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Intraoral Localized Reactive Hyperplastic Lesions in Sivas

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ABSTRACT

Purpose: This retrospective study aimed to contribute to literature by investigating the types and distribution of intraoral localized reactive hyperplastic lesions (LRHLs) in Sivas.

Patients and Methods: The histological diagnostic records of210 patientswhohad been treated for oral lesions from 1987 to 2008at the Department of Pathology at Cumhuriyet University were evaluated. The lesions were classified into four groups: focal fibrous hyperplasia (FFH), pyogenic granuloma (PG), peripheral giant cell granuloma (PGCG), and peripheral ossifying fibroma (POF). The lesions were analyzed with respect to histological diagnosis and site and the patient's age and gender.

Results:Ofthe 210 lesions, 82 (39.05%) were FFH, 79 (37.62%) PG, 41 (19.52%) PGCG, and 8 (3.81%) POF.The ages of the patients ranged from 6 to 80 years (mean age: 39.5±16.8 years), with a female–to–male ratio of 1.1:1.

Conclusions: Despite some discrepancies, the characteristics of LRHLs of Turkish patients are in line with those of patients from other countries according to lesion type, site distribution, and the age and gender of the patients.

Kew words: intraoral, reactive hyperplastic lesions, retrospective study, Sivas

SİVAS İLİ BÖLGESİNDE RASTLANAN AĞIZ İÇİ LOKALİZE REAKTİF HİPERPLASTİK LEZYONLAR

ÖZET

Amaç: Bu retrospektif çalışmada, Sivas ili bölgemizde rastlanan ağız içi lokalize reaktif hiperplastik lezyonların (LRHL) tipleri ve dağılımları araştırılarak literatüre katkı sağlamak amaçlandı.

Hastalar ve Yöntem: 1987 ile 2008 yılları arasında, ağız lezyonları tedavisi gören 210 hastanın Cumhuriyet Üniversitesi Patoloji Anabilim Dalındaki histolojik teşhis kayıtları değerlendirildi. Lezyonlar fokalfibrözhiperplazi (FFH), piyojenikgranüloma (PG), periferal dev hücreli granüloma (PDHG) ve periferalossifiyefibroma (POF) olarak 4 grupta sınıflandırıldı ve lezyonların histolojik tanısı, lokalizasyonu, hastaların yaşı ve cinsiyeti belirlendi.

Bulgular: Toplam 210 lezyonun 82'si (%39,05) FFH, 79'u (%37,62) PG, 41'i (%19,52) PDHG ve 8'i (%3,81) POF'dir. Bütün olgular 6-80 yaş aralığında (ortalama yaş 39,5±16,8) ve kadın erkek oranı 1.1:1dir.

Sonuç: Bazı çelişkilere rağmen,Türk hastalarındaLRHL'nin özellikleri; lezyonun tipi, lokalizasyonu, dağılımı, hastanın yaşı ve cinsiyeti açısından diğer ülkelerdeki hastalar ile uyuşmaktaydı.

Anahtar sözcükler: intraoral, reaktif hiperplastik lezyonlar, retrospektif çalışma, Sivas

Introduction

Oral mucosae are constantly subjected to external and internal inflammatory stimuli or traumatic irritants, such as calculus, food impaction, and restorations, and therefore manifest a spectrum of diseases, including developmental, reactive, and inflammatory nonspecific lesions (1,2). These irritants are associated with localized hyperplasia, which may be composed of mature collagen, cellular fibroblastic and mineralized tissues, as well as endothelial and multinucleated giant cells. These localized overgrowths are not as considered neoplasms but rather hyperplastic inflammatory reactions (2). The gingiva is the most common site for either neoplastic or non–neoplastic reactive lesions (3,4).

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The histological classification of intraoral localized reactive hyperplastic lesions (LRHLs) is somewhat confusing in the literature. Some researchers divide them into several types, whereas others insist that the different histological manifestations are part of a spectrum of a single lesion (2,5). This study follows the classification of Buchner et al. (2) that recognized four types of LRHLs: focal fibrous hyperplasia (FFH), pyogenic granuloma (PG), peripheral giant cell granuloma (PGCG), and peripheral ossifying fibroma (POF).

As studies of the incidence and the distribution of LRHLs are limited, this study aims to analyze the incidence and the distribution of LRHLs in Sivas populationand to provide data for comparison with previously published reports and epidemiological studies from different geographical areas. Demographic data from these various studies are vital for better understanding of the biological and clinical characteristics of the disease.

Material and methods

This study included patients from two different medical departments of Cumhuriyet University in Turkey: the Department of Oral and Maxillofacial Surgery and the Department of Otorhinolaryngology and Head and Neck Surgery. This study was approved by the Clinical Research Ethics Committee ofCumhuriyet University. LRHLs detected by the Pathology Department of Cumhuriyet Universityduring a 21–year period (1987–2008) were analyzed. The clinical and histopathological records of 210 patients with an LRHL were reviewed by the authors in consultation with a pathologist. The lesions, consisting of FFH, PG, PGCG, and POF, were analyzed as to histological diagnosis, age, gender, and the site from which the biopsy was taken. Due to the nature of the study, clinical reports from a few patients were unavailable and therefore were not included in this study.

Results

A total of 210 focal reactive lesions were histologically diagnosed and recorded in the biopsy records. The age of the patients ranged from 6 to 80 years (mean age: 39.5±16.8 years). Table 1 shows the site distribution of the LRHL according to the patient's gender and age. Of the 210 lesions, 110 belonged to women (52.4%) and 100 to men (47.6%), making a female–to–male ratio of 1.1:1. FFH was the most common type of LRHL (39.05%), followed by PG (37.62%), PGCG (19.52%), and POF (3.81%). FFH was more common in men, and PG was more common in women, whereas POF was rare. Tables 2 and 3 show the site and the age distribution of the lesions. Lowest occurrence site for LRHLs was the palate region of the maxilla, whereas highest lip was the most common site.With respect to the age distribution of LRHLs, they were between the third and fifth decades.

Table 1. Age range and gender affected of intraoral localized reactive hyperplastic lesions.

Lesions	Age (years)	Gender		Number	Percent (%)
		Male	Female		
Focal Fibrous Hyperplasia	7–80	44	38	82	39.05
Pyogenic granuloma	6–70	33	46	79	37.62
Peripheral giant cell granuloma	7–63	23	18	41	19.52
Peripheral ossifyin gfibroma	18–54	–	8	8	3.81
Total	6–80	100	110	210	100

The mean age of the patients with FFH was 38.6±16.2 years (53.7% in men and 46.3% in women). The lesions occurred primarily on the lip (30.5%), on the buccal mucosa (24.4%) and on the tongue (23.2%). Most of the cases of PG were foundin females (58.2%, mean age: 35.6±19.4 years). Samples were surgically removed from the lip (34.2%), from the gingiva (31.6%), and from the tongue (12.7%). Ten cases were undefined. PGCGs occurred more in men (56.1%) than in women (43.9%), and the combined mean age was 39.8±16.7 years. ThePGCGs occurred on the upper jaw (48.8%) and on the lower jaw (43.9%), with 7.3% of cases undefined. POF was most predominant on the upper jaw (62.5%) in female patients, with a mean age of 42.7±11.3 years.

Discussion

Reactive lesions of the oral cavity are tumor–like non–neoplastic proliferations produced in association with chronic local irritation or trauma. These proliferations are painless pedunculated or sessile masses, which vary in color from light pink to red. The surface is also variable, with a non–ulcerated smooth appearance to an ulcerated mass. The size of lesion ranges from a few millimeters to several centimeters (6). Intraoral LRHLs are relatively common lesions of the oral cavity in biopsiesperformed by pathological departments (2). They comprised 6.4% of 20,228 biopsies in a study from Canada, (7) 5% of 30,056 biopsies in a study from the United States, (8) 3.6% of 66,957 biopsies in the study from China, (3) and 6.7% of 25,106 biopsies

Table 2. Site distribution of intraoral localized reactive hyperplastic lesions.

Lesıons	*Upperjaw*	*Lowerjaw*	*Palate*	*Gingiva*	*Buccalmucosa*	*Tongue*	*Lip*	*Undefined*	*Total*
Focal Fibrous Hyperplasia	9	4	–	5	20	19	25	–	82
Pyogenic granuloma	–	–	1	25	6	10	27	10	79
Peripheral giant cell granuloma	20	18	–	–	–	–	–	3	41
Peripheral ossifying fibroma	5	3	–	–	–	–	–	–	8
Total	34	25	1	30	26	29	52	13	210

Table 3. Age distribution of intraoral localized reactive hyperplastic lesions.

Age group (years)	*Focal Fibrous Hyperplasia*	*Pyogenic granuloma*	*Peripheral giant cell granuloma*	*Peripheral ossifying fibroma*	*Total (%)*
0–10	3	7	3	–	13 (6.19)
11–20	5	8	3	–	16 (7.62)
21–30	10	11	4	1	26 (12.38)
31–40	20	18	4	2	44 (20.95)
41–50	15	13	10	2	40 (19.05)
51–60	11	9	7	3	30 (14.29)
>60	10	7	5	–	22 (10.48)
Unknown	8	6	5	–	19 (9.04)
Total	82	79	41	8	210 (100)

in a recent study from Israel (2). All theseLRHLsrepresent reactive hyperplasia of connective tissue in response to local irritation or trauma, with distinct clinical features (9).

The classification of reactive lesions in the oral cavity is confusing in the literature and has some differences. In many studies, the number of classified reactive lesions is generally limited (2,3,10). We classified these lesions into the following four groups using the system proposed by Buchner et al (2).

Focal fibrous hyperplasia (FFH)

FFH or fibroma is considered the most common soft tissue lesion in the oral cavity (11).Clinically, this lesion is a painless, firm, nodular mass with a smooth surface and normal coloration (2). This lesion is typically a few centimeters in diameter, pedunculated, or sessile and occurs frequently on the gingiva or buccal mucosa. Chronic irritation or trauma is frequently identified as the causative factor. FFH is most commonly found in females older than 30 years (11).

Pyogenic granuloma (PG)

PG is one of the inflammatory hyperplasias seen in the oral cavity. This term is a misnomer because the lesion is unrelated to infection and, in reality, arises in response to various stimuli, such as low–grade local irritation, traumatic injury, or hormonal factors (12). PGs are commonly vascular in appearance and usually bleed easily due to their extreme vascularity. The surface epithelium of PGs is ulcerated and overlies connective tissue, which contains numerous small and large endothelium-lined channels that are engorged with red blood cells (1). These lesions tend to occur slightly more often in females and frequently involve the gingiva of the maxillary region (13).

Peripheral giant cell granuloma (PGCG)

PGCG is a rare reactive exophytic lesion on the gingiva and alveolar ridge that usually occurs in response to local irritation or chronic trauma such as tooth extraction, badly finished fillings, unstable dental prosthesis, plaque, calculus, chronic infections, and impacted food (14). The condition has also been referred to as peripheral giant cell tumor, giant cell epulis, osteoclastoma, reparatory giant cell granuloma, and giant cell hyperplasia of the oral mucosa. Clinically, PGCG manifests as a firm, soft, bright nodule or as a sessile or pediculate mass. The color can range from dark red to purple or blue, and the surface is occasionally ulcerated. Although the lesions are generally

Table 4. Distribution according to gender, age and location of intraoral reactive lesions.

Study	*Year of publication*	*Number of cases*	*Most prevalent lesion*	*Gender*	Age range *(decade)*	*Location*
Naderi*et al.*[6]	2012	2068	Peripheral giant cell granuloma	Women	3rd/2–75 years	Gingiva
Effiom*et al.*[1]	2011	314	Pyogenic granuloma	Women	3rd	Maxilla
Amirchaghmaghi*et al.*[23]	2011	123	Traumatic fibroma	Women	5thand 6th	Buccalmucosa
Buchner*et al.*[2]	2010	1675	Focal Fibrous Hyperplasia	Women	5th	Mandible
Awange*et al.*[24]	2009	3135	Fibrousepulis	Women	2–78 agerange	Gingiva
Shamim*et al.*[4]	2008	244	Pyogenic granuloma	Women	3rd /20–29 years	Maxilla, gingiva
Zhang*et al.*[3]	2007	2439	Peripheral fibroma	Women	4th –7th	Maxilla, gingiva
Ababneh[25]	2006	183	Pyogenic granuloma	Women	20–29 years	Maxilla, gingiva
Batainehand Al–Dwairi[26]	2005	294	Fibroepithelial polyp	Women	4th	Buccalmucosa

less than 2 cm in diameter, they can range in size from small papules to enlarged masses and are located in the interdental papilla, in the edentulous alveolar margin, or at the marginal gum level (15).

Peripheral ossifying fibroma (POF)

POF is also called calcifying fibroblastic granuloma, peripheral odontogenic fibroma, peripheral cementifying fibroma, calcifyingand ossifying fibroid epulis, and peripheral fibroma with calcification. POF typically is a slow–growing lesion, which rarely reaches more than 3 cm in diameter. It occurs exclusively on the gingiva as a pedunculated or sessile mass, with the color varying from pink to slightly red. POFs are found most frequently in teenagers and young adults, and they have a high recurrence rate up to 20% (16).

Despite several different classifications of reactive lesions of the oral cavity in the literature, PGs are the most commonly reported (1,4,5,17). The distributions of theseintraoral reactive lesions are most frequently reported according to gender, decade of age, and location (1).Studies of different types of lessions within the last 10 years are set forth in the Table 4. We found that FFH was the most common lesion, followed by PG, PGCG, and POF. The differences in the incidence of these lesions may result from the use of different classification systems and geographic or ethnic factors. In the present study, PG was predominantly seen in women. This is consistent with previous reports in the literature (10,18).

Analyzing LRHLs by age shows some interesting differences between the types. PGs may occur at all ages, but they predominate in the second decade of life in young women, possibly because of the vascular effect of female hormones (12). Vilman (19) and Effiom (1) reported that PGs occurred in the third decade of life. Buchner (2) also reported that FFHs and PGs occurred over four decades. In the present study, FFHs and PGs occurred more frequently in the third decade of life. Although PGs were seen more frequently in women and on the gingiva, FFHs were observed more often in men and on the lip. In common with our findings, other studies have showed that PGCGs generally occur in the third to the sixth decade and most commonly in the fourth decade (3). In the literature, Anneroth and Singurdson (20) reported that the primary incidence of PGCGs was in the fourth and fifth decades, whereas Giansanti and Waldron (21) found they were most common in the second and fourth decades. Kfir et al. (10)also found that they were most frequent, in the fourth decade. In contrast with the findings of Buchner et al. (2), the incidence of POFs in our study was lower than that of the other lesion types, and they occurred between the second and sixth decades. Zhang et al. (3) reported a peak incidence of POFs in the fifth and sixth decades, whereasSoutham and Venkataraman (22) found the peak incidence to be between the second and fourth decades.

Conclusion

Although there is no consensus in the literature on the classification of oral reactive lesions, there is agreement with many of the clinical characteristics of these lesions. The discrepancies may be explained by geographic differences, the genetic backgrounds of the patients, and different of exposures to etiological factors. In summary, in the Sivas population, FFH is the most common type of LRHL, followed in decreasing order by PGs, PGCGs, and POFs.

References

1. Effiom OA, Adeyemo WL, Soyele OO. Focal Reactive lesions of the Gingiva: An Analysis of 314 cases at a tertiary Health Institution in Nigeria. Niger Med J 2011;52:35–40.
2. Buchner A, Shnaiderman–Shapiro A, Vered M. Relative frequency of localized reactive hyperplastic lesions of the gingiva: a retrospective study of 1675 cases from Israel. J Oral Pathol Med 2010;39:631–638.
3. Zhang W, Chen Y, An Z, Geng N, Bao D. Reactive gingival lesions: a retrospective study of 2,439 cases. Quintessence Int 2007;38:103–110.
4. Shamim T, Varghese VI, Shameena PM, Sudha S.A retrospective analysis of gingival biopsied lesions in South Indian population: 2001–2006. Med Oral Patol Oral Cir Bucal 2008;13:414–418.
5. Buchner A, Calderon S, Ramon Y. Localized hyperplastic lesions of the gingiva: a clinicopathological study of 302 lesions. J Periodontol 1977;48:101–104.
6. Naderi NJ, Eshghyar N, Esfehanian H. Reactive lesions of the oral cavity: A retrospective study on 2068 cases. Dent Res J (Isfahan) 2012;9:251–255.
7. Daley TD, Wysocki GP, Wysocki PD, Wysocki DM. The major epulides: clinicopathological correlations. J Can Dent Assoc 1990;56:627–630.
8. Layfield LL, Shopper TP, Weir JC. A diagnostic survey of biopsied gingival lesions. J Dent Hyg 1995;69:175–179.
9. Farahani SS, Navabazam A, Ashkevari FS. Comparison of mast cells count in oral reactive lesions. Pathology–Research and Practice 2010;206:151–155.
10. Kfir Y, Buchner A, Hansen LS. Reactive lesions of the gingiva. A clinico–pathological study of 741 cases. J Periodontol 1980;51:655–661.
11. Vergotine RJ. A giant cell fibroma and focal fibrous hyperplasia in a young child: a case report. Case Rep Dent 2012;2012:370242.
12. Jafarzadeh H, Sanatkhani M, Mohtasham N. Oral pyogenic granuloma: a review. J Oral Sci 2006;48:167–175.
13. Ravi V, Jacob M, Sivakumar, Saravanan S, Priya K. Pyogenic granuloma of labial mucosa: A misnomer in an anomolous site. J Pharm Bioallied Sci 2012;4(Suppl 2):S194–196.
14. Etoz OA, Demirbas AE, Bulbul M, Akay E.The peripheral giant cell granuloma in edentulous patients: report of three unique cases. Eur J Dent 2010;4:329–333.
15. Chaparro–Avendaño AV, Berini–Aytés L, Gay–Escoda C. Peripheral giant cell granuloma. A report of fivecases and review of the literature. Med Oral Patol Oral Cir Bucal 2005;10:53–57.
16. Prasad S, Reddy SB, Patil SR, Kalburgi NB, Puranik RS. Peripheral ossifying fibroma and pyogenic granuloma. Are they interrelated? NY StateDent J 2008;74:50–52.
17. Stablein MJ, Silverglade LB. Comparative analysis of biopsy specimens from gingiva and alveolar mucosa. J Periodontol 1985;56:671–676.
18. Angelopoulous AP. Pyogenic granuloma of the oral cavity: statistical analysis of its clinical features. J Oral Surg 1971;29:840–847.
19. Vilmann A, Vilmann P, Vilmamm H. Pyogenic granuloma evaluation of oral conditions. Br J Oral Maxillofac Surg 1986;24:376–382.
20. Anneroth G, Sigurdson A. Hyperplastic lesions of the gingiva and alveolar mucosa. A study of 175 cases. Acta Odontol Scand 1983;41:75–86.
21. Giansanti JS, Waldron CA. Peripheral giant cell granuloma: review of 720 cases. J Oral Surg 1969;27:787–791.
22. Southam JC, Venkataraman BK. Calcification and ossification in epulides in man (excluding giant cell epulides). Arch Oral Biol 1973;18:1243–1253.
23. Amirchaghmaghi M, Mohtasham N, Mosannen Mozafari P, Dalirsani Z. Survey of reactive hyperplastic lesions of the oral cavity in mashhad, northeast iran. J Dent Res Dent Clin Dent Prospects 2011;5:128–131.
24. Awange DO, Wakoli KA, Onyango JF,Chindia ML, Dimba EO, Guthua SW. Reactive localised inflammatory hyperplasia of the oral mucosa. East Afr Med J 2009;86:79–82.
25. Ababneh KT. Biopsied gingival lesions in northern Jordanians: A retrospective analysis over 10 years. Int J Periodontics Restorative Dent 2006;26:387–393.
26. Bataineh A, Al–Dwairi ZN. A survey of localized lesions of oral tissues: a clinicopathological study. J Contemp Dent Pract 2005;6:30–39.