelial tissue, or extraskeletal mesenchymal tissue except the reticuloendothelial and glia systems [1]. Mesenchymal lesions are often seen as a smooth-surface nodule that represents healthy supernatant epithelium. The color of mesenchymal lesions varies according to their constituents. [2-3]. Diagnosis of oral soft tissue lesions is a challenge for clinicians because mesenchymal lesions, whether reactive and/or tumor, have no pathognomonic signs, and the appearance of these lesions is often the same. In this situation, this challenge can be overcome by knowing the exact medical and dental history of patients [4]. However, it is fortunate that a large percentage of soft tissue lesions are reactive and non-neoplastic lesions. Reactive lesions are lesions that result from chronic or recurrent irritations that differ in color, appearance, and volume from the normal oral mucosa. The clinical behavior of soft tissue lesions can vary in different populations and races, indicating different environmental factors and different lifestyles. In spite of numerous articles in this field, limited epidemiological studies on soft tissue lesions have been reported in Iranian population. However, such studies are necessary to

determine the prevalence and characteristics of soft tissue lesions in different populations, including the Iranian population, and are recommended by the World Health Organization (WHO) for promotion of oral health programs [5-7]. Therefore, comprehensive information on the prevalence of soft tissue lesions, whether reactive or tumor, may be useful for the diagnosis and treatment of patients. It should be noted that most soft tissue lesions have age, sex distribution and preferential location in the oral cavity which will help clinicians to diagnose and treat patients by conducting epidemiological studies and identifying them.

Search Strategies

The literature over the past 13 years (between 2007 to March 2019) were searched through Google Scholar, Science Direct, Medline and PubMed databases by using relevant keywords including, oral soft tissue lesion, oral mucosal lesion, neoplastic soft tissue lesion, reactive lesion, hyperplastic lesion and non-neoplastic soft tissue lesion. Finally, 49 articles were reviewed in this study. The results of several studies about sample size, most frequent soft tissue lesions, age, sex, and location are summarized separately in Table-1 [8-13].

Table 1. Demonstrates the summary of the reviewed studies.

No	Title of article	Date of publication/ First Authors (Reference No)	Sample size	Frequent soft tissue lesion	Sex	(Mean age±SD)/Age range	Location
1	Relative frequency of localized reactive hyperplastic lesions of the gingiva: a retrospective study of 1675 cases from Israel	2010 Buchner et al [8]	1675 (6.7%) RHL out of 25,106 accessed biopsies.	FFH (31.8%), followed by PG (29.1%), POF (20.4%), and PGCG (18.7%).	FFH, PG, and POF were more common in women, while PGCG showed no gender predilection.	POF tended to affect younger patients than did FFH, PG, and PGCG.	_
2	Reactive Hyperplasia of the Oral Cavity: A Survey of 197 Cases in Tabriz, Northwest Iran (Tabriz, Iran)	2010 Aghbali et al [9]	197 cases	fibroma (45.2%).	Male	37.68±18.97	Gingiva (83.9%)
3	Benign tumors of orofacial region at Benghazi, Libya: a study of 405 cases	2009 El-Gehani et al [10]	405 cases of benign tumors	Among the non-odontogenic tumors, fibrous and adipose tissue origin (33%), were the most common	-	-	-
4	A Survey of Soft Tissue Tumor-Like Lesions of Oral Cavity: A Clinico-pathological Study (Kerman, Iran)	2008 Hashemi Pour et al [11]	260 surgical specimens	fibrous lesions (55%) and soft hemorrhagic lesions(45%)	-	-	Gingiva
5	Reactive hyperplasia of the oral cavity in Kerman province, Iran: a review of 172 cases (Kerman, Iran) Reactive gingival lesions: A retrospective study of 2,439 cases (China)	2007 Zarei et al [12]	172 cases	PG and hyperplasia caused by dentures, PGCG were common	Female	36 years	Gingiva (64%)
6	Reactive gingival lesions: A retrospective study of 2,439 cases (China)	2007 Zhang et al [13]	A total of 2,439 epulides were identified.	Most epulides found were fibroma (61.05%), POF(17.67%), PG (19.76%), PGCG (1.52%).	Female	The third to sixth decade	-

RHLs: Reactive hyperplastic lesions, OMLs: Oral mucosal lesions, ORLs: Oral reactive lesions, LRLs: Localized reactive lesions, HN: Head and neck, PG: Pyogenic granuloma, POF: Peripheral ossifying fibroma, GCF: Giant cell fibroma, PGCG: Peripheral giant cell granuloma, GCG Lesion: Giant cell granuloma lesion, IFH: Inflammatory fibrous hyperplasia, IF: Irritation fibroma, FH: Fibrous hyperplasia, FFH: Focal fibrous hyperplasia, OSCC/SCC: Oral squamous cell carcinoma, MSGT: Minor salivary gland tumor.

Discussion

A review of 49 studies found that the majority of soft tissue lesions were of a histologically reactive nature [14-20]. However, as noted before, because of the clinical similarity of reactive lesions to tumor lesions, it is necessary to identify and differentiate them by young clinicians. Among the soft tissue reactive lesions, fibrotic lesions, such as stimulating fibroids or fiber hyperplasia, are the most frequently reported lesions among epidemiological studies in different regions of the world. (18 articles out of 49) [6,7,14,16,21-26].

In addition, Vidyanath et al. (2015) showed a direct relationship between the histologic features and clinical features of soft tissue lesions; [the most common soft tissue clinically diagnosed lesion was traumatic fibroids (69.3%) and the most common soft tissue histopathologically diagnosed lesion was fibrosis hyperplasia (51.9%)] [27]. The most common soft tissue reactive lesion was Pyogenic granuloma. Interestingly, in less than half of these papers, the most common lesion after pyrogenic granuloma was fibrotic lesions [33,34,36-38]. These differences in different regions of the world can be due to differences in people's attitudes to oral health and access to biopsy services by different populations. Peripheral giant cell granulomas and peripheral ossifying fibromas are reactive lesions that showed very low frequency in reviewing articles. These lesions were the most common reactive lesions in only 3 and 2 of the 49 articles, respectively [15,19,39-42].

More than half of the papers reviewed showed a higher prevalence of reactive lesions in women. The likelihood of reactive lesions is higher in the 4th to 6th decades of life [14,23,24,29,30,39,43-46]. Review of articles showed that gum is the most common site of involvement with reactive lesions (19 of 49 articles) followed by alveolar mucosa, labial mucosa, and buccal mucosa [15,19,22,23,27-30,33,37,47,48]. A review of articles focusing on the epidemiologic study of soft tissue lesions in children and adolescents showed that reactive lesions of salivary gland origin (especially mucocele and ranula) were the most commonly reported lesions [16,49]. However, in another study, peripheral ossifying fibroma was the most common reactive lesion in children [50]. Finally, soft tissue tumors (preferably of vascular, fibrotic, and adipose origin) make up a small percentage of oral cavity soft tissue lesions. It should be noted that in some studies, fibroma is classified as a benign tumor [29,34,51]. Literature reviews have reported hemangiomas as the most abundant soft tissue tumor of vascular origin [32,37,51,52].

Studies have shown that due to the similarity of clinical appearance of reactive soft tissue lesions with tumoral lesions, in more than 40% of cases neoplasia was not detected by clinician. Therefore, according to these results, the need for a biopsy of any soft tissue lesions of the oral mucosa is strongly felt [53].

Conclusion

Most of oral and maxillofacial biopsies were soft tissue lesions, benign in nature, and inflammatory in origin. Early detection and elimination of all causative factors is a crucial matter. The high prevalence of oral mucosal lesions necessitates adequate awareness and management of these lesions in the general population. Dental clinicians should be familiar with the etiopathogenesis, clinical presentation, diagnosis, and management of these lesions. Although the frequency of oral lesions in some articles is different from other, which is in agreement with the hypothesis of geographical distribution of these lesions. Despite the high prevalence of reactive oral cavity lesions, due to most of the benign oral lesions have a predilection to transform into malignant lesions and because in approximately 1% of cases they are malignant., therefore, all localized enlargements should be submitted for histopathologic examination and it is imperative to diagnose the pre malignant lesions of oral cavity in an early stage where appropriate treatment can be given. The major findings are broadly similar to the previous studies. However, knowledge of the frequency and distribution of these lesions is beneficial when establishing a diagnosis and treatment plan in clinical practice.

Conflict of Interest

There is no conflict of interest to declare.

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Please cite this paper as:
Jolehar M, Titidej AZ; Prevalence of oral soft tissue lesions: A review. J Craniomax Res 2021; 8(4): 172-177